



Republic of the Philippines  
Philippine Statistics Authority

# Philippine Standard Occupational Classification

POPCEN 2015



*Magpabilang. Magpa-Census!*



# **2012 Philippine Standard Occupational Classification**

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# Philippine Standard Occupational Classification for 2015 Census of Population (POPCEN 2015)

The 2012 Philippine Standard Occupational Classification (PSOC) is the most recent statistical classification of the different occupational groups of the working population, including the military work force in the country. It is patterned after the 2008 International Standard Classification of Occupations (ISCO) released by the International Labor Organization (ILO) but with modifications to suit the national situations and requirements. The 1992 PSOC is the predecessor of the 2012 PSOC. It is primarily used as guide for statistical operations and activities, such as censuses and surveys, manpower and educational planning, as well as program formulation and policy decision-making.

In the 2012 PSOC, each occupation is provided with detailed description and in most cases, presented with specific examples of occupation. Further, each occupation is classified according to the level of occupational grouping and provided with corresponding code. The code serves to denote levels of occupational grouping and to provide some indications of the nature of the occupation covered. The highest level of occupational grouping and broad field of work is represented by a one-digit code as follows:

Code	Major Group of Occupation
1	Managers
2	Professionals
3	Technicians and Associate Professionals
4	Clerical Support Workers
5	Service and Sales Workers
6	Skilled Agricultural, Forestry, and Fishing Workers
7	Craft and Related Trade Workers
8	Plant and Machine Operators
9	Elementary Occupations
0	Armed Forces Occupations and Non-gainful Activities, and Special Occupations

The 2012 PSOC is also presented with two-digit code which represents the sub-major group of occupation; three-digit code that corresponds to the minor group; and the four-digit code for the unit group.

In coding the write-in entries on usual activity/occupation reported in the accomplished questionnaires for the POPCEN 2015, the four-digit code corresponding to the occupation will be used (see detailed discussion of the 2012 PSOC Coding Scheme in the next page). To facilitate coding, the 2012 PSOC has been prepared in two parts. The first part is the listing of occupation in hierarchical order with corresponding one-digit, two-digit, three-digit, and four-digit codes on pages 3 to 277. The second part is the listing of occupation in alphabetical order with corresponding four-digit code on pages 281 to 321.

# The 2012 PSOC Coding Scheme

The 2012 Philippine Standard Occupational Classification (PSOC) coding scheme has a **one-digit code** representing the *major group*, a **two-digit code** for the sub-*major group*, **three-digit code** representing the *minor group*, and a **four-digit code** as the *unit group*.

To Illustrate:

**2122 STATISTICIANS**

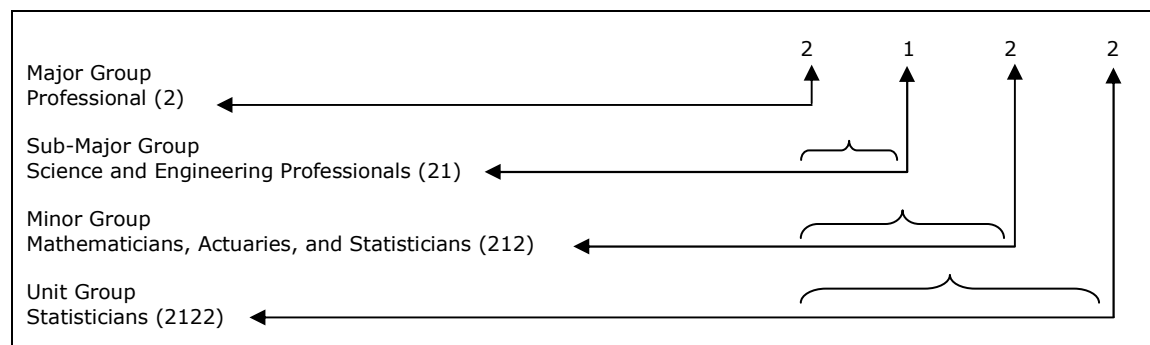
Workers in this unit group conduct research, improve or develop mathematical and other aspects of statistical concepts, theories and operational methods and techniques, and advise on or engage in their practical application, in such fields as business or medicine, as well as in other areas of natural, social or life sciences.

Their tasks include:

- a) studying, improving and developing statistical theories and methodologies;
- b) planning and organizing surveys and other statistical collections, and designing questionnaires;
- c) evaluating, processing, analyzing, and interpreting statistical data and preparing them for publication;
- d) advising on or applying various data collection methods and statistical methods and techniques, and determining reliability of findings, especially in such fields as business or medicine as well as in other areas of natural, social or life sciences; and
- e) preparing scientific papers and reports.

**Examples:**

Biometrician	Statistician (applied statistics)
Demographer	Statistician (general)
Mathematical statistician	Survey statistician



For POPCEN 2015, the usual activity/occupation will be coded using the four-digit code of PSOC.

# Changes on the 2012 PSOC

New sub-major groups were created in the 2012 PSOC by splitting some major groups in the 1992 PSOC in order to suit national situations and requirements. Below are the changes on the broad structure of the 2012 PSOC from the 1992 PSOC:

## SUMMARY OF CHANGES ON THE BROAD STRUCTURE

Group	1992 PSOC	2012 PSOC
Major group	10	10
Sub-major group	33	43
Minor group	134	130
Unit group	438	436

## COMPARISON OF THE BROAD STRUCTURE BETWEEN THE 2012 PSOC AND 1992 PSOC

2012 PSOC					1992 PSOC				
Major Group	Descriptions	No. of Sub-Major Group	No. of Minor Group	No. of Unit Group	Major Group	Descriptions	No. of Sub-Major Group	No. of Minor Group	No. of Unit Group
1	Managers	4	11	31	1	Officials of government and special-interest organizations, corporate executives, managers, managing proprietors and supervisors	4	13	47
2	Professionals	6	27	92	2	Professionals	4	20	68
3	Technicians and associate professionals	5	20	84	3	Technicians and associate professionals	4	18	67
4	Clerical support workers	4	8	29	4	Clerks	2	7	23
5	Service and sales workers	4	13	40	5	Service workers and shop and market sales workers	2	9	23
6	Skilled agricultural, forestry and fishery workers	3	9	18	6	Farmers, forestry workers and fishermen	5	16	36
7	Craft and related trades workers	5	14	66	7	Trades and related workers	4	16	71
8	Plant and machine operators and assemblers	3	14	40	8	Plant and machine operators and assemblers	3	19	66
9	Elementary occupations	6	11	33	9	Laborers and unskilled workers	3	10	25
0	Armed forces occupations	3	3	3	0	Special occupations	2	6	12
<b>Total</b>		<b>43</b>	<b>130</b>	<b>436</b>			<b>33</b>	<b>134</b>	<b>438</b>





# **Hierarchical Listing of Occupation with Corresponding One-Digit, Two-Digit, Three-Digit, and Four-Digit Code**



## **MAJOR GROUP 1**

### **MANAGERS**

Managers plan, direct, coordinate and evaluate the overall activities of enterprises, governments and other organizations, or of organizational units within them, and formulate and review their policies, laws, rules and regulations.

Tasks performed by managers usually include: formulating and advising on the policy, budgets, laws and regulations of enterprises, governments and other organizational units; establishing objectives and standards and formulating and evaluating programs and policies and procedures for their implementation; ensuring appropriate systems and procedures are developed and implemented to provide budgetary control; authorizing material, human and financial resources to implement policies and programs; monitoring and evaluating performance of the organization or enterprise and of its staff; selecting, or approving the selection of staff; ensuring compliance with health and safety requirements; planning and directing daily operations; representing and negotiating on behalf of the government, enterprise or organizational unit managed in meetings and other forums.

#### **11 CHIEF EXECUTIVES, SENIOR OFFICIALS AND LEGISLATORS**

Chief executives, senior officials and legislators formulate and review the policies and plan, direct coordinate and evaluate the overall activities of enterprises, governments and other organizations with the support of other managers.

Tasks performed usually include: presiding over or participating in the proceedings of legislative bodies, boards of directors and committees; formulating and advising on the policy budgets, laws and regulations of enterprises, governments and other organizations; establishing objectives for enterprises, government departments or agencies and other organizations; formulating or approving and evaluating programs and policies and procedures for their implementation; ensuring appropriate systems and procedures are developed and implemented to provide budgetary control; authorizing material, human and financial resources to implement policies and programs; monitoring and evaluating performance of the organization or enterprise; selecting, or approving the selection of senior staff; performing ceremonial duties and representing the enterprise, government, organization or community at official occasions and in meetings, negotiations, conventions and public hearings.

##### **111 LEGISLATORS AND SENIOR OFFICIALS**

Legislators and senior officials determine, formulate, advise on and direct the implementation of policies of national, state, regional or local governments or communities, and of special interest organizations. They make, ratify, amend or repeal laws, public rules and regulations and plan, organize, direct, control and evaluate the overall activities of government departments and agencies, traditional communities and special interest organizations.

Tasks performed usually include: presiding over or participating in the proceedings of legislative bodies and administrative councils of governments, legislative assemblies, local communities and special interest organizations; serving on government administrative boards or official committees; investigating matters of concern to the public and promoting the interests of constituents; formulating and advising on government policy, budgets, laws and regulations; establishing objectives for organizations and formulating or approving and evaluating programs and policies and procedures for their implementation; recommending, reviewing, evaluating and approving documents, briefs and reports submitted; ensuring appropriate systems and procedures are developed and implemented to provide budgetary control; allocating the use of communal land and other resources; performing ceremonial duties and representing the government, organization or community at official occasions and in meetings, negotiations, conventions and public hearings.

**1111 LEGISLATORS**

Legislators determine, formulate, and direct policies of national, state, regional or local governments and international governmental agencies, and make, ratify, amend or repeal laws, public rules and regulations. They include elected and non-elected members of parliaments, councils and governments.

Their tasks include:

- a) presiding over or participating in the proceedings of legislative bodies and administrative councils of national, state, regional or local governments or legislative assemblies;
- b) determining, formulating, and directing policies of national, state, regional or local governments;
- c) making, ratifying, amending or repealing laws, public rules and regulations within a statutory or constitutional framework;
- d) serving on government administrative boards or official committees;
- e) investigating matters of concern to the public and promoting the interests of the constituencies which they represent;
- f) attending community functions and meetings to provide service to the community, understand public opinion and provide information on government plans;
- g) negotiating with other legislators and representatives of interest groups in order to reconcile differing interests, and to create policies and agreements; and
- h) as members of the government, directing senior administrators and officials of government departments and agencies in the interpretation and implementation of government policies.

**Examples:**

City/Municipal Councilor  
 Congressman  
 Governor/Vice Governor  
 Mayor/Vice Mayor  
 Senator

Member of the Barangay Council  
 (Sangguniang Pambarangay)  
 Member of the Provincial Board  
 (Sangguniang Panlalawigan)

**1112 SENIOR GOVERNMENT OFFICIALS**

Senior government officials advise governments on policy matters, oversee the interpretation and implementation of government policies and legislation by government departments and agencies, represent their country abroad and act on its behalf, or carry out similar tasks in intergovernmental organizations. They plan, organize, direct, control and evaluate the overall activities of municipal or local, regional and national government departments, boards, agencies or commissions in accordance with legislation and policies established by government and legislative bodies.

Their tasks include

- a) advising national, state, regional or local governments and legislators on policy matters;
- b) advising on the preparation of government budgets, laws and regulations, including amendments;
- c) establishing objectives for government departments or agencies in accordance with government legislation and policy;
- d) formulating or approving and evaluating programs and procedures for the implementation of government policies in conjunction or consultation with government;
- e) recommending, reviewing, evaluating and approving documents, briefs and

- reports submitted by middle managers and senior staff members;
- f) ensuring appropriate systems and procedures are developed and implemented to provide budgetary control;
  - g) coordinating activities with other senior government managers and officials;
  - h) making presentations to legislative and other government committees regarding policies programs or budgets; and
  - i) overseeing the interpretation and implementation of government policies and legislation by government departments and agencies.

**Examples:**

Administrator/Deputy Administrator	Director/Assistant Director
Ambassador	Executive Director/Deputy Executive
Attaché	Director
Cabinet Secretary/Under Secretary/ Assistant Secretary	Governor/Deputy Governor of the Central Bank
Chairman/Vice Chairman	Inspector-general (police)
Chief of Staff	Ombudsman
City Administrator	Postmaster General
Civil Registrar	President/Vice President of the Republic of the Philippines
Commissioner/Deputy	Solicitor General
Commissioner/Assistant Commissioner	Treasurer of the Philippines
Consul General	Police commissioner
Consul	Police inspector-general
Director General/Deputy Director	Police chief constable
General/Assistant Director General	

**1113 TRADITIONAL CHIEFS AND HEADS OF VILLAGES**

Traditional chiefs and heads of villages perform a variety of legislative, administrative and ceremonial tasks and duties, determined by ancient traditions, as well as by the division of rights and responsibilities between village chiefs and the local, regional and national authorities.

Their tasks include:

- a) allocating the use of communal land and other resources among households in the community or village;
- b) collecting and distributing surplus production of the community or village; settling disputes between members of the community or village;
- c) settling disputes between members of the community or village;
- d) disciplining members of the community or village for violation of rules and customs;
- e) performing ceremonial duties in connection with births, marriages, deaths, harvests and other important occasions;
- f) representing the community or village on local or regional councils; and
- g) informing the community or village about government rules and regulations.

**Examples:**

Barangay Chairman/Captain	Other barangay officials
Barangay secretary	Tribe Chieftain
Barangay treasurer	Village/tribe head

**1114 SENIOR OFFICIALS OF SPECIAL-INTEREST ORGANIZATIONS**

Senior officials of special-interest organizations determine, formulate and direct the implementation of policies of special-interest organizations, such as political-party organizations, trade unions, employers' organizations, trade and industry associations, humanitarian or charity organizations, or sports associations, and represent their organizations and act on their behalf.

Their tasks include:

- a) determining and formulating the policies, rules and regulations of the organization;
- b) planning, directing and coordinating the general functioning of the organization;
- c) reviewing the operations and results of the organization and reporting to boards of directors and governing bodies, the organization's membership and funding agencies;
- d) negotiating on behalf of the organization, its members and relevant special-interest groups;
- e) promoting the interests of the organization, its members and relevant special-interest groups before the legislature, government or general public;
- f) planning, organizing and directing sections charged with implementing the organization's policies, programmes, rules and regulations;
- g) ensuring appropriate systems and procedures are developed and implemented to provide budgetary control;
- h) monitoring and evaluating performance of the organization or enterprise against established objectives and policies; and
- i) representing the organization at official occasions and board meetings, in negotiations, at conventions, public hearings and forums.

**Examples:**

Economic-interest organization Senior official	Political party Leader Political party President
Employers' organization President	Political party Senior Official
Employers' organization Secretary-General	Special-interest organization Senior Official
Employers' organization Senior Official	Trade union president
Humanitarian organization Senior Official	Trade union Secretary-General
Labor organization Senior Official	Trade union Senior Official

**112 MANAGING DIRECTORS AND CHIEF EXECUTIVES**

Managing directors and chief executives formulate and review the policies and plan, direct, coordinate and evaluate the overall activities of enterprises or organizations (except special interest organizations and government departments) with the support of other managers, usually within guidelines established by a board of directors or a governing body to whom they are answerable for the operations undertaken and results.

Tasks performed usually include: planning, directing and coordinating the general functioning of an enterprise or organization; reviewing the operations and results of the enterprise, or organization, and reporting to boards of directors and governing bodies; determining objectives, strategies, policies and programs for the enterprise or organization; providing overall direction and management to organizations; establishing and managing budgets, controlling expenditure and ensuring the efficient use of resources; authorizing material, human and financial resources to implement organizational policies and programs; monitoring and evaluating performance of the organization or enterprise against established objectives and policies; consulting with senior subordinate staff and reviewing recommendations and reports; representing the organization at

official occasions, in negotiations, at conventions, seminars, public hearings and forums; selecting, or approving the selection of senior staff; ensuring the organization complies with relevant legislation and regulations.

## 1120 MANAGING DIRECTORS AND CHIEF EXECUTIVES

Their tasks include :

- a) planning, directing and coordinating the general functioning of an enterprise or organization;
- b) reviewing the operations and results of the enterprise, or organization and reporting to boards of directors and governing bodies;
- c) determining objectives, strategies, policies and programs for the enterprise or organization;
- d) providing overall leadership and management to the enterprise or organization;
- e) establishing and managing budgets, controlling expenditure and ensuring the efficient use of resources;
- f) authorizing material, human and financial resources to implement organizational policies and programs;
- g) monitoring and evaluating performance of the organization or enterprise against established objectives and policies;
- h) consulting with senior subordinate staff and reviewing recommendations and reports;
- i) representing the organization at official occasions and board meetings, in negotiations, at conventions, seminars, public hearings and forums;
- j) selecting, or approving the selection of senior staff; and
- k) ensuring the organization complies with relevant legislation and regulations.

### Examples:

Chief Executive Officer	Organization/enterprise Executive Vice-President
Chief Operation Officer	
Corporate Director	Organization/enterprise President
Corporation Chief executive	Organization/enterprise Senior Vice-President
Director of the Board	
Managing Director	Organization/enterprise Special assistant supervisor
Organization/enterprise Board Directors and Members	Organization/enterprise Supervising governor
Organization/enterprise Deputy administrator	Organization/enterprise Vice-President
Organization/enterprise Executive Assistant	President (organization/enterprise)
University chancellor	Regional manager

## 12 ADMINISTRATIVE AND COMMERCIAL MANAGERS

Administrative and commercial managers plan, organize, direct, control and coordinate the financial, administrative, human resource, policy, planning, research and development, advertising, public relations, and sales and marketing activities of enterprises and organizations, or of enterprises that provide such services to other enterprises and organizations.

Tasks performed by workers in this sub-major group usually include: formulating and administering policy advice, strategic and financial planning; establishing and directing operational and administrative procedures; implementing, monitoring and evaluating strategies and policies; providing advice to senior managers; directing the development of initiatives for new products, marketing, public relations and advertising campaigns; determining and directing sales activities, product mix, customer service

standards; setting prices and credit arrangements; ensuring compliance with relevant legislation, regulations and standards; controlling selection, training and performance of staff; preparing budgets and overseeing financial operations; consulting with the chief executive and with managers of other departments or sections; controlling expenditure and ensuring the efficient use of resources; representing the enterprise or organization in negotiations, and at conventions, seminars, public hearings and forums.

## **121 BUSINESS SERVICES AND ADMINISTRATION MANAGERS**

Business services and administration managers plan, organize, direct, control and coordinate the financial, administrative, human resource, policy, planning, activities of organizations, or of enterprises that provide such services to other enterprises and organizations.

Tasks usually include: formulating and administering policy advice, strategic and financial planning; establishing and directing operational and administrative procedures; implementing, monitoring and evaluating strategies and policies; providing advice to senior managers and board members on financial, administrative strategic, policy, program and legislative issues; ensuring compliance with relevant legislation, regulations and standards; controlling selection, training and performance of staff; preparing budgets and overseeing financial operations; consulting with the chief executive and with managers of other departments or sections; controlling expenditure and ensuring the efficient use of resources; representing the organization in negotiations, and at conventions, seminars, public hearings and forums.

### **1211 FINANCE MANAGERS**

Finance managers plan, direct and coordinate the financial operations of an enterprise or organization, in consultation with senior managers and with managers of other departments or sections.

Their tasks include:

- a) planning, directing and coordinating the financial operations of an enterprise or organization;
- b) assessing the financial situation of the enterprise or organization, preparing budgets and overseeing financial operations;
- c) consulting with the chief executive and with managers of other departments or sections;
- d) establishing and managing budgets, controlling expenditure and ensuring the efficient use of resources;
- e) establishing and directing operational and administrative procedures;
- f) planning and directing daily operations;
- g) overseeing the selection, training and performance of staff;
- h) representing the enterprise or organization in dealings with outside bodies.

#### **Examples:**

Accounting manager	Compensation manager
Administration manager	Compensation manager
Budgeting manager	Finance manager
Business services managing-proprietor	Internal audit manager
Company secretary	Investment manager

### **1212 HUMAN RESOURCE MANAGERS**

Human resource managers plan, direct and coordinate policies concerning the personnel, industrial relations and occupational health and safety activities of an enterprise or organization, or of enterprises that provide human resource services to other enterprises and organizations.



Their tasks include:

- a) planning, directing and coordinating the personnel and industrial relations activities, policies and practices of an enterprise or organization;
- b) planning and organizing procedures for recruitment, training, promotion, transfer and dismissal of staff;
- c) planning and organizing negotiations and procedures for determination of wage structures and level and for consultation with workers on conditions of employment;
- d) overseeing safety, health and related programmes and activities;
- e) establishing and managing budgets, controlling expenditure and ensuring the efficient use of resources;
- f) establishing and directing operational and administrative procedures;
- g) overseeing the development and implementation of management information systems;
- h) ensuring compliance with standards and legislation relating to employees rights, health and safety, equal opportunity and related concerns;
- i) overseeing the selection, training and performance of staff for the entire enterprise or organization;
- j) consulting with senior management and with managers of other departments; and
- k) representing the enterprise or organization in dealings with outside bodies.

**Examples:**

Assistant training manager	Personnel/human resource manager
Industrial relations manager	Recruitment Manager
Benefits manager	Training center manager
Industrial zone manager	Training manager
Labor relations manager	Welfare manager

### 1213 POLICY AND PLANNING MANAGERS

Policy and planning managers plan, organize, direct and coordinate policy advice and strategic planning activities within government or for non-government organizations and private sector agencies, or manage the activities of enterprises that provide policy and strategic planning services.

Their tasks include:

- a) developing, implementing and monitoring strategic plans, programs, policies, processes, systems and procedures to achieve goals, objectives and work standards;
- b) developing, directing, administering and participating in policy research and analysis;
- c) coordinating the implementation of policies and practices;
- d) establishing activity measures and measurements of accountability;
- e) planning and directing daily operations;
- f) leading and managing the activities of policy development and strategic planning staff;
- g) overseeing the selection, training and performance of staff; and
- h) representing the enterprise or organization in negotiations, and at conventions, seminars, public hearings and forums.

**Examples:**

Corporate compliance manager	Corporate services manager
Corporate planning manager	Policy manager
Corporate quality assurance manager	Strategic planning manager

**1219 BUSINESS SERVICES AND ADMINISTRATION MANAGERS NOT ELSEWHERE CLASSIFIED**

This unit group covers business services and administration managers not classified elsewhere in minor group 121, Business services and administration managers. For instance, the group includes occupations such as facilities manager, cleaning services manager, administrative services manager.

Their tasks would include:

- a) providing administrative, strategic planning and operational support, research and advice to senior management on matters such as the management of building facilities and administrative services;
- b) developing and managing the organization's administrative and physical resources;
- c) developing and implementing administrative and procedural statements and guidelines for use by staff in the organization;
- d) analyzing complex resource management issues and initiatives that affect the organization, and preparing associated reports, correspondence and submissions;
- e) providing information and support for the preparation of financial reports and budgets;
- f) leading, managing and developing administrative staff to ensure smooth business operations and the provision of accurate and timely information;
- g) representing the enterprise or organization in negotiations, and at conventions, seminars, public hearings and forums;
- h) establishing and managing budgets, controlling expenditure and ensuring the efficient use of resources;
- i) planning and directing daily operations; and
- j) overseeing the selection, training and performance of staff.

**Examples:**

Administrative services manager	Impresario
Cleaning services manager	Personal care services managing-proprietor
Cleaning services managing-proprietor	Production and operations/personal care manager
Facilities manager	Project manager
Production & operations manager (extra territorial organization)	Purchasing manager
Production and operations/business services manager	Safety manager
Production and operations/cleaning manager	Specialized manager
	Telephone manager
	Telegraph manager

**122 SALES, MARKETING AND DEVELOPMENT MANAGERS**

Sales, marketing and development managers plan, organize, direct, control and coordinate the advertising, public relations, research and development, and sales and marketing activities of enterprises and organizations, or of enterprises that provide such services to other enterprises and organizations.

Tasks usually include: formulating and implementing policies and plans for advertising, public relations, product development, sales and marketing in consultation with other managers; directing the development of initiatives for new products or scientific research; marketing, public relations and advertising campaigns; determining and directing sales activities, product mix, customer service standards and merchandising methods and distribution policy; setting prices and credit arrangements; establishing and managing budgets and controlling expenditure to ensure the efficient use of resources; overseeing the selection, training and performance of staff; and representing the enterprise or organization at conventions, trade exhibitions and other forums.

**1221 SALES AND MARKETING MANAGERS**

Sales and marketing managers plan, direct and coordinate the sales and marketing activities of an enterprise or organization, or of enterprises that provide sales and marketing services to other enterprises and organizations.

Their tasks include:

- a) planning and organizing special sales and marketing programmes based on sales records and market assessments; planning and directing daily operations;
- b) determining price lists, discount and delivery terms, sales promotion budgets, sales methods, special incentives and campaigns;
- c) establishing and directing operational and administrative procedures related to sales and marketing activities;
- d) leading and managing the activities of sales and marketing staff;
- e) planning and directing daily operations
- f) establishing and managing budgets and controlling expenditure to ensure the efficient use of resources;
- g) overseeing the selection, training and performance of staff; and
- h) representing the enterprise or organization at sales and marketing conventions, trade exhibitions and other forums.

**Examples:**

Credit card operations manager	Marketing manager
Customer credit manager	Sales manager
Customer services manager	Sales director
Economic enterprise manager	Sales vice-president
Front office manager	Store manager
Organization/enterprise marketing	Telemarketing manager
Marketing executive	

**1222 ADVERTISING AND PUBLIC RELATIONS MANAGERS**

Advertising and public relations managers plan, direct and coordinate the advertising, public relations and public information activities of enterprises and organizations or of enterprises that provide related services to other enterprises and organizations.

Their tasks include:

- a) planning, directing and coordinating the advertising and public relations activities of an enterprise or organization;
- b) negotiating advertising contracts with clients or with newspapers, radio and television stations, sports and cultural organizations and advertising agencies;
- c) planning and managing information programmes to inform legislators, the mass media and the general public about the plans, accomplishments and points of view of the enterprise or organization;
- d) leading and managing the activities of advertising and public relations staff;
- e) establishing and managing budgets and controlling expenditure and ensuring the efficient use of resources;
- f) establishing and directing operational and administrative procedures;
- g) planning and directing daily operations; and
- h) overseeing the selection, training and performance of staff.

**Examples:**

Ads & promo assistant manager	Graphic director
Advertising manager	Layout director
Advertising director	Promotions department manager

Broadcast stations manager	Public relations manager
Circulation manager	Television program producer
Chief communication development officer (government)	Television stations manager

### 1223 RESEARCH AND DEVELOPMENT MANAGERS

Research and development managers plan, direct and coordinate the research and development activities of an enterprise or organization or of enterprises that provide related services to other enterprises and organizations.

Their tasks include:

- a) planning, directing and coordinating research and development activities, in-house or commissioned from external research organizations, to develop new or improved technical processes, products, knowledge, or utilization of materials;
- b) planning the overall research and development programme of an enterprise or organization, specifying goals and budgetary requirements;
- c) leading and managing the activities of research and development staff;
- d) establishing and managing budgets, controlling expenditure and ensuring the efficient use of resources;
- e) establishing and directing operational and administrative procedures;
- f) planning and directing daily operations;
- g) overseeing the selection, training and performance of staff; and
- h) representing the enterprise or organization at conventions, seminars and conferences.

#### Examples:

Product development manager	Research and development manager
Project development manager	Research manager

## 13 PRODUCTION AND SPECIALIZED SERVICES MANAGERS

Production and specialized services managers plan, direct, and coordinate the production of the goods and the provision of the specialized professional and technical services provided by an enterprise or organization. They are responsible for manufacturing, mining, construction, logistics, information and communications technology operations, for large scale agricultural, forestry and fisheries operations, and for the provision of health, education, social welfare, banking, insurance and other professional and technical services.

Tasks performed by workers in this sub-major group usually include: planning details of activities in terms of output, services provided, quality, quantity, cost, timeliness and labor requirements; setting standards and objectives; controlling the operation of plant and of procedures; assuring quality of the goods produced and services provided; preparing tenders and contract bids; establishing and managing budgets, monitoring costs, and adjusting activities, procedures and resources to minimize costs; overseeing the acquisition and installation of new plant and equipment; coordinating the implementation of health and safety requirements; planning and directing daily operations; controlling the operation of plant and of procedures; overseeing the selection, training and performance of staff; preparing, or arranging for the preparation of, reports, budgets and forecasts; and representing the enterprise or organization in negotiations with other agencies, and at conventions, seminars, public hearings and forums.

**131 PRODUCTION MANAGERS IN AGRICULTURE, FORESTRY AND FISHERIES**

Production managers in agriculture, forestry and fisheries plan, direct, and coordinate production in large scale agricultural, horticultural, forestry aquaculture and fishery operations such as plantations, large ranches, collective farms and co-operatives to grow and harvest crops, breed and raise livestock, fish and shellfish and to catch and harvest fish and other forms of aquatic life.

Tasks performed usually include: monitoring market activity and planning production to meet contract requirements and market demand; establishing and managing budgets, monitoring production output and costs, recording information such as farm and fisheries management practices, and preparing financial and operational reports; conferring with buyers to arrange for the sale of crops, catch and stock; contracting with farmers, skippers or independent owners for production of produce and management of production; planning the type, intensity and sequence of operations; purchasing machinery, equipment, and supplies; identifying and controlling environmental toxins, weeds, pests and diseases; organizing operations such as maintaining buildings, water supply systems and equipment; and overseeing the selection, training and performance of workers and contractors.

**1311 AGRICULTURAL AND FORESTRY PRODUCTION MANAGERS**

Agricultural and forestry production managers plan, direct, and coordinate production in large scale agricultural, horticultural and forestry operations such as plantations, large ranches, collective farms and agricultural co-operatives to grow and harvest crops, and breed and raise livestock.

Their tasks include:

- a) monitoring agricultural and forestry market activity and planning production to meet contract requirements and market demand;
- b) establishing and managing budgets, monitoring production output and costs, recording information such as farm management practices, and preparing financial and operational reports;
- c) conferring with buyers to arrange for the sale of crops and livestock;
- d) contracting with farmers or independent owners for production of crops and livestock, or for management of production;
- e) planning the type, intensity and sequence of farm operations (e.g. determining the best times for planting, spraying and harvesting);
- f) analyzing soil to determine types and quantities of fertilizer required for maximum production;
- g) purchasing machinery, equipment, and supplies such as tractors, seed, fertilizer, and chemicals;
- h) identifying and controlling agricultural and forest environmental toxins, weeds, pests and diseases;
- i) organizing farming operations such as maintaining buildings, water supply systems and equipment;
- j) directing and coordinating activities such as planting, irrigation, chemical application, harvesting, and grading;
- k) inspecting plantations and fields to determine maturity dates of crops, or to estimate potential crop damage from weather; and
- l) overseeing the selection, training and performance of agricultural and forestry workers and contractors.

**Examples:**

Agriculture general manager  
Farm/overseers manager  
Forestry/hunting general manager

Plantation manager  
Production & operations/agriculture manager

**1312 AQUACULTURE AND FISHERIES PRODUCTION MANAGERS**

Aquaculture and fisheries production managers plan, direct, and coordinate production in large scale aquaculture and fishery operations to catch and harvest fish and shellfish, and to grow fish shellfish or other forms of aquatic life, as cash crops or for release into freshwater or saltwater.

Their tasks include:

- a) monitoring aquaculture and fishery market activity and planning production and fishing activities to meet contract requirements and market demand;
- b) establishing and managing budgets, monitoring production output and costs, recording information such as fisheries management practices, and preparing financial and operational reports;
- c) conferring with buyers to arrange for the sale of produce and catches;
- d) contracting with fishing skippers or owners of vessels and aquaculture farms for fishing and aquaculture operations, or for management of production;
- e) conducting and organizing aquaculture or fishery stock examinations in order to identify diseases or parasites;
- f) devising and coordinating activities to improve fish hatching and growth rates, and to prevent disease in hatcheries;
- g) monitoring environments to maintain or improve conditions for aquatic life;
- h) directing and monitoring trapping and spawning of fish, egg incubation, and fry rearing, applying knowledge of management and fish culturing techniques;
- i) coordinating the selection and maintenance of brood stock;
- j) directing and monitoring the transfer of mature fish to lakes, ponds, streams, or commercial tanks;
- k) purchasing machinery, equipment, and supplies such as vessels and nets;
- l) organizing operations such as maintenance of ships, boats and equipment; and
- m) overseeing the selection, training and performance of aquaculture or fishery workers and contractors.

**Examples:**

Aquaculture production manager	Production and operations/fishing, hunting
Fishing operations manager	and forestry manager
General Manager, fishing	Shore captain (fishing)
Trawler manager	

**132 MANUFACTURING, MINING, CONSTRUCTION, AND DISTRIBUTION MANAGERS**

Manufacturing, mining, construction, and distribution managers plan, organize, and coordinate the manufacturing, mineral extraction, construction, supply, storage and transportation operations.

Tasks performed usually include: planning details of activities in terms of output quality and quantity, cost, timeliness and labor requirements; controlling the operation of plant and quality procedures through planning of maintenance, designation of operating hours and supply of equipment; preparing tenders and contract bids; establishing and managing budgets, monitoring production output and costs, and adjusting processes and resources to minimize costs; overseeing the acquisition and installation of new plant and equipment; controlling the preparation of production records and reports; coordinating the implementation of health and safety requirements; planning and directing daily operations; and overseeing the selection, training and performance of staff.

**1321 MANUFACTURING MANAGERS**

Manufacturing managers plan, direct, and coordinate manufacturing production activities of large enterprises or as the manager of a small manufacturing company.

Their tasks include:

- a) determining, implementing and monitoring production strategies, policies and plans;
- b) planning details of production activities in terms of output quality and quantity, cost, time available and labor requirements;
- c) controlling the operation of production plant and quality procedures through planning of maintenance, designation of operating hours and supply of parts and tools;
- d) establishing and managing budgets, monitoring production output and costs, and adjusting processes and resources to minimize costs;
- e) consulting with and informing other managers about production matters;
- f) overseeing the acquisition and installation of new plant and equipment;
- g) controlling the preparation of production records and reports;
- h) coordinating the implementation of occupational health and safety requirements;
- i) identifying business opportunities and determining products to be manufactured;
- j) researching and implementing regulatory and statutory requirements affecting manufacturing operations and the environment;
- k) overseeing the provision of quotes for the manufacture of specialized goods and establishing contracts with customers and suppliers; and
- l) overseeing the selection, training and performance of staff.

**Examples:**

Food production coordinator	Manufacturing general manager/proprietor
Manufacturer	Production and operations/manufacturing
Manufacturing manager	manager
Steel fabrication manager	

**1322 MINING MANAGERS**

Mining managers plan, direct, and coordinate the production activities of mining, quarrying and oil and gas extraction operations.

Their tasks include:

- a) conferring with other managers to set production quotas, plan extraction sites and develop policies for the removal of raw materials;
- b) evaluating efficiency of production sites to determine adequacy of personnel, equipment and technologies used, and make changes to work schedule or equipment when necessary;
- c) planning details of production activities in terms of output quality and quantity, cost, time available and labor requirements;
- d) controlling the operation of plant and quality procedures through planning of maintenance, designation of operating hours and supply of equipment;
- e) establishing and managing budgets, monitoring production output and costs, and adjusting processes and resources to minimize costs;
- f) overseeing the acquisition and installation of new plant and equipment;
- g) controlling the preparation of production records and reports;
- h) coordinating the implementation of health and safety requirements;
- i) researching and implementing regulatory and statutory requirements affecting mineral extraction operations and the environment; and
- j) overseeing the selection, training and performance of staff.

**Examples:**

Equipment manager (mining)  
 Exploration manager  
 Mine manager  
 Production manager (mine)

Production manager (oil and gas extraction)  
 Production manager (quarry)  
 Quarry manager

**1323 CONSTRUCTION MANAGERS**

Construction managers plan, direct and coordinate the construction of civil engineering projects, buildings and dwellings.

Their tasks include:

- a) interpreting architectural drawings and specifications;
- b) coordinating labor resources, and procurement and delivery of materials, plant and equipment;
- c) negotiating with building owners, property developers and subcontractors involved in the construction process to ensure projects are completed on time and within budget;
- d) preparing tenders and contract bids;
- e) operating and implementing coordinated work programs for sites;
- f) ensuring adherence to building legislation and standards of performance, quality, cost and safety;
- g) arranging submission of plans to local authorities;
- h) building under contract, or subcontracting specialized building services;
- i) arranging building inspections by relevant authorities;
- j) establishing and managing budgets, controlling expenditure and ensuring the efficient use of resources; and
- k) overseeing the selection, training and performance of staff and subcontractors;

**Examples:**

Construction contractor  
 Construction managing proprietor  
 Construction project manager  
 Construction Sub-contractor  
 Civil engineering project manager

Production & operations/construction manager  
 Project builder  
 Site manager

**1324 SUPPLY, DISTRIBUTION AND RELATED MANAGERS**

Supply, distribution and related managers plan, direct and coordinate the supply, transportation, storage and distribution of goods.

Their tasks include:

- a) determining, implementing and monitoring purchasing, storage and distribution strategies, policies and plans;
- b) preparing and implementing plans to maintain required stock levels at minimum cost;
- c) negotiating contracts with suppliers to meet quality, cost and delivery requirements;
- d) monitoring and reviewing storage and inventory systems to meet supply requirements and control stock levels;
- e) operating recording systems to track all movements of goods, and ensuring re-ordering and re-stocking at optimal times;
- f) liaising with other departments and customers concerning requirements for outward goods and associated forwarding transportation;
- g) overseeing the recording of purchase, storage and distribution transactions;
- h) establishing and managing budgets, controlling expenditure and ensuring the efficient use of resources;



- i) establishing and directing operational and administrative procedures;
- j) planning and directing daily operations; and
- k) overseeing the selection, training and performance of staff.

**Examples:**

Assistant shipping manager	Port captain
Customs broker	Principal customs broker
Distribution manager	Railway station master
Freight forwarding manager	Shipping manager
Import/export manager	Supply chain manager
Logistics manager	Supply manager
Material resources manager	Transport general manager
Operations manager	Warehouse manager

**133 INFORMATION AND COMMUNICATIONS TECHNOLOGY SERVICE MANAGERS**

Information and communications technology service managers plan, direct, and coordinate the acquisition, development, maintenance and use of computer and telecommunication systems.

Tasks usually include: consulting with users, management, vendors, and technicians to assess computing needs and system requirements and specifying technology to meet those needs; formulating and directing information and communication technology (ICT) strategies, policies and plans; directing the selection and installation of ICT resources and the provision of user training; directing ICT operations, analyzing workflow, establishing priorities, developing standards and setting deadlines; overseeing the security of ICT systems; assigning, reviewing, managing and leading the work of systems analysts, programmers, and other computer related workers; evaluating the organization's technology use and needs and recommending improvements, such as hardware and software upgrades; establishing and managing budgets, controlling expenditure and ensuring the efficient use of resources; establishing and directing operational and administrative procedures; overseeing the selection, training and performance of staff; and representing the enterprise or organization at ICT related conventions, seminars and conferences.

**1330 INFORMATION AND COMMUNICATIONS TECHNOLOGY SERVICE MANAGERS**

Information and communications technology service managers plan, direct, and coordinate the acquisition, development, maintenance and use of computer and telecommunication systems.

Their tasks include:

- a) consulting with users, management, vendors, and technicians to assess computing needs and system requirements and specifying technology to meet those needs;
- b) formulating and directing information and communication technology (ICT) strategies, policies and plans;
- c) directing the selection and installation of ICT resources and the provision of user training;
- d) directing ICT operations, analyzing workflow, establishing priorities, developing standards and setting deadlines;
- e) overseeing the security of ICT systems;
- f) assigning, reviewing, managing and leading the work of systems analysts, programmers, and other computer-related workers;
- g) evaluating the organization's technology use and needs and recommending improvements, such as hardware and software upgrades;
- h) establishing and managing budgets, controlling expenditure and ensuring the efficient use of resources;

- i) establishing and directing operational and administrative procedures;
- j) overseeing the selection, training and performance of staff; and
- k) representing the enterprise or organization at ICT related conventions, seminars and conferences.

**Examples:**

Application development manager	Information systems director
Chief information officer	Information technology manager (IT Manager)
Computing services manager	Internet service provider
Data operations manager	Network manager
Data processing manager	Production & operations manager (communications)
EDP/MIS/IT managers	Telecommunications services manager
ICT development manager	
Information and communication technology manager	

**134 PROFESSIONAL SERVICES MANAGERS**

Professional services managers plan, direct and coordinate the provision of childcare, health, welfare, education and other professional services, and manage the branches of institutions providing financial and insurance services.

Tasks usually include: formulating policies and plans for the provision of services and operation of establishments; setting standards and objectives; developing and implementing programs and services to meet the needs of clients; directing and coordinating the allocation of resources; liaising with parents, boards, funding bodies, the community representatives and related agencies to discuss areas of cooperation and coordination; monitoring and controlling expenditure; overseeing the selection, development and performance of staff; preparing, or arranging for the preparation of, reports, budgets and forecasts; and representing the organization in negotiations with other agencies, and at conventions, seminars, public hearings and forums.

**1341 CHILD CARE SERVICE MANAGERS**

Child care service managers plan, direct, and coordinate and evaluate the provision of care for children in before-school, after-school, vacation and day care centers and services.

Their tasks include:

- a) developing and implementing programs to enhance the physical, social, emotional and intellectual development of young children;
- b) establishing and monitoring budgets and determining allocation of funds for staff, supplies, materials, equipment and maintenance;
- c) overseeing and coordinating the provision of care for children in before-school, after-school, day, and vacation care centers;
- d) directing and supervising child carers in providing care and supervision for young children;
- e) managing physical facilities and making sure all buildings and equipment are maintained to ensure the center is a safe area for children, staff and visitors;
- f) reviewing and interpreting government codes, and developing procedures to meet codes (e.g., concerning safety and security);
- g) monitoring children's progress and conferring with parents or guardians;
- h) preparing and maintaining records and accounts for a child care center; and
- i) recruiting and evaluating staff and coordinating their professional development.

**Example:**

Child care centre manager

**1342 HEALTH SERVICE MANAGERS**

Health service managers plan, direct, coordinate and evaluate the provision of clinical and community health care services in hospitals, clinics, public health agencies and similar organizations.

Their tasks include:

- a) providing overall direction and management for the service, facility, organization or center;
- b) directing, supervising and evaluating the work activities of medical, nursing, technical, clerical, service, maintenance, and other personnel;
- c) establishing objectives and evaluative or operational criteria for units they manage;
- d) directing or conducting recruitment, hiring and training of personnel;
- e) developing, implementing and monitoring procedures, policies and performance standards for medical, nursing, technical and administrative staff;
- f) monitoring the use of diagnostic services, inpatient beds, facilities, and staff to ensure effective use of resources and assess the need for additional staff, equipment, and services;
- g) controlling administrative operations such as budget planning, report preparation and expenditure on supplies, equipment and services;
- h) liaising with other health and welfare service providers, boards and funding bodies to coordinate the provision of services;
- i) advising government bodies about measures to improve health and welfare services and facilities; and
- j) representing the organization in negotiations, and at conventions, seminars, public hearings and forums.

**Examples:**

Clinical director  
Director of nursing

Hospital matron  
Medical administrator

**1343 AGED CARE SERVICE MANAGERS**

Aged care service managers plan, direct coordinate and evaluate the provision of residential and personal care services for individuals and families who are in need of such services due to the effects of ageing.

Their tasks include:

- a) providing overall direction and management for a service, facility, organization or center;
- b) directing, supervising and evaluating the work activities of medical, nursing, technical, clerical, service, maintenance, and other personnel;
- c) establishing objectives and evaluative or operational criteria for units they manage;
- d) directing or conducting recruitment, hiring and training of personnel;
- e) developing, implementing and monitoring procedures, policies and performance standards for nursing, personal care, technical, and administrative staff;
- f) coordinating and administering welfare programs and care services for the elderly;
- g) controlling administrative operations such as budget planning, report preparation, expenditure on supplies, equipment and services;
- h) liaising with other health and welfare providers, boards and funding bodies to coordinate the provision of services;
- i) advising government bodies about measures to improve health and welfare services and facilities; and

- j) representing the organization in negotiations, and at conventions, seminars, public hearings and forums.

**Examples:**

Aged care home director	Nursing home director
Community aged care coordinator	Retirement village coordinator

**1344 SOCIAL WELFARE MANAGERS**

Social welfare managers plan, direct, and coordinate the provision of social and community service programs such as income support, family assistance, children's services and other community programs and services.

Their tasks include:

- a) providing overall direction and management for a service, facility, organization or center;
- b) developing, implementing and monitoring procedures, policies and standards for staff;
- c) monitoring and evaluating resources devoted to the provision of welfare, housing, and other social services;
- d) controlling administrative operations such as budget planning, report preparation, expenditure on supplies, equipment and services;
- e) liaising with other welfare and health services providers, boards and funding bodies to discuss areas of health and welfare service cooperation and coordination;
- f) advising government bodies about measures to improve welfare services and facilities;
- g) representing the organization in negotiations, and at conventions, seminars, public hearings and forums;
- h) establishing and managing budgets, controlling expenditure and ensuring the efficient use of resources;
- i) establishing and directing operational and administrative procedures;
- j) overseeing the selection, training and performance of staff; and
- k) representing the organization at conventions, seminars and conferences.

**Examples:**

Community center manager	Housing services manager
Family services manager	Welfare Centre manager

**1345 EDUCATION MANAGERS**

Education managers plan, direct, coordinate and evaluate the educational and administrative aspects of education services, primary and secondary schools, colleges and faculties and departments in universities and other educational institutions.

Their tasks include:

- a) determining educational programs based on frameworks established by education authorities and governing bodies;
- b) implementing systems and procedures to monitor school performance and student enrolments;
- c) directing administrative and clerical activities concerning student admissions and educational services;
- d) controlling administrative operations such as budget planning, report preparation, expenditure on supplies, equipment and services;
- e) providing leadership and guidance to teaching, academic and administrative staff as well as to students;

- f) evaluating the work of teachers and lecturers by visiting classrooms, observing teaching methods, reviewing instructional objectives and examining learning materials;
- g) promoting the educational program, and representing the service or institution in the wider community;
- h) supervising the maintenance of educational facilities;
- i) developing and enforcing a disciplinary code to create a safe and conducive environment for students and teachers;
- j) organizing and implementing methods of raising additional funds in conjunction with parent and community groups and sponsors; and
- k) controlling selection, training and supervision of staff.

**Examples:**

Assistant Principal	Division School Superintendent
Chief Education Supervisor	School President
City School Superintendent	School Principal
College Administrator	School supervisor
College Dean	State University and Colleges President
District Supervisor	Vocational School Administrator

**1346 FINANCIAL AND INSURANCE SERVICES BRANCH MANAGERS**

Financial and insurance services branch managers plan, direct, and coordinate the branches of institutions that provide financial and insurance services, such as banks, building societies, credit unions and insurance companies. They provide advice and assistance to clients on financial and insurance matters.

Their tasks include:

- a) planning, directing and coordinating the activities of staff in the branch;
- b) establishing and maintaining relationships with individual and business customers;
- c) providing advice and assistance to customers on their financial and insurance needs and other related matters such as changes in law that may affect customers;
- d) examining, evaluating and processing loan and insurance applications;
- e) monitoring credit extension decisions;
- f) conducting financial investigations;
- g) overseeing the flow of cash and financial instruments, and the preparation of financial and regulatory reports;
- h) approving or rejecting, or coordinating the approval or rejection of, lines of credit commercial, real estate and personal loans;
- i) coordinating cooperation with other branches of the company;
- j) managing budgets, controlling expenditure and ensuring the efficient use of resources; and
- k) overseeing the selection, training and performance of staff.

**Examples:**

Area manager (Insurance)	Credit union manager
Bank manager	Insurance agency manager
Branch manager	Financial institution branch manager

**1349 PROFESSIONAL SERVICES MANAGERS NOT ELSEWHERE CLASSIFIED**

This unit group covers managers who plan, direct, coordinate and evaluate the provision of specialized professional and technical services and are not classified in sub-major group 12, Business services and administration managers, or elsewhere in sub-major group 13, Professional services managers. For instance, managers responsible for the provision of policing, corrective, library, legal and fire services are classified here.

In such cases tasks would include:

- a) providing overall direction and management for a service, facility, organization or center;
- b) developing, implementing and monitoring procedures, policies and standards for staff;
- c) directing, supervising and evaluating the work activities of professional technical, clerical, service, maintenance, and other personnel;
- d) monitoring and evaluating resources devoted to the provision of services;
- e) controlling administrative operations such as budget planning, report preparation, expenditure on supplies, equipment and services;
- f) planning, directing and coordinating the provision of services;
- g) coordinating cooperation with other service provision agencies in the same or related fields;
- h) managing budgets, controlling expenditure and ensuring the efficient use of resources; and
- i) overseeing the selection, training and performance of staff.

**Examples:**

Archives Manager	Library manager
Art gallery manager	Museum manager
Correctional services manager	Police superintendent
Legal service manager	Prison governor

**14 HOSPITALITY, RETAIL AND OTHER SERVICES MANAGERS**

Hospitality, shop and related services managers plan, organize and direct the operations of establishments which provide accommodation, hospitality, retail and other services.

Tasks performed by workers in this sub-major group usually include: planning and organizing special functions, sporting, gaming and entertainment activities and the range and mix of products, stock levels and service standards; promoting and selling goods and services; observing liquor, gaming, health and other laws and regulations; developing and reviewing policies, programs and procedures concerning customer relations and goods and services provided; promoting facilities, for conferences, conventions and trade shows, to potential customers; organizing the purchase and maintenance of transport vehicles, equipment and fuel, and transporting goods; controlling the selection, training and supervision of staff; ensuring compliance with occupational health and safety regulations.

**141 HOTEL AND RESTAURANT MANAGERS**

Hotel and restaurant managers plan, organize and direct the operations of establishments that provide accommodation, meals, beverages and other hospitality services.

Tasks performed usually include: planning and organizing special functions, sporting, gaming and entertainment activities; directing and overseeing reservation, reception, room service and housekeeping activities; observing liquor, gaming, health and other laws and regulations; monitoring quality at all stages of preparation and presentation of food and services; controlling the selection, training and supervision of staff; and ensuring compliance with occupational health and safety regulations.

**1411 HOTEL MANAGERS**

Hotel managers plan, organize and direct the operations of hotels, motels and similar establishments to provide guest accommodation and other services.

Their tasks include:

- a) directing and overseeing reservation, reception, room service and housekeeping activities;
- b) supervising security arrangements, and garden and property maintenance;
- c) planning and supervising bar, restaurant, function and conference activities;
- d) observing liquor, gaming, and other laws and regulations;
- e) assessing and reviewing customer satisfaction;
- f) overseeing accounting and purchasing activities;
- g) undertaking budgeting for the establishment;
- h) controlling selection, training and supervision of staff;
- i) ensuring compliance with occupational health and safety regulations; and
- j) providing guests with local tourism information, and arranging tours and transportation.

**Examples:**

Catering services general manager  
Hotel manager  
Motel manager

Nightclub manager  
Youth hostel manager

**1412 RESTAURANT MANAGERS**

Restaurant managers plan, organize and direct the operations of cafes, restaurants and related establishments to provide dining and catering services

Their tasks include:

- a) planning menus in consultation with chefs and cooks;
- b) planning and organizing special functions;
- c) arranging the purchasing and pricing of goods according to budget;
- d) maintaining records of stock levels and financial transactions;
- e) ensuring dining, kitchen and food storage facilities comply with health regulations and are clean, functional and of suitable appearance;
- f) conferring with customers to assess their satisfaction with meals and service;
- g) selecting, set staff work schedules, training and supervising waiting and kitchen staff;
- h) taking reservations, greeting guests and assisting in taking orders;
- i) negotiating arrangements with clients and suppliers; and
- j) ensuring compliance with occupational health and safety regulations.

**Examples:**

Cafe Manager  
Catering services manager/proprietor  
Production and operations/restaurant manager

Restaurant manager  
Restaurant proprietor

**142 RETAIL AND WHOLESALE TRADE MANAGERS**

Retail and wholesale trade managers plan, organize, coordinate and control the operations of establishments that sell goods on a retail or wholesale basis. They are responsible for the budgets, staffing and strategic and operational direction of shops, or of organizational units within shops that sell particular types of product.

Tasks usually include: determining product mix, stock levels and service standards; formulating and implementing purchasing and marketing policies, and setting prices; promoting and advertising the establishment's goods and services; maintaining records of stock levels and financial transactions; undertaking budgeting for the establishment; controlling selection, training and supervision of staff; and ensuring compliance with occupational health and safety regulations.

#### **1420 RETAIL AND WHOLESALE TRADE MANAGERS**

Retail and wholesale trade managers plan, organize, co-ordinate and control the operations of establishments that sell goods on a retail or wholesale basis. They are responsible for the budgets, staffing and strategic and operational direction of shops, or of organizational units within shops that sell particular types of product

Their tasks include:

- a) determining product mix, stock levels and service standards;
- b) formulating and implementing purchasing and marketing policies, and setting prices;
- c) promoting and advertising the establishment's goods and services;
- d) maintaining records of stock levels and financial transactions;
- e) undertaking budgeting for the establishment;
- f) controlling selection, training and supervision of staff; and
- g) ensuring compliance with occupational health and safety regulations.

##### **Examples:**

Commissary manager	Grocery manager
Production and operations/retail trade manager	Retail manager/ proprietor
Production and operations/wholesale trade manager	Shop manager
	Supermarket manager
	Wholesale trade manager/proprietor

#### **143 OTHER SERVICES MANAGERS**

Other services managers plan, organize, and control the operations of establishments that provide sporting, cultural, recreational, travel, customer contact and other amenity services.

Tasks usually include: planning and organizing the range and mix of services or activities provided; ensuring that facilities are kept clean and in good condition; keeping abreast of new trends and developments relevant to the service provided; advising on the facilities available and promoting publicity; checking and keeping custody of all cash receipts and making regular stock checks; establishing and managing budgets; controlling expenditure and ensuring the efficient use of resources; planning and directing daily operations; controlling the selection, supervision and performance of staff; and ensuring compliance with health and safety requirements.

#### **1431 SPORTS, RECREATION AND CULTURAL CENTRE MANAGERS**

Sports, recreation and cultural center managers plan, organize, and control the operations of establishments that provide sporting, artistic, theatrical and other recreational and amenity services.

Their tasks include:

- a) planning and organizing the range and mix of entertainment, attractions, cultural activities, and sports and fitness programmes to be offered by the center;
- b) ensuring that facilities are kept clean and in good condition;



- c) keeping abreast of new trends and developments in the creative arts and arranging theatrical productions and performances by bands and orchestras;
- d) advising on the facilities available and promoting publicity in relation to events, shows and activities;
- e) checking and keeping custody of all cash receipts and making regular stock checks;
- f) establishing and managing budgets, controlling expenditure and ensuring the efficient use of resources;
- g) planning and directing daily operations;
- h) controlling the selection, supervision and performance of staff; and
- i) ensuring compliance with health and safety regulations.

**Examples:**

Amusement/ theme park manager	Leisure center manager
Band manager	Riding school manager
Billiards or pool hall manager	Song group manager
Casino manager	Sports and entertainment manager
Cinema manager	Sports center manager
Dance studio manager	Theatre manager

**1439 SERVICES MANAGERS NOT ELSEWHERE CLASSIFIED**

This unit group covers managers that plan, direct and coordinate the provision of services and are not classified in sub-major group 13, Production and specialized services managers or elsewhere in sub-major group 14, Hospitality, retail and other services managers. For instance, managers of travel agencies, conference centers, contact centers and shopping centers are classified here.

**Examples:**

Camp site manager	Contact center manager
Caravan park manager	Shopping center manager
Conference center manager	Travel agency manager

## **MAJOR GROUP 2**

### **PROFESSIONALS**

Professionals increase the existing stock of knowledge, apply scientific or artistic concepts and theories, teach about the foregoing in a systematic manner, or engage in any combination of these activities. Competent performance in most occupations in this major group requires skills at the fourth ISCO skill level.

Tasks performed by professionals usually include: conducting analysis and research, and developing concepts, theories and operational methods, and advising on or applying existing knowledge related to physical sciences including mathematics, engineering and technology, and to life sciences including the medical and health services, as well as to social sciences and humanities; teaching the theory and practice of one or more disciplines at different educational levels; teaching and educating handicapped persons; providing various business, legal and social services; creating and performing works of art; providing spiritual guidance; preparing scientific papers and reports. Supervision of other workers may be included.

Occupations in this major group are classified into the following sub-major groups, minor groups and unit groups:

#### **21 SCIENCE AND ENGINEERING PROFESSIONALS**

Physical, mathematical and engineering science professionals conduct research, improve or develop concepts, theories and operational methods, or apply scientific knowledge relating to fields such as physics, astronomy, meteorology, chemistry, geophysics, geology, mathematics, statistics, computing, architecture, engineering, and technology.

Tasks performed by workers in this sub-major group usually include: conducting research, enlarging, advising on or applying scientific knowledge obtained through the study of structures and properties of physical matter and phenomena, chemical characteristics and processes of various substances, materials and products, and of mathematical, statistical and computing concepts and methods; advising on, designing and directing construction of buildings, towns and traffic systems, or civil engineering and industrial structures, as well as machines and other equipment, and advising on and applying mining methods, and ensuring their optimum use; surveying land and sea and making maps; studying and advising on technological aspects of particular materials, products and processes, and on efficiency of production and work organization; preparing scientific papers and reports. Supervision of other workers may be included.

##### **211 PHYSICAL AND EARTH SCIENCE PROFESSIONALS**

Physical and earth science professionals conduct research, improve or develop concepts, theories and operational methods, or apply scientific knowledge relating to physics, astronomy, meteorology, chemistry, geology and geophysics.

Tasks performed usually include: enlarging scientific knowledge through research and experiments related to mechanics, thermodynamics, optics, sonics, electricity, magnetism, electronics, nuclear physics, astronomy, various branches of chemistry, atmospheric conditions and the physical nature of the Earth; and advising on or applying this knowledge in such fields as manufacturing, agriculture, medicine, navigation, space exploration, oil, gas, water and mineral exploitation, telecommunications and other services, or civil engineering; preparing scientific papers and reports.

**2111 PHYSICISTS AND ASTRONOMERS**

Physicists and astronomers conduct research and improve or develop concepts, theories and operational methods concerning matter, space, time, energy, forces and fields and the interrelationship between these physical phenomena. They apply scientific knowledge relating to physics and astronomy in industrial, medical, military or other fields.

Their tasks include:

- a) conducting research and improving or developing concepts, theories, instrumentation, software and operational methods related to physics and astronomy;
- b) conducting experiments, tests and analyses on the structure and properties of matter in fields such as mechanics, thermodynamics, electronics, communications, power generation and distribution, aerodynamics, optics and lasers, remote sensing, medicine, sonics, magnetism, and nuclear physics;
- c) evaluating results of investigations and experiments and expressing conclusions, mainly using mathematical techniques and models;
- d) applying principles, techniques and processes to develop or improve industrial, medical, military and other practical applications of the principles and techniques of physics or astronomy;
- e) ensuring the safe and effective delivery of radiation (ionizing and non-ionizing) to patients to achieve a diagnostic or therapeutic result as prescribed by a medical practitioner;
- f) ensuring the accurate measurement and characterization of physical quantities used in medical applications;
- g) testing, commissioning and evaluating equipment used in applications such as imaging, medical treatment and dosimetry;
- h) advising and consulting with medical practitioners and other health care professionals in optimizing the balance between the beneficial and deleterious effects of radiation;
- i) observing, analyzing and interpreting celestial phenomena and developing methods, numerical models and techniques to extend knowledge of fields such as navigation, satellite communication, space exploration, celestial bodies and cosmic radiation;
- j) developing, implementing and maintaining standards and protocols for the measurement of physical phenomena and for the use of nuclear technology in industrial and medical applications; and
- k) preparing scientific papers and reports.

**Examples:**

Astronomer	Mechanic physicist
Astronomical scientist	Nuclear physicist
Electronic physicist	Physicist (general)
Light and optics physicist	Medical physicist

**2112 METEOROLOGISTS**

Meteorologists prepare short-term or long-term weather forecasts used in aviation, shipping, agriculture and other areas and for the information of the general public. They conduct research related to the composition, structure and dynamics of the atmosphere.

Their tasks include:

- a) investigating direction and speed of air movements, pressures, temperatures, humidity, physical and chemical transformation of pollutants and other phenomena such as cloud formation and precipitation, electrical disturbances or solar radiation;

- b) studying data collected from meteorological stations, radar and satellite imagery and computer model output to plot and forecast weather conditions;
- c) preparing and reporting short-term or long-term weather maps, forecasts and warnings relating to atmospheric phenomena such as cyclones, storms and other hazards to life and property and disseminating information about atmospheric conditions through a variety of media including radio, television, print and the Internet;
- d) conducting experiments in fog dispersal, cloud seeding, rain enhancement and other types of weather modification programs;
- e) developing and testing mathematical computer models of weather and climate for experimental or operational use;
- f) participating in studies of the effect of weather on the environment;
- g) analyzing the impact of industrial projects and human activity on the climate and quality of the air and work with the social science, engineering and economic communities to develop appropriate mitigation strategies;
- h) engaging in the design and development of new equipment and procedures for meteorological data collection, remote sensing, or for related applications;
- i) conducting research on and improving or developing concepts, theories and operational methods related to the composition, structure and dynamics of the atmosphere and preparing scientific papers and reports on the outcome of this research; and
- j) preparing scientific papers and reports.

**Examples:**

Climatologist

Hydrometeorologist

Meteorological scientist

Meteorologist

Weather forecaster

Weather observer

**2113 CHEMISTS**

Chemists conduct research, improve or develop concepts, theories and operational methods, or apply scientific knowledge relating to chemistry, to develop new knowledge or products and for quality and process control.

Their tasks include:

- a) conducting research and improving or developing concepts, instruments, theories and operational methods related to chemistry;
- b) conducting experiments, tests and analyses to investigate chemical composition and energy and chemical changes in various natural or synthetic substances, materials and products;
- c) developing procedures for environmental control, quality control and various other procedures for manufacturers or users;
- d) conducting programs of sample and data collection and analysis to identify and quantify environmental toxicants;
- e) participating in interdisciplinary research and development projects working with chemical engineers, biologists, microbiologists, agronomists, geologists or other professionals;
- f) using micro-organisms to convert substances into new compounds;
- g) determining ways to strengthen or combine materials or develop new materials;
- h) reproducing and synthesizing naturally occurring substances and creating new artificial substances; and
- i) preparing scientific papers and reports.

**Examples:**

Analytical chemist	Physical chemist
Chemist (general)	Quality control chemist
Food chemist	Toxicologist
Forensic chemist	Ceramics and glass technologist
Organic/Inorganic chemist	Wood technologist
Pharmaceutical chemist	

**2114 GEOLOGISTS AND GEOPHYSICISTS**

Geologists and geophysicists conduct research; improve or develop concepts, theories and operational methods, or apply scientific knowledge relating to geology and geophysics in such fields as oil, gas and mineral exploration and extraction, water conservation, civil engineering, telecommunications and navigation, and assessment and mitigation of the effects of development and waste disposal projects on the environment.

Their tasks include:

- a) conducting research and improving or developing concepts, theories and operational methods related to geology and geophysics;
- b) studying composition and structure of the Earth's crust, examining rocks, minerals, fossils and other materials, to determine processes affecting the development of the Earth, trace evolution of past life, establish nature and chronology of geological formations and assess their commercial applications;
- c) interpreting research data and preparing geological reports, maps, charts and diagrams, reports and papers;
- d) applying geological knowledge to problems encountered in civil engineering projects such as the construction of dams, bridges, tunnels, and large buildings; and land reclamation projects;
- e) using various remote sensing programs to investigate and measure seismic, gravitational, electrical, thermal, and magnetic forces affecting the Earth;
- f) estimating weight, size and mass of the Earth and composition and structure of its interior, and studying the nature, activity and predictability of volcanoes, glaciers and earthquakes;
- g) charting the Earth's magnetic field and applying this and other collected data for broadcasting, navigation and other purposes;
- h) studying and measuring physical properties of seas and the atmosphere and their inter-relationship, such as the exchange of thermal energy;
- i) locating and determining the nature and extent of oil, gas and mineral deposits using seismological, gravimetric, magnetic, electrical or radiometric methods; identifying deposits of construction materials and determining their characteristics and suitability for use as concrete aggregates, road fill or for other applications;
- j) researching the movement, distribution and physical properties of ground and surface waters; and
- k) advising in areas such as waste management, route and site selection and the restoration of contaminated sites.

**Examples:**

Geological oceanographer	Hydrologist
Geologist	Mineral analyst
Geologist engineer	Mineralogist
Geophysical scientist	Geophysical Oceanographer
Geothermal engineer	Petrologist
Geophysicist	Seismologist
Hydro-geologist	Volcanologist
Hydrographer	

**2119 OTHER PHYSICAL AND EARTH SCIENCE PROFESSIONALS**

Workers in this unit group collect, identify, classify, and analyze physical evidence related to criminal investigations, perform tests on weapons or substances, such as fiber, hair, and tissue to determine significance to investigation, testify as expert witnesses on evidence or crime laboratory techniques and serve as specialists in area of expertise, such as ballistics, fingerprinting, handwriting, or biochemistry.

**Example:**

Ballistician

**212 MATHEMATICIANS, ACTUARIES AND STATISTICIANS**

Mathematicians, actuaries and statisticians conduct research, improve or develop mathematical, actuarial and statistical concepts, theories and operational models and techniques and apply this knowledge to a wide range of tasks in such fields as engineering, business and social and other sciences.

Tasks performed usually include: studying, improving and developing mathematical, actuarial and statistical theories and techniques; advising on or applying mathematical principles, models and techniques to a wide range of tasks in the fields of engineering, natural, social or life sciences; conducting logical analyzes of management problems, especially in terms of input-output effectiveness, and formulating mathematical models of each problem usually for programming and solution by computer; designing and putting into operation pension schemes and life, health, social and other types of insurance systems; applying mathematics, statistics, probability and risk theory to assess potential financial impacts of future events.

Planning and organizing surveys and other statistical collections, and designing questionnaires; evaluating, processing, analyzing, and interpreting statistical data and preparing them for publication; advising on or applying various data collection methods and statistical methods and techniques, and determining reliability of findings, especially in such fields as business or medicine as well as in other areas of natural, social or life sciences; preparing scientific papers and reports; supervising the work of mathematical, actuarial and statistical assistants and statistical clerks.

**2121 MATHEMATICIANS AND ACTUARIES**

Mathematicians and actuaries conduct research and improve or develop mathematical and actuarial concepts, theories and operational methods and techniques and advise on or engage in their practical application in such fields as engineering, business and social and other sciences.

Their tasks include:

- a) studying, improving and developing mathematical, actuarial and statistical theories and techniques;
- b) advising on or applying mathematical principles, models and techniques to a wide range of tasks in the fields of engineering, natural, social or life sciences;
- c) conducting logical analyzes of management problems, especially in terms of input-output effectiveness, and formulating mathematical models of each problem usually for programming and solution by computer;
- d) designing and putting into operation pension schemes and life, health, social and other types of insurance systems;
- e) applying mathematics, statistics, probability and risk theory to assess potential financial impacts of future events;
- f) planning and organizing surveys and other statistical collections, and designing questionnaires;

- g) evaluating, processing, analyzing, and interpreting statistical data and preparing them for publication;
- h) advising on or applying various data collection methods and statistical methods and techniques, and determining reliability of findings, especially in such fields as business or medicine as well as in other areas of natural, social or life sciences;
- i) preparing scientific papers and reports; and
- j) supervising the work of mathematical, actuarial and statistical assistants and statistical clerks.

**Examples:**

Actuarial analyst	Mathematician (applied mathematics)
Actuary	Mathematician (pure mathematics)
Actuarial researcher	Operations research analyst
Assistant actuary	

**2122 STATISTICIANS**

Workers in this unit group conduct research, improve or develop mathematical and other aspects of statistical concepts, theories and operational methods and techniques, and advise on or engage in their practical application, in such fields as business or medicine, as well as in other areas of natural, social or life sciences.

Their tasks include:

- a) studying, improving and developing statistical theories and methodologies;
- b) planning and organizing surveys and other statistical collections, and designing questionnaires;
- c) evaluating, processing, analyzing, and interpreting statistical data and preparing them for publication;
- d) advising on or applying various data collection methods and statistical methods and techniques, and determining reliability of findings, especially in such fields as business or medicine as well as in other areas of natural, social or life sciences; and
- e) preparing scientific papers and reports.

**Examples:**

Biometrician	Statistician (applied statistics)
Demographer	Statistician (general)
Mathematical statistician	Survey statistician

**213 LIFE SCIENCE PROFESSIONALS**

Life science professionals apply knowledge gained from research into human, animal and plant life and their interactions with each other and the environment to develop new knowledge, improve agricultural and forestry production, and solve human health and environmental problems.

Tasks performed usually include: collecting, analyzing and evaluating experimental and field data to identify and develop new processes and techniques; providing advice and support to governments, organizations and businesses about ecological sustainable development of natural resources.

**2131 BIOLOGISTS, BOTANISTS, ZOOLOGISTS AND RELATED SCIENTISTS**

Biologists, botanists, zoologists and related professionals study living organisms and their interactions with each other and with the environment, and apply this knowledge to solve human health and environmental problems. They work in diverse fields such as botany, zoology, ecology, marine biology, genetics, immunology, pharmacology, toxicology, physiology, bacteriology and virology.

Their tasks include:

- a) undertaking research in laboratories and in the field to increase scientific knowledge of living organisms; to discover new information; to test hypotheses; to solve problems in areas such as the environment, agriculture and health; and to develop new products, processes and techniques for pharmaceutical, agricultural and environmental use;
- b) designing and conducting experiments and tests;
- c) gathering human, animal, insect and plant specimens and data, and studying their origin, development, chemical and physical form, structure, composition, and life and reproductive processes;
- d) examining living organisms using a variety of specialized equipment, instruments, technologies and techniques such as electron microscopes, telemetry, global positioning systems, biotechnology, satellite imaging, genetic engineering, digital imaging analysis, polymerase chain reaction and computer modeling;
- e) identifying, classifying, recording and monitoring living organisms and maintaining databases;
- f) to the scientific community in scientific journals or at conferences for scrutiny and further debate;
- g) designing and carrying out environmental impact assessments to identify changes caused by natural or human factors; and
- h) providing advice to governments, organizations and businesses in areas such as conservation, management of natural resources, the effects of climate change and pollution.

**Examples:**

Aquatic biologist	Molecular geneticist
Bacteriologist	Mycologist
Biochemist	Pharmacologist
Biologist	Parasitologist
Biophysicist	Physiologist
Biotechnologist	Plant entomologist
Botanist	Plant geneticist
Cell geneticist	Plants and animals taxonomist
Entomologist	Virologist
Marine biologist	Zoologist
Microbiologist	Biomedical researcher
Molecular biologist	

**2132 FARMING, FORESTRY AND FISHERIES ADVISERS**

Farming, forestry and fisheries advisers study and provide assistance and advice on farm, forestry and fisheries management, including cultivation, fertilization, harvesting, soil erosion and composition, disease prevention, nutrition, crop rotation and marketing. They develop techniques for increasing productivity, and study and develop plans and policies for land and fisheries management.



Their tasks include:

- a) collecting and analyzing data and samples related to produce, feed, soil, water quality and other factors affecting farm, forest or fishery production;
- b) advising on techniques for improving the production of crops, livestock and fish, and alternative production options;
- c) advising on livestock and crop disease, control of pests and weeds, soil improvement, animal husbandry and feeding programs;
- d) studying the environmental factors affecting commercial crop production, pasture growth, animal breeding, fish stocks and the growth and health of forest trees;
- e) studying the effects of cultivation techniques, soils, insects, diseases and fisheries practices on animal, crop, forestry and fisheries yield;
- f) studying fish migration, growth, feeding and spawning and devising methods of collecting, fertilizing, incubating and hatching fish eggs;
- g) researching into characteristics, use capability and productivity of soils and applying findings to development of improved agricultural, horticultural and forestry practices;
- h) developing procedures and techniques for solving agricultural problems and improving the efficiency of production;
- i) managing forest and fisheries resources to maximize their long-term commercial, recreational and environmental benefits;
- j) studying the propagation and culture of forest trees, methods for improving the growth of stock, and the effects of thinning on forest yields;
- k) investigating, planning and implementing management procedures to cope with the effects of fires, floods, droughts, soil erosion, pests and diseases; and
- l) preparing scientific reports and conducting advisory information sessions and lectures for farming, forestry and fishing communities and other groups.

**Examples:**

Agriculturist	Forester
Agronomist	Forestry adviser
Animal scientist	Forestry scientist
Aquaculturist	Silviculturist
Farming adviser	Soil scientist
Fisheries adviser	Horticultural scientist

### 2133 ENVIRONMENTAL PROTECTION PROFESSIONALS

Environmental protection professionals study and assess the effects on the environment of human activity such as air, water and noise pollution, soil contamination, climate change, toxic waste and depletion and degradation of natural resources. They develop plans and solutions to protect, conserve, restore, minimize and prevent further damage to the environment.

Their tasks include:

- a) Environmental protection professionals study and assess the effects on the environment of human activity such as air, water and noise pollution, soil contamination, climate change, toxic waste and depletion and degradation of natural resources. They develop plans and solutions to protect, conserve, restore, minimize and prevent further damage to the environment;
- b) conducting research, performing tests, collecting samples, performing field and laboratory analysis to identify sources of environmental problems and recommending ways to prevent, control and remediate the impact of environmental problems;
- c) assessing the likely impact that potential or proposed activities, projects and developments may have on the environment, and recommending whether such developments should proceed;

- d) developing and coordinating the implementation of environmental management systems to enable organizations to identify, monitor and control the impact of their activities, products and services on the environment;
- e) conducting audits to evaluate environmental impact of existing activities, processes, wastes, noises and substances;
- f) assessing an organization's compliance with government and internal environmental regulations and guidelines, identifying violations and determining appropriate remedial action;
- g) providing technical advice and support services to organizations on how best to deal with environmental problems in order to reduce environmental damage and minimize financial loss; and
- h) developing conservation plans.

**Examples:**

Air pollution analyst	Environmental auditor
Conservation officer	Environmental consultant
Conservation scientist	Environmental research scientist
Ecologist	Environmental scientist
Environmental adviser	Water quality analyst

## **214 ENGINEERING PROFESSIONALS (Excluding electrotechnology)**

Engineering professionals (excluding electrotechnology) design, plan and organize the testing, construction, installation and maintenance of structures, machines and their components, and production systems and plants, and plan production schedules and work procedures to ensure engineering projects are undertaken safely, efficiently and in a cost effective manner.

Tasks performed usually include: planning and designing chemical process systems, civil engineering projects, mechanical equipment and systems, mining and drilling operations, and other engineering projects; specifying and interpreting drawings and plans, and determining construction methods; supervising the construction of structures, water and gas supply and transportation systems, and the manufacture, installation, operation and maintenance of equipment, machines and plant; organizing and managing project labor and the delivery of materials, plant and equipment; estimating total costs and preparing detailed cost plans and estimates as tools for budgetary control; resolving design and operational problems in the various fields of engineering through the application of engineering technology.

### **2141 INDUSTRIAL AND PRODUCTION ENGINEERS**

Industrial and production engineers conduct research and design, organize and oversee the construction, operation and maintenance of process plant and installations. They establish programs for the coordination of manufacturing activities; and assess cost effectiveness and safety.

Their tasks include:

- a) studying functional statements, organizational charts and project information to determine functions and responsibilities of workers and work units and to identify areas of duplication;
- b) establishing work measurement programs and analyzing work samples to develop standards for labor utilization;
- c) analyzing workforce utilization, facility layout, operational data and production schedules and costs to determine optimum worker and equipment efficiencies;
- d) developing specifications for manufacture, and determining materials, equipment, piping, material flows, capacities and layout of plant and systems;
- e) organizing and managing project labor and the delivery of materials, plant and equipment;

- f) establishing standards and policies for installation, modification, quality control, testing, inspection and maintenance according to engineering principles and safety regulations;
- g) inspecting plant to improve and maintain performance;
- h) directing the maintenance of plant buildings and equipment, and coordinating the requirements for new designs, surveys and maintenance schedules;
- i) advising management on new production methods, techniques and equipment; and
- j) liaising with materials buying, storing and controlling departments to ensure a steady flow of supplies.

**Examples:**

Industrial design engineer	Product planner
Industrial efficiency engineer	Production engineer
Industrial engineer	Production planner
Methods engineer	Quality control engineer
Plant engineer	Time and motion engineer

**2142 CIVIL ENGINEERS**

Civil engineers conduct research, advise on, design, and direct construction; manage the operation and maintenance of civil engineering structures; or study and advise on technological aspects of particular materials.

Their tasks include:

- a) conducting research and developing new or improved theories and methods related to civil engineering;
- b) advising on and designing structures such as bridges, dams, docks, roads, airports, railways, canals, pipelines, waste-disposal and flood-control systems, and industrial and other large buildings;
- c) determining and specifying construction methods, materials and quality standards, and directing construction work;
- d) establishing control systems to ensure efficient functioning of structures as well as safety and environmental protection;
- e) organizing and directing maintenance and repair of existing civil engineering structures;
- f) analyzing the behavior of soil and rock when placed under pressure by proposed structures and designing structural foundations; and
- g) analyzing the stability of structures and testing the behavior and durability of materials used in their construction.

**Examples:**

Aerodrome construction engineer	Geodetic engineer
Airport engineer	Highway and street construction engineer
Bridge/drainage engineer	Hydraulic engineer
Building construction engineer	Railway construction engineer
Civil engineer	Site engineer
Cost engineer	Soil mechanics engineer
Geotechnical engineer	Structural engineer

**2143 ENVIRONMENTAL ENGINEERS**

Environmental engineers conduct research, advise on, design and direct implementation of solutions to prevent, control or remedy negative impacts of human activity on the environment utilizing a variety of engineering disciplines. They conduct environmental assessments of construction and civil engineering projects and apply engineering principles to pollution control, recycling and waste disposal.

Their tasks include:

- a) conducting research, assessing and reporting on the environmental impact of existing and proposed construction, civil engineering and other activities;
- b) inspecting industrial and municipal facilities and programs to evaluate operational effectiveness and ensure compliance with environmental regulations;
- c) designing and overseeing the development of systems, processes and equipment for control, management, or remediation of water, air, or soil quality;
- d) providing environmental engineering assistance in network analysis, regulatory analysis, and planning or reviewing database development;
- e) obtaining, updating, and maintaining plans, permits, and standard operating procedures;
- f) providing engineering and technical support for environmental remediation and litigation projects, including remediation system design and determination of regulatory applicability;
- g) monitoring progress of environmental improvement programs;
- h) advising corporations and government agencies of procedures to follow in cleaning up contaminated sites to protect people and the environment; and
- i) collaborating with environmental scientists, planners, hazardous waste technicians, engineers from other disciplines, and specialists in law and business to address environmental problems.

**Examples:**

Air pollution control engineer

Environmental analyst

Environmental engineer

Environmental remediation specialist

Public health engineer

## 2144 MECHANICAL ENGINEERS

Mechanical engineers conduct research; advise on, design, and direct production of machines, aircraft, ships, machinery and industrial plant, equipment and systems; advise on and direct their functioning, maintenance and repair; or study and advise on mechanical aspects of particular materials, products or processes.

Their tasks include:

- a) advising on and designing machinery and tools for manufacturing, mining, construction, agricultural, and other industrial purposes;
- b) advising on and designing steam, internal combustion and other non-electric motors and engines used for propulsion of railway locomotives, road vehicles or aircraft, or for driving industrial or other machinery;
- c) advising on and designing: hulls, superstructures and propulsion systems of ships; mechanical plant and equipment for the release, control and utilization of energy; heating, ventilation and refrigeration systems, steering gear, pumps, and other mechanical equipment;
- d) advising on and designing airframes, undercarriages and other equipment for aircraft as well as suspension systems, brakes, vehicle bodies and other components of road vehicles;
- e) advising on and designing non-electrical parts of apparatus or products such as word processors, computers, precision instruments, cameras and projectors;
- f) establishing control standards and procedures to ensure efficient functioning and safety of machines, machinery, tools, motors, engines, industrial plant, equipment, or systems; and
- g) ensuring that equipment, operation and maintenance comply with design specifications and safety standards.

**Examples:**

Aeronautical engineer	Marine engineer
Agricultural engineer	Mechanical engineer
Automotive engineer	Naval architect
Heating, ventilation and air condition engineer	Nuclear power engineer
Industrial machinery and tools engineer	Power plant engineer
Maintenance engineer	Reefer engineer
Marine architect	Engine designer

**2145 CHEMICAL ENGINEERS**

Chemical engineers conduct research and develop, advise on and direct commercial-scale chemical processes and production of various substances and items such as crude oil, petroleum derivatives, food and drink products, medicines, or synthetic materials. They direct maintenance and repair of chemical plant and equipment and study and advise on chemical aspects of particular materials, products or processes.

Their tasks include:

- a) conducting research and advising on, and developing commercial-scale chemical processes to refine crude oil and other liquids or gases, and to produce substances and items such as petroleum derivatives, explosives, food and drink products, medicines, or synthetic materials;
- b) specifying chemical production methods, materials and quality standards and ensuring that they conform to specifications;
- c) establishing control standards and procedures to ensure safety and efficiency of chemical production operations and safety of workers operating equipment or working in close proximity to on-going chemical reactions;
- d) designing chemical plant equipment and devising processes for manufacturing chemicals and products;
- e) performing tests throughout stages of production to determine degree of control over variables, including temperature, density, specific gravity, and pressure;
- f) developing safety procedures to be employed;
- g) preparing estimates of production costs and production progress reports for management; and
- h) performing laboratory studies of steps in manufacture of new products and testing proposed process in small scale operation such as a pilot plant.

**Examples:**

Chemical engineer	Plastic molding engineer
Ceramic engineer	Plastic technologist
Chemical process engineer	Refinery process engineer
Fuel technologist	

**2146 MINING ENGINEERS, METALLURGISTS AND RELATED PROFESSIONALS**

Mining engineers, metallurgists and related professionals conduct research on and design and develop and maintain commercial-scale methods of extracting metals from their ores, or minerals, water, oil or gas from the earth and of developing new alloys, ceramic and other materials, or study and advise on mining or metallurgical aspects of particular materials, products or processes.

Their tasks include:

- a) determining the location and planning the extraction of coal, metallic ores, non-metallic minerals, and building materials, such as stone and gravel;

- b) determining most suitable methods of efficient mining and extraction, types of machinery to be used, planning layout and directing construction of shafts and tunnels;
- c) determining drilling site and devising methods of controlling the flow of water, oil or gas from wells;
- d) planning and directing storage, initial treatment and transportation of water, oil or gas;
- e) establishing safety standards and procedures and first-aid facilities, especially underground;
- f) conducting research, developing methods of extracting metals from their ores and advising on their application;
- g) investigating properties of metals and alloys, developing new alloys and advising on and supervising technical aspects of metal and alloy manufacture and processing;
- h) maintaining technical liaison and consultancy with other relevant specialists such as geologists and geophysicists; and
- i) examining deposits or mines to evaluate profitability.

**Examples:**

Coal mining engineer	Metallurgist
Extractive metallurgist	Mining engineer
Metal mining engineer	Physical metallurgist
Metallurgical engineer	Petroleum and natural gas engineer

**2149 ENGINEERING PROFESSIONALS NOT ELSEWHERE CLASSIFIED**

This unit group covers engineering professionals not classified elsewhere in minor group 214, Engineering professionals (excluding electrotechnology) or in minor group 215, Electrotechnology engineers. For instance, the group includes those who conduct research, advise on or develop engineering procedures and solutions concerning workplace safety, biomedical engineering, optics, materials, nuclear power generation and explosives.

Their tasks include:

- a) applying knowledge of engineering to the design, development, and evaluation of biological and health systems and products, such as artificial organs, prostheses, and instrumentation;
- b) designing devices used in various medical procedures, imaging systems such as magnetic resonance imaging, and devices for automating insulin injections or controlling body functions;
- c) designing components of optical instruments such as lenses, microscopes, telescopes, lasers, optical disc systems and other equipment that utilize the properties of light;
- d) designing, testing, and coordinating the development of explosive ordnance material to meet military procurement specifications;
- e) designing and overseeing construction and operation of nuclear reactors and power plants and nuclear fuels reprocessing and reclamation systems;
- f) designing and developing nuclear equipment such as reactor cores, radiation shielding, and associated instrumentation and control mechanisms;
- g) assessing damage and providing calculations for marine salvage operations;
- h) studying and advising on engineering aspects of particular manufacturing processes, such as those related to glass, ceramics, textiles, leather products, wood, and printing; and
- i) identifying potential hazards and introducing safety procedures and devices.

**Examples:**

Biomedical engineer	Safety engineer
Instrument control engineer	Sanitary engineer
Explosive ordinance engineer	Satellite engineer
Health and safety engineer	Test engineer
Marine salvage engineer	Reservoir and drilling engineer
Material engineer	Nuclear power generation engineer
Optical engineer	Production engineer
Quantity surveyor	Time and motion study engineer

**215 ELECTROTECHNOLOGY ENGINEERS**

Electrotechnology engineers conduct research on and design, advise, plan and direct the construction and operation of electronic, electrical and telecommunications systems, components, motors, and equipment. They organize and establish control systems to monitor the performance and safety of electrical and electronic assemblies and systems.

Tasks performed usually include: conducting research, advising on and directing the maintenance and repair of electrical, electronic and telecommunications products and systems; advising on and designing power stations and systems that generate, transmit and distribute electrical power; establishing control standards to monitor performance and safety of electrical, electronic and telecommunication systems and equipment.

**2151 ELECTRICAL ENGINEERS**

Electrical engineers conduct research and advise on, design, and direct the construction and operation of electrical systems, components, motors and equipment, and advise on and direct their functioning, maintenance and repair, or study and advise on technological aspects of electrical engineering materials, products and processes.

Their tasks include:

- a) advising on and designing power stations and systems which generate, transmit and distribute electrical power;
- b) supervising, controlling and monitoring the operation of electrical generation, transmission and distribution systems;
- c) advising on and designing systems for electrical motors, electrical traction and other equipment, or electrical domestic appliances;
- d) specifying electrical installation and application in industrial and other buildings and objects;
- e) establishing control standards and procedures to monitor performance and safety of electrical generating and distribution systems, motors and equipment; and
- f) determining manufacturing methods for electrical systems, as well as maintenance and repair of existing electrical systems, motors and equipment.

**Examples:**

Electric power generation engineer	Power distribution and transmission engineer
Electrical engineer	
Electromechanical engineer	Outside plant engineer
Failure analysis engineer	

**2152 ELECTRONICS ENGINEERS**

Electronics engineers conduct research on, design, and direct the construction functioning, maintenance and repair of electronic systems and study and advise on technological aspects of electronic engineering materials, products or processes.

Their tasks include:

- a) advising on and designing electronic devices or components, circuits, semi-conductors, and systems;
- b) specifying production or installation methods, materials and quality standards and directing production or installation work of electronic products and systems;
- c) establishing control standards and procedures to ensure efficient functioning and safety of electronic systems, motors and equipment;
- d) organizing and directing maintenance and repair of existing electronic systems and equipment;
- e) designing electronic circuits and components for use in fields such as aerospace guidance and propulsion control, acoustics, or instruments and controls;
- f) researching and advising on radar, telemetry and remote control systems, microwaves and other electronic equipment;
- g) designing and developing signal processing algorithms and implementing these through appropriate choice of hardware and software; and
- h) developing apparatus and procedures to test electronic components, circuits and systems.

**Examples:**

Computer hardware engineer	Electronics engineering technologist
CAD/CAM engineer	Electronic product test engineer
Communication development engineer	Instrumentation engineer
Electronics engineer	Transmission engineer

**2153 TELECOMMUNICATIONS ENGINEERS**

Telecommunications engineers conduct research and advise on, design, and direct the construction functioning, maintenance and repair of telecommunication systems and equipment. They study and advise on technological aspects of telecommunication engineering materials, products or processes.

Their tasks include:

- a) advising on and designing telecommunications devices or components, systems, equipment and distribution centers;
- b) specifying production or installation methods, materials, quality and safety standards and directing production or installation work of telecommunications products and systems;
- c) organizing and directing maintenance and repair of existing telecommunication systems, motors and equipment;
- d) researching and advising on telecommunications equipment;
- e) planning and designing communications networks based on wired, fibre optical and wireless communication media;
- f) designing and developing signal processing algorithms and implementing these through appropriate choice of hardware and software; and
- g) designing telecommunications networks and radio and television distribution systems, including both cable and over the air.



**Examples:**

Broadcast engineer

Telecommunications engineer

Telecommunications engineering  
technologist

Telecommunications specialist

Radio frequency engineer

**216 ARCHITECTS, PLANNERS, SURVEYORS AND DESIGNERS**

Architects, planners, surveyors and designers plan and design landscapes, building exteriors and interiors; products for manufacture; and information for visual communication, publication and display. They conduct survey work to precisely position geographical features, design, prepare and revise maps, and develop and implement plans and policies for controlling the use of land.

Tasks performed usually include: determining the objectives and constraints of the design brief by consulting with clients and stakeholders; formulating design concepts and plans that harmonize aesthetic considerations with technical, functional, ecological and production requirements; preparing sketches, diagrams, illustrations, animations; plans, maps, charts, samples and models to communicate design concepts and other information; analyzing photographs, satellite imagery, survey documents and data, maps, records, reports and statistics; undertaking research and analyzing functional, spatial, commercial, cultural, safety, environmental and aesthetic requirements.

**2161 BUILDING ARCHITECTS**

Building architects design commercial, industrial, institutional, residential and recreational buildings and plan and monitor their construction, maintenance and rehabilitation.

Their tasks include:

- a) developing new or improved architectural theories and methods;
- b) inspecting sites and consulting clients, management and other stakeholders to determine type, style and size of proposed buildings and alterations to existing buildings;
- c) providing information regarding designs, materials and estimated building times;
- d) preparing project documentation, including sketches and scale drawings, and integrating structural, mechanical and aesthetic elements in final designs;
- e) writing specifications and contract documents for use by builders and calling tenders on behalf of clients;
- f) making necessary contacts to ensure feasibility of projects regarding style, cost, timing, and compliance with regulations;
- g) identifying and finding best solutions for problems regarding function and quality of interior environments of buildings and making necessary designs, drawings and plans;
- h) monitoring construction or rehabilitation work to ensure compliance with specifications and quality standards; and
- i) maintaining technical liaison and consultancy with other relevant specialists.

**Examples:**

Architectural engineer

Building architect

Interior architect

**2162 LANDSCAPE ARCHITECTS**

Landscape architects plan and design landscapes and open spaces for projects such as, parks, schools, institutions, roads, external areas for commercial, industrial and residential sites, and plan and monitor their construction, maintenance and rehabilitation.

Their tasks include:

- a) developing new or improved theories and methods in landscape architecture;
- b) inspecting sites and consulting clients, management and other stakeholders to determine type, style and size of proposed buildings, parks, roads and other open spaces;
- c) compiling and analyzing site and community data about geographical and ecological features, landforms, soils, vegetation, site hydrology, visual characteristics and human-made structures, to formulate land use and development recommendations, and for preparing environmental impact statements;
- d) preparing reports, site plans, working drawings, specifications and cost estimates for land development, showing location and details of proposals, including ground modeling, structures, vegetation and access;
- e) writing specifications and contract documents for use by builders and civil engineering contractors and calling tenders on behalf of clients;
- f) making necessary contacts to ensure feasibility of projects regarding style, cost, timing, and compliance with regulations;
- g) identifying and finding best solutions for problems regarding function and quality of exterior environments and making necessary designs, drawings and plans;
- h) monitoring construction or rehabilitation work to ensure compliance with specifications and quality standards; and
- i) maintaining technical liaison and consultancy with other relevant specialists.

**Example:**

Landscape architect

**2163 PRODUCT AND GARMENT DESIGNERS**

Product and garment designers design and develop products for manufacture and prepare designs and specifications of products for mass, batch and one-off production.

Their tasks include:

- a) determining the objectives and constraints of the design brief by consulting with clients and stakeholders;
- b) formulating design concepts for clothing, textiles, industrial, commercial and consumer products, and jewellery;
- c) harmonizing aesthetic considerations with technical, functional, ecological and production requirements;
- d) preparing sketches, diagrams, illustrations, plans, samples and models to communicate design concepts;
- e) negotiating design solutions with clients, management, and sales and manufacturing staff;
- f) selecting, specifying and recommending functional and aesthetic materials, production methods and finishes for manufacture;
- g) detailing and documenting the selected design for production;
- h) preparing and commissioning prototypes and samples; and
- i) supervising the preparation of patterns, programs and tooling, and the manufacturing process.

**Examples:**

Costume designer  
Fashion consultant  
Fashion designer

Industrial designer  
Jewellery designer

**2164 TOWN AND TRAFFIC PLANNERS**

Town and traffic planners develop and implement plans and policies for the controlled use of urban and rural land and for traffic systems. They conduct research and provide advice on economic, environmental and social factors affecting land use and traffic flows.

Their tasks include:

- a) planning layout and coordinating development of urban areas;
- b) compiling and analyzing data on economic, legal, political, cultural, demographic, sociological, physical and environmental factors affecting land use;
- c) conferring with government authorities, communities and specialists in fields such as architecture, planning, social science the environment and the law;
- d) devising and recommending use and development of land, and presenting narrative and graphic plans, programs and designs to groups and individuals;
- e) advising governments, companies and communities on urban and regional planning issues and proposals;
- f) reviewing and evaluating environmental impact reports;
- g) planning layout and coordinating development of urban areas;
- h) planning and the development of land areas for parks, schools, institutions, airports, roadways and related projects, and for commercial, industrial and residential sites; and
- i) planning and advising on routing and control of road traffic and public transportation systems for efficiency and safety.

**Examples:**

City planner  
Land Planner  
Town planner

Traffic planner  
Urban planner  
Zoning officer

**2165 CARTOGRAPHERS AND SURVEYORS**

Cartographers and surveyors determine the exact position of, or prepare and revise digital, graphic and pictorial maps, charts or other visual representation of, natural and constructed features and boundaries of land, seas, underground areas and celestial bodies, applying scientific and mathematical principles.

Their tasks include:

- a) surveying, measuring and describing land surfaces, mines, underground surfaces, sea, river and lake beds;
- b) noting exact position of various features and recording survey data in digital form;
- c) making charts and maps to be used in determining navigable waters and channels and in planning construction of marine structures;
- d) planning and conducting aerial photographic surveys;
- e) designing, compiling and revising maps and charts using aerial and other photographs, satellite imagery, survey documents and data, existing maps and records, reports and statistics;
- f) undertaking research and development of surveying and photogrammetric measurement systems, cadastral systems and land information systems;
- g) studying and advising on technical, aesthetic and economic aspects of map production; and
- h) maintaining technical liaison and consultancy with other relevant specialists.

**Examples:**

Aerial surveyor	Land surveyor
Cadastral surveyor	Mine surveyor
Cartographer	Photogrammetrist
Geodetic surveyor	Remote sensing technologist
Hydrographic surveyor	

**2166 GRAPHIC AND MULTIMEDIA DESIGNERS**

Graphic and multimedia designers design information content for visual and audio communication, publication and display using print, film, electronic, digital and other forms of visual and audio media. They create special effects, animation, or other visual images for use in computer games, movies, music videos, print media and advertisements.

Their tasks include:

- a) determining the objectives and constraints of the design brief by consulting with clients and stakeholders;
- b) undertaking research and analyzing functional communication requirements;
- c) formulating design concepts for the subject to be communicated;
- d) preparing sketches, diagrams, illustrations and layouts to communicate design concepts;
- e) designing complex graphics and animation to satisfy functional, aesthetic and creative requirements of the design brief;
- f) creating two-dimensional and three-dimensional images depicting objects in motion or illustrating a process, using computer animation or modeling programs;
- g) negotiating design solutions with clients, management, sales and production staff;
- h) selecting, specifying or recommending functional and aesthetic materials and media for publication, delivery or display;
- i) detailing and documenting the selected design for production; and
- j) supervising or carrying out production in the chosen media.

**Examples:**

Animator	Illustrator
Computer games designer	Multimedia designer
Digital artist	Publication designer
Graphic designer/artist	Web designer

**22 HEALTH PROFESSIONALS**

Health professionals conduct research, improve or develop concepts, theories and operational methods, and apply scientific knowledge relating to medicine, nursing, dentistry, veterinary medicine, pharmacy, and promotion of health.

Tasks performed by workers in this sub-major group usually include: conducting research and obtaining scientific knowledge through the study of human and animal disorders and illnesses and ways of treating them; advising on or applying preventive and curative measures, or promoting health; preparing scientific papers and reports. Supervision of other workers may be included.

**221 MEDICAL DOCTORS**

Medical doctors study, diagnose, treat and prevent illness, disease, injury, and other physical and mental impairments in humans through the application of the principles and procedures of modern medicine. They plan, supervise and evaluate the implementation of care and treatment plans by other health care providers, and conduct medical education and research activities.

Tasks performed usually include: conducting physical examinations of patients and interviewing them and their families to determine their health status ; ordering diagnostic tests and analyzing findings; prescribing and administering curative treatments and preventive measures; performing surgery and other clinical procedures; monitoring patients' progress and response to treatment; advising on health, nutrition and lifestyle behaviors which aid prevention or treatment of disease and disorders; identifying and managing complications before, during and after childbirth; planning, managing and implementing referral plans for patients in need of specialized, long-term or other types of health care services; exchanging medical information with other health professionals to ensure continuing and comprehensive care; reporting births, deaths and notifiable diseases to government authorities; conducting research into human disorders and illnesses and preventive or curative methods.

**2211 GENERALIST MEDICAL PRACTITIONERS**

Generalist medical practitioners diagnose, treat and prevent illness, disease, injury, and other physical and mental impairments and maintain general health in humans through application of the principles and procedures of modern medicine. They do not limit their practice to certain disease categories or methods of treatment, and may assume responsibility for the provision of continuing and comprehensive medical care to individuals, families and communities.

Their tasks include:

- a) conducting physical examinations of patients and interviewing them and their families to determine their health status;
- b) ordering laboratory tests, X-rays and other diagnostic procedures and analyzing findings to determine the nature of disorders or illnesses;
- c) providing continuing medical care for patients including prescribing, administering, counselling on and monitoring curative treatments and preventive measures;
- d) performing surgery and other clinical procedures;
- e) advising individuals, families and communities on health, nutrition and lifestyle which aid prevention or treatment of disease and disorders;
- f) providing referrals to patients and families for specialized care in hospitals, rehabilitation centers or other types of health care centers;
- g) identifying, managing and providing referrals for complications before, during and after childbirth;
- h) recording patients' medical information and history and exchanging information with specialist practitioners and other health workers as required for continuing medical care;
- i) reporting births, deaths and notifiable diseases to government authorities to meet legal and professional requirements;
- j) conducting research in human health and medical services and disseminating the findings such as through scientific reports; and
- k) planning and participating in programs designed to prevent the occurrence and spread of common diseases.

**Examples:**

Family medical practitioner  
District medical doctor - therapist

Physician (general)  
Primary health care physician

General practitioner  
Medical doctor (general)  
Medical officer (general)

Resident medical officer specializing in  
general practice

## 2212 SPECIALIST MEDICAL PRACTITIONERS

Specialist medical practitioners diagnose, treat and prevent illness, disease, injury, and other physical and mental impairments in humans, using specialized testing, diagnostic, medical, surgical, physical and psychiatric techniques, through application of the principles and procedures of modern medicine. They specialize in certain disease categories, types of patient or methods of treatment and may conduct medical education and research in their chosen areas of specialization.

Their tasks include:

- a) conducting physical examinations of patients and interviewing them and their families to determine their health status;
- b) considering medical information provided by a referring doctor or other health care provider;
- c) ordering specialized diagnostic tests to determine the nature of disorders or illnesses;
- d) prescribing, administering and monitoring patients' responses to treatments, medications, anaesthetics, psychotherapies, physical rehabilitation programmes and other preventive and curative measures;
- e) performing surgery of a general or specialized nature;
- f) managing complications before, during and after childbirth;
- g) recording patients' medical information and exchanging information with other health professionals to ensure the provision of comprehensive care;
- h) reporting births, deaths and notifiable diseases to government authorities to meet legal and professional requirements;
- i) providing information to patients and families and communities about preventive measures, treatment and care for specific ailments;
- j) performing autopsies to determine cause of death;
- k) conducting research into specific human disorders and illnesses and preventive or curative methods and disseminating the findings such as through scientific reports; and
- l) planning and participating in programs designed to prevent the occurrence and spread of specific diseases.

### Examples:

Anaesthesiologist  
Anaesthetist  
Bacteriological scientist  
Cardiologist  
Dermatologist  
Emergency medicine specialist  
Forensic pathologist  
Gynecologist  
Neurologist  
Neurosurgeon

Obstetrician  
Ophthalmologist  
Medical pathologist  
Pediatrician  
Preventive medicine specialist  
Psychiatrist  
Radiologist  
Resident medical officer in specialist training  
Specialist physician (internal medicine)  
Surgeon

## 222 NURSING AND MIDWIFERY PROFESSIONALS

Nursing and midwifery professionals provide treatment and care services for people who are physically or mentally ill, disabled or infirm, and others in need of care due to potential risks to health including before, during and after childbirth. They assume responsibility for the planning, management and evaluation of the care of patients, including the supervision of other health care

workers, working autonomously or in teams with medical doctors and others in the practical application of preventive and curative measures.

Tasks performed usually include: assessing, planning, providing and evaluating nursing and midwifery care for patients according to the practice and standards of modern nursing and midwifery; coordinating the care of patients in consultation with other health professionals and members of health teams; developing and implementing care plans, treatments and therapies, including administering medications; monitoring and alleviating pain and discomfort experienced by patients using a variety of therapies, including the use of pain-killing drugs; monitoring patients' health condition, including progress of pregnancy and responses to curative treatment; providing information to patients, families and communities about a range of health issues, including prevention of illness, treatment and care, pregnancy and childbirth, and other topics; supervising and coordinating the work of other health care workers; conducting research on nursing and midwifery practice and preparing scientific papers and reports.

## 2221 NURSING PROFESSIONALS

Nursing professionals provide treatment, support and care services for people who are in need of nursing care due to the effects of ageing, injury, illness or other physical or mental impairment, or potential risks to health. They assume responsibility for the planning and management of the care of patients, including the supervision of other health care workers, working autonomously or in teams with medical doctors and others in the practical application of preventive and curative measures.

Their tasks include:

- a) planning, providing and evaluating nursing care for patients according to the practice and standards of modern nursing;
- b) coordinating the care of patients in consultation with other health professionals and members of health teams;
- c) developing and implementing care plans for the biological, social, and psychological treatment of patients in collaboration with other health professionals;
- d) planning and providing personal care, treatments and therapies including administering medications, and monitoring responses to treatment or care plan;
- e) cleaning wounds and applying surgical dressings and bandages;
- f) monitoring pain and discomfort experienced by patients and alleviating pain using a variety of therapies, including the use of pain-killing drugs;
- g) planning and participating in health education programmes, health promotion and nurse education activities in clinical and community settings;
- h) answering questions from patients and families and providing information about prevention of ill-health, treatment and care;
- i) supervising and coordinating the work of other nursing, health and personal care workers; and
- j) conducting research on nursing practices and procedures and disseminating findings such as through scientific papers and reports.

### Examples:

Anaesthetic nurse	Neonatal nurse
Audiometry nurse	Neurology/neurosurgeon nurse
Cardiac holding unit nurse	Nurse educator
Cardiac surgical nurse	OB-Gyne nurse
Cardiovascular telemetry nurse	Occupational health nurse
Chemotherapy nurse	Oncology nurse
Clinical nurse	Operating and delivery nurse
Company nurse	Ophthalmology nurse
Consultant nurse	Orthopedic nurse

Coronary nurse	Out-patient department nurse
Delivery room nurse	Pain clinic & oncology nurse
Dental nurse	Paramedic nurse
Dermatological ward nurse	Pediatric ward nurse
Diabetic ward nurse	Psychiatric ward nurse
Dialysis nurse	Plastic surgery nurse
District nurse	Practitioner nurse
Emergency nurse	Private nurse
ENT nurse	Professional nurse
Geriatric nurse	Public health nurse
Hematology nurse	Pulmonary/respiratory nurse
Hemodialysis nurse	Radiation therapy nurse
Home health care nurse	Radiotherapeutic nurse
In vitro fertilization nurse	Recovery room nurse
Independent nurse practitioner	Renal transplant nurse
Industrial nurse	School nurse
Intensive care unit nurse	Specialized nurse
Luxury ship nurse	Surgical nurse
Medical ward nurse	Urology nurse
Medico-legal nurse	Clinical nurse consultant

## 2222 MIDWIFERY PROFESSIONALS

Midwifery professionals plan, manage, provide and evaluate midwifery care services before, during and after pregnancy and childbirth. They provide delivery care for reducing health risks to women and newborn children, working autonomously or in teams with other health care providers.

Their tasks include:

- a) planning, providing and evaluating care and support services for women and babies before, during and after pregnancy and childbirth according to the practice and standards of modern midwifery care;
- b) providing advice to women and families and conducting community education on health, nutrition, hygiene, exercise, birth and emergency plans, breastfeeding, infant care, family planning and contraception, lifestyle and other topics related to pregnancy and childbirth;
- c) assessing progress during pregnancy and childbirth, managing complications and recognizing warning signs requiring referral to a medical doctor with specialized skills in obstetrics;
- d) monitoring the health status of newborns, managing complications and recognizing warning signs requiring referral to a medical doctor with specialized skills in neonatology;
- e) monitoring pain and discomfort experienced by women during labor and delivery and alleviating pain using a variety of therapies, including the use of pain-killing drugs;
- f) reporting births to government authorities to meet legal and professional requirements;
- g) conducting research on midwifery practices and procedures and disseminating findings such as through scientific papers and reports; and
- h) planning and conducting midwifery education activities in clinical and community settings.

### Examples:

Professional midwife

Supervisory midwife



**223 2330 TRADITIONAL AND COMPLEMENTARY MEDICINE PROFESSIONALS**

Traditional and complementary medicine professionals prevent, diagnose and treat illness, disease, injury, and other physical and mental impairments and maintain general health in humans by applying knowledge, skills and practices acquired through extensive study of the theories, beliefs and experiences, originating in specific cultures.

Their tasks include:

- a) conducting physical examinations of patients and interviewing them and their families to determine their health status;
- b) developing and implementing treatment plans for physical, mental and psychosocial ailments using applications such as acupuncture, ayurvedic, homoeopathic and herbal medicine;
- c) evaluating and documenting patients' progress through treatment plans;
- d) providing health, nutrition and lifestyle advice to individuals, families and communities;
- e) prescribing and preparing traditional medicines, such as herbal, plant, mineral and animal extracts, to stimulate the body's capacity for self-healing;
- f) exchanging information about patients with other health care workers as needed to ensure continuing and comprehensive health care; and
- g) conducting research into traditional and complementary medicines and treatments and disseminating findings such as through scientific papers and reports.

**Examples:**

Acupuncturist	Homeopath
Ayurvedic practitioner	Naturopath
Chinese herbal medicine practitioner	Unani practitioner

**224 2240 PARAMEDICAL PRACTITIONERS**

Paramedical practitioners provide advisory, diagnostic, curative and preventive medical services for humans more limited in scope and complexity than those carried out by medical doctors. They work autonomously or with limited supervision of medical doctors, and apply advanced clinical procedures for treating and preventing diseases, injuries and other physical or mental impairments common to specific communities.

Their tasks include:

- a) conducting physical examinations of patients and interviewing them and their families to determine their health status, and recording patients' medical information;
- b) performing basic or more routine medical and surgical procedures, including prescribing and administering treatments, medications and other preventive or curative measures, especially for common diseases and disorders;
- c) administering or ordering diagnostic tests, such as x-ray, electrocardiogram, and laboratory tests;
- d) performing therapeutic procedures, such as injections, immunizations, suturing and wound care, and infection management;
- e) assisting medical doctors with complex surgical procedures;
- f) monitoring patients' progress and response to treatment, and identifying signs and symptoms requiring referral to medical doctors;
- g) advising patients and families on diet, exercise and other habits which aid prevention or treatment of disease and disorders;
- h) identifying and referring complex or unusual cases to medical doctors, hospitals or other places for specialized care; and

- i) reporting births, deaths and notifiable diseases to government authorities to meet legal and professional reporting requirements.

**Examples:**

Advanced care paramedic  
Clinical officer (paramedical)  
Feldscher

Primary care paramedic  
Surgical technician

**225 2250 VETERINARIANS**

Veterinarians diagnose, prevent and treat diseases, injuries and dysfunctions of animals. They may provide care to a wide range of animals or specialize in the treatment of a particular animal group or in a particular specialty area, or provide professional services to commercial firms producing biological and pharmaceutical products.

Their tasks include:

- a) determining the presence and nature of abnormal conditions by physical examination, laboratory testing and through diagnostic imaging techniques including radiography and ultrasound;
- b) treating animals medically and surgically, and administering and prescribing drugs, analgesics, and general and local anaesthetics;
- c) performing surgery, dressing wounds and setting broken bones;
- d) rendering obstetric and dental services to animals;
- e) participating in programs designed to prevent the occurrence and spread of animal diseases;
- f) inoculating animals against, and testing for, infectious diseases and notifying authorities of outbreaks of infectious animal diseases;
- g) performing autopsies to determine cause of death;
- h) advising clients on health, nutrition and feeding, hygiene, breeding and care of animals; and
- i) providing euthanasia services for animals.

**Examples:**

Animal nutritionist  
Animal pathologist  
Public health veterinarian  
Veterinarian

Veterinary epidemiologist  
Veterinary intern  
Veterinary surgeon

**226 OTHER HEALTH PROFESSIONALS**

Other health professionals provide health services related to dentistry, pharmacy, environmental health and hygiene, occupational health and safety, physiotherapy, nutrition, hearing, speech, vision and rehabilitation therapies. This minor group includes all human health professionals, except doctors, traditional and complementary medicine practitioners, veterinarians, nurses, midwives and paramedical professionals.

**2261 DENTISTS**

Dentists diagnose, treat and prevent diseases, injuries and abnormalities of the teeth, mouth, jaws and associated tissues by applying the principles and procedures of modern dentistry. They use a broad range of specialized diagnostic, surgical and other techniques to promote and restore oral health.

Their tasks include:

- a) diagnosing diseases, injuries, irregularities and malformations of teeth and associated structures in the mouth and jaw using a range of methods such as radiographs, salivary tests and medical histories;

- b) providing preventative oral health care such as periodontal treatments, fluoride applications and oral health promotion;
- c) administering anesthetics to limit the amount of pain experienced by patients during procedures;
- d) prescribing medication for relief of ongoing pain after procedures;
- e) providing restorative oral care such as implants, complex crown and bridge restorations, and orthodontics, and repairing damaged and decayed teeth;
- f) providing surgical treatments such as extraction of teeth, biopsy of tissue, and performing orthodontic treatment;
- g) measuring and taking impressions of patients' jaws and teeth in order to determine the shape and size of dental prostheses;
- h) designing, making, and fitting prosthodontic appliances such as space maintainers, bridges, and dentures, or writing fabrication instructions or prescriptions for dental prosthetic technicians;
- i) restoring oral function with removable and fixed oral prostheses;
- j) educating patients and families on dental hygiene, nutrition and other measures to take care of oral health; and
- k) supervising dental hygienists, dental assistants and other staff.

**Examples:**

Dental hygienist	Oral pathologist
Dental practitioner	Orthodontist
Dental surgeon	Paedodontist
Dentist	Periodontist
Endodontist	Prosthodontist
Oral and maxillofacial surgeon	

**2262 PHARMACISTS**

Pharmacists store, preserve, compound, and dispense medicinal products and counsel on the proper use and adverse effects of drugs and medicines following prescriptions issued by medical doctors and other health professionals. They contribute to researching, testing preparing, prescribing and monitoring medicinal therapies for optimizing human health.

Their tasks include:

- a) receiving prescriptions for medicinal products from medical doctors and other health professionals, checking patients' medicine histories, and ensuring proper dosage and methods of administration and drug compatibility before dispensing;
- b) preparing or supervising the preparation and labelling of liquid medicines, ointments, powders, tablets and other medications to fill prescriptions;
- c) providing information and advice to prescribers and clients regarding drug interactions, incompatibility and contra-indications, side effects, dosage and proper medication storage;
- d) collaborating with other health care professionals to plan, monitor, review, and evaluate the quality and effectiveness of the medicine therapy of individual patients, and the effectiveness of particular drugs or therapies;
- e) maintaining prescription files and recording issue of narcotics, poisons and habit-forming drugs in accordance with legal and professional requirements;
- f) storing and preserving vaccines, serums and other drugs subject to deterioration;
- g) advising clients on and supplying non-prescription medicines and diagnostic and therapeutic aids for common conditions;
- h) supervising and coordinating the work of pharmacy technicians, pharmacy interns and pharmacy sales assistants;

- i) conducting research to develop and improve pharmaceuticals, cosmetics and related chemical products;
- j) conferring with chemists, engineering professionals and other professionals about manufacturing techniques and ingredients;
- k) testing and analyzing drugs to determine their identity, purity and strength in relation to specified standards;
- l) evaluating labels, packaging and advertising of drug products; and
- m) developing information and risks of particular drugs.

**Examples:**

Dispensing chemist	Pharmacist
Hospital pharmacist	Pharmacy adviser
Industrial pharmacist	Retail pharmacist

**2263 ENVIRONMENTAL AND OCCUPATIONAL HEALTH AND HYGIENE PROFESSIONALS**

Environmental and occupational health and hygiene professionals assess, plan and implement programs to recognize, monitor and control environmental factors that can potentially affect human health, to ensure safe and healthy working conditions, and to prevent disease or injury caused by chemical, physical, radiological and biological agents or ergonomic factors.

Their tasks include:

- a) developing, implementing and reviewing programs and policies to minimize potential environmental and occupational risks to health and safety;
- b) preparing and implementing plans and strategies for the safe, economic and suitable disposal of commercial, industrial, medical and household wastes;
- c) implementing prevention programs and strategies for communicable diseases, food safety, waste water treatment and disposal systems, recreation and domestic water quality, contaminated and hazardous substances;
- d) identifying, reporting and documenting hazards, and assessing and controlling risks in the environment and workplace and advising on compliance with relevant law and regulations;
- e) developing, implementing and monitoring programs to minimize workplace and environmental pollution involving chemical, physical and biological hazards;
- f) advising methods to prevent, eliminate, control, or reduce the exposure of workers, students, the public and the environment to radiological and other hazards;
- g) promoting ergonomic principles within the workplace such as matching furniture, equipment and work activities to the needs of employees;
- h) providing education, information, training, and advice to persons at all levels on aspects of occupational hygiene and environmental health;
- i) recording and investigating injuries and equipment damage, and reporting safety performance; and
- j) coordinating arrangements for the compensation, rehabilitation and return to work of injured workers.

**Examples:**

Environmental health officer	Occupational hygienist
Occupational health and safety adviser	Radiation protection expert
Occupational hygienist	

**2264 PHYSIOTHERAPISTS**

Physiotherapists assess, plan and implement rehabilitative programs that improve or restore human motor functions, maximize movement ability, relieve pain syndromes, and treat or prevent physical challenges associated with injuries, diseases and other impairments. They apply a broad range of physical therapies and techniques such as movement, ultrasound, heating, laser and other techniques.

Their tasks include:

- a) administering muscle, nerve, joint and functional ability tests to identify and assess physical problems of patients;
- b) establishing treatment goals with patients and designing treatment programs to reduce physical pain, strengthen muscles, improve cardiothoracic, cardiovascular and respiratory functions, restore joint mobility, and improve balance and coordination;
- c) developing, implementing and monitoring programs and treatments using the therapeutic properties of exercise, heat, cold, massage, manipulation, hydrotherapy, electrotherapy, ultraviolet and infra-red light and ultrasound in the treatment of patients;
- d) instructing patients and their families in procedures to be continued outside clinical settings;
- e) recording information on patients' health status and responses to treatment in medical records-keeping systems, and sharing information with other health professionals as required to ensure continuing and comprehensive care;
- f) developing and implementing programmes for screening and prevention of common physical ailments and disorders; and
- g) supervising the work of physiotherapy assistants and others.

**Examples:**

Physical therapist

Physiotherapist

Geriatric physical therapist

Orthopedic physical therapist

Pediatric physical therapist

**2265 DIETICIANS AND NUTRITIONIST**

Dieticians and nutritionists assess, plan and implement programs to enhance the impact of food and nutrition on human health.

Their tasks include:

- a) instructing individuals, families and communities on nutrition, the planning of diets and preparation of food to maximize health benefits and reduce potential risks to health;
- b) planning diets and menus, supervising the preparation and serving of meals, and monitoring food intake and quality to provide nutritional care in settings offering food services;
- c) compiling and assessing data relating to health and nutritional status of individuals, groups and communities based on nutritional values of food served or consumed;
- d) planning and conducting nutrition assessments, intervention programmes, and education and training to improve nutritional levels among individuals and communities;
- e) consulting with other health professionals and care providers to manage the dietary and nutritional needs of patients;
- f) developing and evaluating food and nutrition products to meet nutritional requirements; and
- g) conducting research on nutrition and disseminating the findings at scientific conferences and in other settings.

**Examples:**

Administrative dietitian	Food and nutrition specialist
Clinical dietitian	Nutrition program coordinator
Community/public health nutritionist	Nutritionist
Dietary nutritionist	Nutritionist research dietitian
Dietetic management supervisor/adviser	Public health nutritionist
Dietetic/food processing consultant	Sports nutritionist
Dietician	Teaching dietitian
Food service dietician	Therapeutic/clinic dietician

**2266 AUDIOLOGISTS AND SPEECH THERAPISTS**

Audiologists and speech therapists evaluate, manage and treat physical disorders affecting human hearing, speech, communication and swallowing. They prescribe corrective devices or rehabilitative therapies for hearing loss, speech disorders, and related sensory and neural problems and provide counselling on hearing safety and communication performance.

Their tasks include:

- a) evaluating hearing, speech and language performance in patients to determine the nature of hearing and communication disorders;
- b) administering hearing or speech/language tests or other examinations using specialized diagnostic instruments and equipment, and interpreting test results alongside other medical, social and behavioral diagnostic data to determine appropriate courses of treatment ;
- c) planning, directing and participating in counselling, screening, speech rehabilitation and other programs related to hearing and communication;
- d) prescribing hearing aids and other assistive devices according to patients' needs and instructing them in their use;
- e) planning and conducting treatment programs to manage physical disorders affecting speech and swallowing in patients such as stuttering and feeding disorders ;
- f) counselling and guiding hearing and/or language-impaired individuals, their families, teachers and employers; and
- g) referring patients and families to additional medical or educational services if needed.

**Examples:**

Audiologist	Speech pathologist
Language therapist	Speech therapist

**2267 OPTOMETRISTS AND OPHTHALMIC OPTICIANS**

Optometrists and ophthalmic opticians provide diagnosis, management and treatment services for disorders of the eyes and visual system. They counsel on eye care and prescribe optical aids or other therapies for visual disturbance.

Their tasks include:

- a) examining patients' eyes and conducting diagnostic tests to assess ocular health and determine the nature and extent of vision problems and abnormalities;
- b) testing visual function using specialized instruments and equipment for measuring visual acuity and refractive error, function of visual pathways, visual fields, eye movements, freedom of vision and intraocular pressure;
- c) detecting, diagnosing and managing eye disease, including prescribing medications for the treatment of eye disease;
- d) consulting with and referring patients to ophthalmologists or other health professionals if additional medical treatment is necessary;

- e) detecting and diagnosing eye movement disorders and defects of binocular function, and planning and managing treatment programs, including counselling patients in eye exercises to coordinate movement and focusing of eyes;
- f) prescribing corrective eyeglasses, contact lenses and other vision aids, and checking optical devices for performance, safety, comfort and lifestyle; and
- g) advising on visual health matters such as contact lens care, vision care for the elderly, optics, visual ergonomics, and occupational and industrial eye safety.

**Examples:**

Ophthalmic optician

Optometrist

Orthoptist

**2269 HEALTH PROFESSIONALS NOT ELSEWHERE CLASSIFIED**

This unit group covers health professionals not classified elsewhere in sub-major group 22, Health professionals. For instance, the group includes occupations such as podiatrist, occupational therapist and other health professionals.

Their tasks include:

- a) interviewing patients and conducting diagnostic tests to determine their health status and the nature of physical or mental disorders, illnesses or other health problems;
- b) developing and implementing treatment plans for injuries, illnesses and other physical and mental impairments;
- c) evaluating and documenting patients' progress through treatment plans, and referring patients and families to medical doctors or other health care providers for specialized, rehabilitative or other care services as needed;
- d) assessing functional limitations of clients resulting from illness, disability or other impairment, and providing therapy;
- e) recommending environmental adaptations in the home, leisure, work and school environments on an individual or group basis to enable them to perform their daily activities and occupations;
- f) planning and implementing therapeutic programs on an individual and group basis for improving and maintaining physical, cognitive, emotional and social functioning, including through the use of arts and crafts, dance and movement, music and other recreational activities;
- g) identifying and prescribing treatments for conditions affecting the foot, ankle and related structures of the leg due to illness, disease or other physical impairment, and prescribing corrective footwear and advising on foot care to manage foot ailments; and
- h) performing minor surgical procedures such as on the foot and ankles.

**Examples:**

Arts therapist

Dance and movement therapist

Food-drug regulation officer

Fumigation supervisor

Occupational therapist

Phlebotomist

Podiatrist

Pulmonary therapist

Recreational therapist

Respiratory therapist

**23 TEACHING PROFESSIONALS**

Teaching professionals teach the theory and practice of one or more disciplines at different educational levels, conduct research and improve or develop concepts, theories and operational methods pertaining to their particular discipline, and prepare scholarly papers and books.

Tasks performed by workers in this sub-major group usually include: conducting classes, courses, or tutorials at a particular educational level, for educational and vocational purposes, including private lessons; conducting adult literacy programmes; teaching and educating persons learning difficulties or special needs; designing and modifying curricula; inspecting and advising on teaching methods and aids; participating in decisions concerning the organization of teaching and related activities at schools and universities; conducting research in particular subjects to improve or develop concepts, theories or operational methods for application in industrial and other fields; preparing scholarly papers and books. Supervision of other workers may be included.

### **231 2310 UNIVERSITY AND HIGHER EDUCATION TEACHERS**

University and higher education teachers prepare and deliver lectures and conduct tutorials in one or more subjects within a prescribed course of study at a university or other higher educational institution. They conduct research, and prepare scholarly papers and books.

Their tasks include:

- a) designing and modifying curricula and preparing courses of study in accordance with requirements;
- b) preparing and delivering lectures and conducting tutorials, seminars and laboratory experiments;
- c) stimulating discussion and independent thought among students;
- d) supervising, where appropriate, experimental and practical work undertaken by students;
- e) administering, evaluating and marking examination papers and tests;
- f) directing research of post-graduate students or other members of department;
- g) researching into and developing concepts, theories and operational methods for application in industrial and other fields;
- h) preparing scholarly books, papers or articles; and
- i) participating in departmental and faculty meetings and in conferences and seminars.

#### **Examples:**

Assistant professor	Information technology professor
Clinical instructor	Professor
College professor	University lecturer

### **232 2320 VOCATIONAL EDUCATION TEACHERS**

Vocational education teachers teach or instruct vocational or occupational subjects in adult and further education institutions and to senior students in secondary schools and colleges. They prepare students for employment in specific occupations or occupational areas for which university or higher education is not normally required.

Their tasks include:

- a) developing curricula and planning course content and methods of instruction;
- b) determining training needs of students or workers and liaising with individuals, industry and other education sectors to ensure provision of relevant education and training programs;
- c) presenting lectures and conducting discussions to increase students' knowledge and competence;
- d) instructing and monitoring students in the use of tools, equipment and materials and the prevention of injury and damage;
- e) observing and evaluating students' work to determine progress, provide feedback, and make suggestions for improvement;
- f) administering oral, written or performance tests to measure progress, evaluate training effectiveness and assess competency;



- g) preparing reports and maintaining records such as student grades, attendance rolls, and training activity details;
- h) supervising independent or group projects, field placements, laboratory work, or other training;
- i) providing individualized instruction and tutorial or remedial instruction; and
- j) conducting on-the-job training sessions to teach and demonstrate principles, techniques, procedures, or methods of designated subjects.

**Examples:**

Automotive technology instructor	Teacher in home industries
Computer instructor	Teacher in industrial arts
Cosmetology instructor	Teacher in trades
Ground instructor	Vocational education teacher
Software instructor	

**233 2330 SECONDARY EDUCATION TEACHERS**

Secondary education teachers teach one or more subjects at secondary education level, excluding subjects intended to prepare students for employment in specific occupational areas.

Their tasks include:

- a) designing and modifying curricula and preparing educational courses of study in accordance with curriculum guidelines;
- b) establishing and enforcing rules for behavior and procedures for maintaining order among students;
- c) preparing and giving lessons, discussions, and demonstrations in one or more subjects;
- d) establishing clear objectives for all lessons, units, and projects and communicating those objectives to students;
- e) preparing materials and classrooms for class activities;
- f) adapting teaching methods and instructional materials to meet students' varying needs and interests;
- g) observing and evaluating students' performance and behavior;
- h) preparing, administering and marking tests, assignments and examinations to evaluate pupils' progress;
- i) preparing reports about pupils' work and conferring with other teachers and parents;
- j) participating in meetings concerning the school's educational or organizational policies; and
- k) planning, organizing and participating in school activities such as excursions, sporting events and concerts.

**Examples:**

Computer teacher (Secondary education)	Reading and writing teacher
High school teacher	Secondary education teacher
Language teacher (Secondary education)	Science and Mathematics Teaching Professionals
Literature teacher	

**234 PRIMARY SCHOOL AND EARLY CHILDHOOD TEACHERS**

Primary school and early childhood teachers teach a range of subjects at the primary level of education and organize educational activities for children below primary school age.

Tasks performed usually include: preparing programme of learning and giving instruction in a range of subjects at the primary education level, planning and organizing activities designed to facilitate children's development of language, physical and social skills; preparing reports. Supervision of other workers may be included.

### **2341 PRIMARY SCHOOL TEACHERS**

Primary school teachers teach a range of subjects at the primary education level.

Their tasks include:

- a) preparing daily and longer term lesson plans in accordance with curriculum guidelines;
- b) instructing children individually and in groups, using various teaching methods and materials (e.g. computers, books, games), adapting to children's varying needs;
- c) maintaining discipline and good working habits in the classroom;
- d) planning and conduct activities with the children such as sporting activities, concerts and excursions;
- e) assigning and grading class work and homework;
- f) preparing, administering, and grading tests and assignments to evaluate children's progress;
- g) observing and evaluating children's performance and behavior;
- h) supervising children during classes and at other times in the school day, including the playground during breaks;
- i) participating in staff meetings and other sessions, and conferring with other teachers concerning educational issues; and
- j) preparing for and attending parent meetings to discuss children's progress and problems.

#### **Examples:**

Computer trainor (Primary education)	Primary school teachers
Home economics (Primary education)	Science and Mathematics Elementary
Language teacher (Primary education)	Education Teaching Professionals

### **2342 EARLY CHILDHOOD EDUCATORS**

Early childhood educators promote the social, physical, and intellectual development of children below primary school age through the provision of educational and play activities.

Their tasks include:

- a) planning and organizing individual and group activities designed to facilitate the development of children's motor skills, cooperative and social skills, confidence and understanding;
- b) promoting language development through story-telling, role-play, songs, rhymes and informal conversations and discussions;
- c) leading children in activities that, provide opportunities for creative expression through the media of art, dramatic play, music and physical fitness;
- d) observing children in order to evaluate progress and to detect signs of developmental, emotional or health related problems with parents;
- e) observing and assessing nutritional health, welfare and safety needs of students and identifying factors which may impede students' progress;
- f) supervising children's activities to ensure safety and resolve conflicts;
- g) guiding and assisting children in the development of proper eating, dressing and toilet habits;
- h) discussing progress or problems of children with parents and other staff

- members and identifying appropriate actions and referrals to other services; and
- i) establishing and maintaining collaborative relationships with other service providers working with young children.

**Examples:**

Kindergarten teacher  
Early childhood educator  
Nursery school teacher

Preparatory school teacher  
Pre-school teacher

**235 OTHER TEACHING PROFESSIONALS**

Other teaching professionals conduct research and advise on teaching methods, teach people with learning difficulties or special needs; teach non-native languages for migration and related purposes; give private tuition; teach arts, information technology and other subjects outside the mainstream primary, secondary and higher education systems and provide other teaching services not classified elsewhere in Sub-major group 23, Teaching professionals.

Tasks performed usually include: conducting research and developing or advising on teaching methods, courses and aids; teaching physically handicapped children, young persons or adults or those with learning difficulties or other with special needs, teaching non-native languages for migration purposes; teaching students in practice, theory and performance of music, drama, dance, visual and other arts; developing, scheduling and conducting training programs and courses for information technology users.

**2351 EDUCATION METHODS SPECIALISTS**

Education methods specialists conduct research and develop or advise on teaching methods, courses and aids. They review and examine teachers' work, the functioning of educational institutions and the results achieved and recommend changes and improvements.

Their tasks include:

- a) researching into current developments in curricula, teaching methods and other educational practices, and advising on necessary changes and possible improvements;
- b) evaluating and advising on contents of courses and methods of examination;
- c) researching into audio-visual and other teaching aids and advising on, planning and organizing their introduction in educational establishments;
- d) documenting subjects and courses developed, and evaluating new courses;
- e) providing ongoing professional development, training and consultative services to teachers;
- f) organizing and conducting workshops and conferences to train teachers in new programs and methods;
- g) developing the structure, content and objectives of new educational courses and programs;
- h) visiting schools periodically and conferring with administrative and teaching staff on questions relating to curricula, teaching methods, equipment and other matters;
- i) visiting classrooms to observe teaching techniques and to evaluate teachers performance, and scholastic results obtained; and
- j) preparing reports and making recommendations to educational authorities concerning possible changes and improvements in curricula, teaching methods, and other matters.

**Examples:**

Audio-visual teaching aid specialist	Education methods specialist
Curriculum coordinator	School inspector
Curriculum developer	Teaching aids specialist
Education methods adviser	Voice and accent teacher

**2352 SPECIAL NEEDS TEACHERS**

Special needs teachers teach physically or mentally handicapped children, young persons, or adults, or those with learning difficulties or other special needs. They promote the social, emotional, intellectual and physical development of their students.

Their tasks include:

- a) assessing students' abilities and limitations with regard to intellectual, physical, social and emotional impairments, exceptional intellectual gifts, or other specific problems;
- b) designing or modifying curricula and preparing and delivering programmes, lessons and activities adapted to students' abilities and needs;
- c) giving instruction on an individual or group basis using special techniques or aids appropriate to students' needs;
- d) employing special educational strategies and techniques during instruction to improve the development of sensory- and perceptual-motor skills, language, cognition, and memory;
- e) establishing and enforcing rules for behavior and policies and procedures to maintain order among students;
- f) teaching academic subjects, and practical and self-help skills to students with hearing, sight and other impairments;
- g) stimulating and developing students' confidence interests, abilities, manual skills and coordination;
- h) conferring with other staff members to plan and schedule lessons for special needs students;
- i) preparing and maintaining student data and other records and submitting reports;
- j) administering various forms of assessment and evaluating progress of each student; and
- k) conferring with students, parents, head teacher and other relevant professionals involved in the students' care to develop individual educational plans designed to promote students' development.

**Examples:**

Learning disabilities special education teacher	Teacher for the mentally handicapped
Learning support teacher	Teacher for the physically handicapped
Remedial teacher	Teacher of gifted children
Teacher for the abnormal children	Teacher of hearing impaired
	Teacher of sight impaired

**2353 OTHER LANGUAGE TEACHERS**

Other language teachers teach non-native languages to adults and children who are learning a language for reasons of migration, to fulfil employment requirements or opportunities, to facilitate participation in educational programmes delivered in a foreign language, or for personal enrichment. They work outside the mainstream primary, secondary and higher education systems, or in support of students and teachers within those systems.

Their tasks include:

- a) assessing the level of ability and the extent of language difficulties of students, and establishing students' needs and learning goals;
- b) planning, preparing and delivering lessons and workshops for groups and individuals with content and rate of progression adapted to students' abilities and needs;
- c) designing and producing teaching materials and adapting existing materials;
- d) assessing students' progress;
- e) assisting students in classroom settings where subjects are taught in a language other than the students' native language;
- f) providing assistance to other teachers by designing special teaching programs for students still learning the main language of instruction;
- g) assigning and correcting work, and preparing and grading exams; and
- h) assessing, recording and reporting on students' progress.

**Examples:**

Intensive language teacher  
Language researcher  
Language trainer  
Linguistic specialist

Migrant education teacher  
Practical language teacher  
Second language teacher

**2354 OTHER MUSIC TEACHERS**

Other music teachers teach students in the practice, theory and performance of music outside the mainstream primary, secondary and higher education systems, but may provide private or small group tuition as an extra curricular activity in association with mainstream educational institutions.

Their tasks include:

- a) assessing the students' level of ability and determining needs and learning goals;
- b) planning, preparing and delivering programs of study, lessons and workshops for individual students and groups;
- c) preparing and presenting material on the theory and interpretation of music;
- d) instructing and demonstrating practical aspects of singing or of playing a particular instrument;
- e) teaching students to read and write musical notation;
- f) assigning exercises and teaching pieces of music relevant to students' level of ability, interests and talents;
- g) assessing students and offering advice, criticism and encouragement;
- h) revising curricula, course content, course materials and methods of instruction;
- i) preparing students for examinations, performances and assessments;
- j) arranging visits and tours to musical performances; and
- k) organizing and assisting in auditions or performances of students' work.

**Examples:**

Music teacher  
Guitar teacher

Piano teacher  
Singing/voice teacher

**2355 OTHER ARTS TEACHERS**

Other arts teachers teach students in the practice, theory and performance of dance, drama, visual and other arts (excluding music) outside the mainstream primary, secondary and higher education systems, but may provide private or small group tuition as an extra curricular activity in association with mainstream educational institutions.

Their tasks include:

- a) assessing the students' level of ability and determining learning needs;
- b) planning, preparing and delivering programs of study, lessons and workshops for individual students and groups;
- c) preparing and presenting material on the theory of the subject area being studied;
- d) instructing and demonstrating practical aspects of drama, dance, visual or other arts;
- e) assigning exercises and work relevant to students' level of ability, interests and talents;
- f) assessing students and offering advice, criticism and encouragement;
- g) revising curricula, course content, course materials and methods of instruction;
- h) preparing students for examinations, performance and assessments;
- i) arranging visits and tours to exhibitions and performances; and
- j) organizing and assisting in performances or exhibitions of students' work.

**Examples:**

Dance teacher  
Drama teacher

Painting teacher  
Sculpture teacher

### 2356 INFORMATION TECHNOLOGY TRAINERS

Information technology trainers develop, schedule and conduct training programs and courses for computer and other information technology users outside the mainstream primary, secondary and higher education systems.

Their tasks include:

- a) identifying the information technology training needs and requirements of individual users and organizations;
- b) preparing and developing instructional training material and aids such as handbooks, visual aids, online tutorials, demonstration models, and supporting training reference documentation;
- c) designing, coordinating, scheduling and conducting training and development programs that can be delivered in the form of individual and group instruction, and facilitating workshops meetings; demonstrations and conferences;
- d) monitoring and performing ongoing evaluation and assessment of training quality and effectiveness, and reviewing and modifying training objectives, methods and course deliverables;
- e) gathering, investigating and researching background materials to gain a full understanding of the subject matter and systems; and
- f) keeping up-to-date with new product version releases, advances in software, and general information technology trends, writing end user products and materials such as user training, tutorial and instruction manuals, online help, and operating and maintenance instructions.

**Examples:**

Computer trainer  
Information technology trainers  
Software trainer

### 2359 TEACHING PROFESSIONALS NOT ELSEWHERE CLASSIFIED

This unit group covers teaching professionals not classified elsewhere in Sub-major group 23, Teaching professionals. For instance, the group includes those who provide private tuition in subjects other than foreign languages and the arts, and those who provide educational counselling to students.

Their tasks include:

- a) assessing students' level of ability and determining learning needs;
- b) planning, preparing and delivering programs of study, lessons and workshops for individual students and groups;
- c) preparing and presenting material on the theory of the subject area being studied;
- d) instructing and demonstrating practical aspects of the subject area being studied;
- e) assigning exercises and work relevant to students' level of ability, interests and aptitude;
- f) assessing students and offering advice, criticism and encouragement;
- g) revising curricula, course content, course materials and methods of instruction;
- h) preparing students for examinations and assessments;
- i) counselling students regarding educational issues such as course and program selection, class scheduling, school adjustment, truancy, study habits, and career planning;
- j) counselling students to help them understand and overcome personal, social, or behavioral problems affecting their education; and
- k) preparing students for later educational experiences by encouraging them to explore learning opportunities and to persevere with challenging tasks.

**Examples:**

Adult literacy teacher

Fighter Pilot Escape & Evasion Training

Instructor

Flight instructor

Lecturer

Literacy tutor

Mathematics coach

Non-formal education teacher

Professional tutor

School counselor

Teacher for the exceptionally intelligent

Teaching fellow

Student advisor

## 24 BUSINESS AND ADMINISTRATION PROFESSIONALS

Business and administration professionals perform analytical, conceptual and practical tasks to provide services in financial matters, human resource development, public relations and marketing, sales in the technical, medical, information and communication technology areas and conduct, reviews of organizational structures, methods and systems as well as quantitative analyzes of information affecting investment programs.

Tasks performed by workers in this sub-major group usually include: collecting, analyzing and interpreting information on the financial viability, cost structures and trading effectiveness of organizations; conducting audits, preparing financial statements and controlling treasury systems for organizations; developing and reviewing financial plans and strategies, executing buy and sell orders, and negotiating the purchase and sale of commodities; developing, implementing and evaluating staff recruitment, training and development programs; researching, developing and implementing marketing and public relations campaigns; studying and developing methods and policies to improve and promote government and business operations and effectiveness; acquiring and updating knowledge of employers' and competitors' goods and services, and market conditions; assessing customers' needs and explaining and demonstrating goods and services to them.

### 241 FINANCE PROFESSIONALS

Finance professionals plan, develop, organize, administer, invest, manage and conduct quantitative analyses of either financial accounting systems or funds for individuals, establishments and public or private institutions.

Tasks performed usually include: preparing and organizing financial statements for an organization; reviewing financial materials of an organization; providing financial advice to individuals and organizations; preparing analytic reports concerning segments of the economy and the economy as a whole.

#### **2411 ACCOUNTANTS**

Accountants plan, organize and administer accounting systems for individuals and establishments. Some occupations classified here examine and analyze the accounting and financial records of individuals and establishments to ensure accuracy and compliance with established accounting standards and procedures.

Their tasks include:

- a) advising on, planning and installing budgetary, accounts controlling and other accounting policies and systems;
- b) preparing and certifying financial statements for presentation to management, shareholders and statutory or other bodies;
- c) preparing tax returns, advising on taxation problems and contesting disputed claims before tax officials;
- d) preparing or reporting on profit forecasts and budgets;
- e) conducting financial investigations in such matters as suspected fraud, insolvency and bankruptcy;
- f) auditing accounts and bookkeeping records;
- g) conducting investigations and advising management on financial aspects of productivity, stockholdings, sales, new products, etc.; and
- h) devising and controlling a system to determine unit cost of products and services.

##### **Examples:**

Accountant	Cost controller (Finance)
Audit/Financial Examiner	General ledger accountant
Auditor	Final audit process engineer
Bank accountant	Financial controller
Chartered accountant	Management accountant
Cost accountant	Tax accountant
Cost analyst	

#### **2412 FINANCIAL AND INVESTMENT ADVISERS**

Financial and investment advisers develop financial plans for individuals and organizations, and invest and manage funds on their behalf.

Their tasks include:

- a) building and maintaining a client base;
- b) interviewing clients to determine financial status and objectives, risk tolerance and other information needed to develop financial plans and investment strategies;
- c) setting financial objectives, and developing and implementing strategies for achieving the financial objectives;
- d) arranging to buy and sell stocks and bonds for clients;
- e) monitoring investment performance, and reviewing and revising investment plans based on modified needs and changes in markets; and
- f) recommending and arranging insurance cover for clients.

##### **Examples:**

Estate planner  
Financial planner



**2413 FINANCIAL ANALYSTS**

Financial analysts conduct quantitative analyses of information affecting investment programs of public or private institutions.

Their tasks include:

- a) analyzing financial information to produce forecasts of business, industry, and economic conditions for use in making investment decisions;
- b) maintaining knowledge and staying abreast of developments in the fields of industrial technology, business, finance, and economic theory;
- c) interpreting data affecting investment programs, such as price, yield, stability, future trends in investment risks, and economic influences;
- d) monitoring economic, industrial, and corporate developments through analysis of information obtained from financial publications and services, investment banking firms, government agencies, trade publications, company sources, and personal interviews;
- e) recommending investments and investment timing to companies, investment firm staff, or the investing public;
- f) determining the prices at which securities should be syndicated and offered to the public;
- g) preparing plans of action for investment based on financial analyses;
- h) evaluating and comparing the relative quality of various securities in a given industry; and
- i) presenting oral and written reports on general economic trends, individual corporations, and entire industries.

**Examples:**

Audit analyst

Bond analyst

Financial analyst

Fiscal analyst

Investment consultant

Investment analyst

Securities consultant

**242 ADMINISTRATION PROFESSIONALS**

Administration professionals apply various concepts and theories related to improving the effectiveness of organizations and the individuals within the organization.

Tasks performed usually include: evaluating the structure of organizations and suggesting areas of improvement; ensuring that the operational activities of an organization are consistent with the policy objectives of the organization; recruiting, training, developing, and counselling personnel within an organization.

**2421 MANAGEMENT AND ORGANIZATION ANALYSTS**

Management and organization analysts assist organizations to achieve greater efficiency and solve organizational problems. They study organizational structures, methods, systems and procedures.

Their tasks include:

- a) assisting and encouraging the development of objectives, strategies and plans aimed at achieving customer satisfaction and the efficient use of organizations' resources;
- b) analyzing and evaluating current systems and structures;
- c) discussing current systems with staff and observing systems at all levels of organization;
- d) directing clients towards more efficient organization and developing solutions to organizational problems;

- e) undertaking and reviewing work studies by analyzing existing and proposed methods and procedures such as administrative and clerical procedures;
- f) recording and analyzing organizations' work flow charts, records, reports, manuals and job descriptions;
- g) preparing and recommending proposals to revise methods and procedures, alter work flows, redefine job functions and resolve organizational problems;
- h) assisting in implementing approved recommendations, issuing revised instructions and procedure manuals, and drafting other documentation; and
- i) reviewing operating procedures and advising of departures from procedures and standards.

**Examples:**

Business consultant

Management consultant

Organization and methods analyst

**2422 POLICY ADMINISTRATION PROFESSIONALS**

Policy administration professionals develop and analyze policies guiding the design, implementation and modification of government and commercial operations and programs.

Their tasks include:

- a) liaising and consulting with program administrators and other interested parties to identify policy needs;
- b) reviewing existing policies and legislation to identify anomalies and out-of-date provisions;
- c) researching social, economic and industrial trends, and client expectations of programs and services provided;
- d) formulating and analyzing policy options, preparing briefing papers and recommendations for policy changes, and advising on preferred options;
- e) assessing impacts, financial implications, interactions with other programs and political and administrative feasibility of policies;
- f) conducting threat and risk assessments and developing responses; and
- g) reviewing operations and programs to ensure consistency with policies of the organization.

**Examples:**

Policy analyst

Intelligence officer

Political adviser

**2423 PERSONNEL AND CAREERS PROFESSIONALS**

Personnel and careers professionals provide professional business services related to personnel policies such as employee recruitment or development, occupational analyzes and vocational guidance.

Their tasks include:

- a) advising on and performing personnel functions relating to employee recruitment, placement, training, promotion, compensation, and employee-management relations or other areas of personnel policy;
- b) studying and analyzing jobs performed in an establishment by various means, including interviews with workers, supervisors and management, and writing detailed position, job or occupation descriptions from information obtained;
- c) preparing occupational information or working on occupational classification systems;

- d) advising and working on the foregoing and other aspects of job and occupation analyzes in such fields as personnel administration, workforce research and planning, training, or occupational information and vocational guidance; and
- e) studying and advising individuals on employment opportunities, career choices and further education or training that may be desirable.

**Examples:**

Careers adviser	Outplacement consultant
Human resource development specialist	Personnel officer
Human resource generalist	Personnel specialist
Industrial relations management specialist	Practicum coordinator
Job analyst	Risk management analyst
Occupational analyst	Vocational/guidance counsellor

**2424 TRAINING AND STAFF DEVELOPMENT PROFESSIONALS**

Training and staff development professionals plan, develop, implement and evaluate training and development programs to ensure management and staff acquire the skills and develop the competencies required by organizations to meet organizational objectives.

Their tasks include:

- a) identifying training needs and requirements of individuals and organizations;
- b) setting human resource development objectives and evaluating learning outcomes;
- c) preparing and developing instructional training material and aids such as handbooks, visual aids, online tutorials, demonstration models, and supporting training reference documentation;
- d) designing, coordinating, scheduling and conducting training and development programs that can be delivered in the form of individual and group instruction, and facilitating workshops, meetings, demonstrations and conferences;
- e) liaising with external training providers to arrange delivery of specific training and development programs;
- f) promoting internal and external training and development, and evaluating these promotional activities;
- g) monitoring and performing ongoing evaluation and assessment of internal and external training quality and effectiveness, and reviewing and modifying training objectives, methods and course deliverables; and
- h) gathering, investigating and researching background materials to gain an understanding of various subject matters and system.

**Examples:**

Training facilitator	Training officer
Training coordinator	Workforce development specialist

**243 SALES, MARKETING AND PUBLIC RELATIONS PROFESSIONALS**

Sales, marketing and public relations professionals plan, develop, coordinate and implement programs of information dissemination to promote organizations, goods and services, and represent companies in selling a range of technical, industrial, medical, pharmaceutical and ICT goods and services.

Tasks performed usually include: commissioning and undertaking market research, analyzing the findings, and planning advertising marketing and public relations activities; supporting business

growth and development through the preparation and execution of marketing objectives, policies and programs; planning and organizing publicity campaigns; appraising and selecting material submitted by writers, photographers, illustrators and others to create favorable publicity; acquiring and updating knowledge of employers' and competitors' goods and services, and market conditions; assessing customers' needs and explaining and demonstrating goods and services to them; visiting regular and prospective client businesses to establish and act on marketing opportunities; quoting and negotiating prices and credit terms, and completing contracts.

#### **2431 ADVERTISING AND MARKETING PROFESSIONALS**

Advertising and marketing professionals develop and coordinate advertising strategies and campaigns, determine the market for new goods and services, and identify and develop market opportunities for new and existing goods and services.

Their tasks include:

- a) planning, developing and organizing advertising policies and campaigns to support sales objectives;
- b) advising managers and clients on strategies and campaigns to reach target markets, creating consumer awareness and effectively promoting the attributes of goods and services;
- c) writing advertising copy and media scripts, and arranging television and film production and media placement;
- d) analyzing data regarding consumer patterns and preferences;
- e) interpreting and predicting current and future consumer trends;
- f) researching potential demand and market characteristics for new goods and services and collecting and analyzing data and other statistical information;
- g) supporting business growth and development through the preparation and execution of marketing objectives, policies and programs;
- h) commissioning and undertaking market research to identify market opportunities for new and existing goods and services; and
- i) advising on all elements of marketing such as product mix, pricing, advertising and sales promotion, selling, and distribution channels.

##### **Examples:**

Advertising account executive	Marketing executive
Advertising assistant	Marketing specialist
Advertising specialist	Media production specialist
Business development/marketing specialist	Merchandising supervisor
Market research analyst	Sales and promotion supervisor
Marketing coordinator	Sales executive
	Telemarketing supervisor

#### **2432 PUBLIC RELATIONS PROFESSIONALS**

Public relations professionals plan, develop, implement and evaluate information and communication strategies that create an understanding and a favorable view of businesses and other organizations, their goods and services, and their role in the community.

Their tasks include:

- a) planning and organizing publicity campaigns and communication strategies;
- b) advising executives on the public relations implications of their policies, programs and practices preparing and controlling the issue of news and press releases;
- c) undertaking and commissioning public opinion research, analyzing the findings and planning public relations and promotional campaigns;

- d) organizing special events, seminars, entertainment, competitions and social functions to promote goodwill and favorable publicity;
- e) representing organizations and arranging interviews with publicity media;
- f) attending business, social and other functions to promote the organization;
- g) commissioning and obtaining photographs and other illustrative material; and
- h) selecting, appraising and revising material submitted by publicity writers, photographers, illustrators and others to create favorable publicity.

**Examples:**

Public relation officer

Public relations copy writer

**2433 TECHNICAL AND MEDICAL SALES PROFESSIONALS (Excluding ICT)**

Technical and medical sales professionals (excluding ICT) represent companies in selling a range of industrial, medical and pharmaceutical goods and services to industrial, business, professional and other establishments.

Their tasks include:

- a) compiling lists of prospective client businesses using directories and other sources;
- b) acquiring and updating knowledge of employers' and competitors' goods and services, and market conditions;
- c) visiting regular and prospective client businesses to establish and act on selling opportunities;
- d) assessing clients' needs and resources and recommending appropriate goods or services;
- e) providing input to product design where goods or services must be tailored to suit clients' needs;
- f) developing reports and proposals as part of sales presentation to demonstrate benefits from use of good or service;
- g) estimating costs of installing and maintaining equipment or service;
- h) monitoring customers' changing needs and competitor activity, and reporting these developments to sales management;
- i) quoting and negotiating prices and credit terms, and preparing and administering sales contracts;
- j) arranging delivery of goods, installation of equipment and the provision of services;
- k) reporting to sales management on sales made and the marketability of goods and services; and
- l) consulting with clients after sale to ensure satisfaction resolve any problems and provide ongoing support.

**Examples:**

Sales representative (industrial products)	Quality management representative
Sales representative (medical and pharmaceutical products)	Technical sales representative
	Medical sale representative

**2434 INFORMATION AND COMMUNICATIONS TECHNOLOGY SALES PROFESSIONALS**

Information and communications technology (ICT) sales professionals sell, at the wholesale level, a range of computer hardware, software and other information and communications technology goods and services including installations and provide specialized information as required.

Their tasks include:

- a) soliciting orders and selling goods to retail, industrial, wholesale and other establishments;
- b) selling technical equipment, supplies and related services to business establishments or individuals;
- c) discussing the needs of new and existing customers and providing specialized information about how particular equipment, supplies and services meet those needs;
- d) quoting and negotiating prices and credit terms, and completing contracts and recording orders;
- e) updating customer records and preparing sales reports;
- f) arranging delivery of goods, installation of equipment and the provision of services; and
- g) reporting customers' reactions and requirements to manufacturers.

**Examples:**

IT technical sales specialist

IT sales

## **25 INFORMATION AND COMMUNICATIONS TECHNOLOGY PROFESSIONALS**

Information and communications technology professionals conduct research, plan, design, write, test, provide advice and improve information technology systems, hardware, software and related concepts for specific applications; develop associated documentation including principles, policies and procedures; and design, develop, control, maintain and support databases and other information systems to ensure optimal performance and data integrity and security.

Tasks performed usually include: researching information technology use in business functions; identifying areas for improvement and researching the theoretical aspects and operational methods for the use of computers; evaluating, planning and designing hardware or software configurations for specific applications including for Internet, Intranet and multimedia systems; designing, writing, testing and maintaining computer programs; designing and developing database architecture and database management systems; developing and implementing security plans and data administration policy, and administering computer networks and related computing environments; analyzing, developing, interpreting and evaluating complex system design and architecture specifications, data models and diagrams in the development, configuration and integration of computer systems.

### **251 SOFTWARE AND APPLICATIONS DEVELOPERS AND ANALYSTS**

Software and applications developers and analysts conduct research, plan, design, write, test, provide advice on and improve information technology systems, such as hardware, software and other applications to meet specific requirements.

Tasks performed usually include: researching information technology use in business functions and identifying areas in which improvements could be made to maximize effectiveness and efficiency; conducting research into the theoretical aspects of and operational methods for the use of computers; evaluating, planning and designing hardware or software configurations for specific applications; designing, writing, testing and maintaining computer programs for specific requirements; evaluating, planning and designing Internet, Intranet and multimedia systems.

#### **2511 SYSTEMS ANALYST**

Systems analysts conduct research, analyze and evaluate client information technology requirements, procedures or problems, and develop and implement proposals, recommendations, and plans to improve current or future information systems.

Their tasks include:

- a) consulting with users to formulate and document requirements and with management to ensure agreement on systems principles;
- b) identifying and analyzing business processes, procedures and work practices;
- c) identifying and evaluating inefficiencies and recommending optimal business practices, and system functionality and behavior;
- d) taking responsibility for deploying functional solutions, such as creating, adopting and implementing system test plans;
- e) developing functional specifications for use by systems developers;
- f) expanding or modifying systems to improve work flow or serve new purposes; and
- g) coordinating and linking the computer systems within an organization to increase compatibility.

**Examples:**

Business analyst (IT)	Systems analyst
Computer analyst	Systems consultant
Computer scientist	Systems designer (IT)
Management information system designer	ICT Business analyst

## 2512 SOFTWARE DEVELOPERS

Software developers research, analyze and evaluate requirements for existing or new software applications and operating systems, and design, develop, test and maintain software solutions to meet these requirements.

Their tasks include:

- a) researching, analyzing and evaluating requirements for software applications and operating systems;
- b) researching, designing, and developing computer software systems;
- c) consulting with engineering staff to evaluate interface between hardware and software;
- d) developing and directing software testing and validation procedures;
- e) modifying existing software to correct errors, to adapt it to new hardware or to upgrade interfaces and improve performance;
- f) directing software programming and development of documentation;
- g) assessing, developing, upgrading and documenting maintenance procedures for operating systems, communications environments and applications software; and
- h) consulting with customers concerning maintenance of software system.

**Examples:**

Actuarial systems program analyst	Software architect
Programmer analyst	Computer applications engineer
Software designer	Computer Engineers and Related Professionals
Software developer	
Software engineer	

## 2513 WEB AND MULTIMEDIA DEVELOPERS

Web and multimedia development professionals combine design and technical knowledge to research, analyze, evaluate, design, programme and modify websites, and applications that draw together text, graphics, animations, imaging, audio and video displays, and other interactive media.

Their tasks include:

- a) analyzing, designing and developing Internet sites applying a mixture of artistry and creativity with software programming and scripting languages and interfacing with operating environments;
- b) designing and developing digital animations, imaging, presentations, games, audio and video clips, and Internet applications using multimedia software, tools and utilities, interactive graphics and programming languages;
- c) communicating with network specialists regarding web-related issues, such as security and hosting web sites, to control and enforce Internet and web server security, space allocation, user access, business continuity, web site backup and disaster recovery planning;
- d) designing, developing and integrating computer code with other specialized inputs, such as image files, audio files and scripting languages, to produce, maintain and support web sites; and
- e) assisting in analyzing, specifying and developing Internet strategies, web-based methodologies and development plans.

**Examples:**

Animation programmer	Game developers
Communications programmer	Internet developer
Computer games programmer	Multimedia programmer
Computer graphic artist	Website architect
Database programmer	Website developer
Digital content developers	

**2514 APPLICATIONS PROGRAMMERS**

Applications programmers write and maintain programmable code outlined in technical instructions and specifications for software applications and operating systems.

Their tasks include:

- a) writing and maintaining program code outlined in instructions and specifications in accordance with quality accredited standards;
- b) revising, repairing or expanding existing programs to increase operating efficiency or adapt to new requirements;
- c) conducting trial runs of programs and software applications to confirm that they will produce the desired information;
- d) compiling and writing documentation of program development; and
- e) identifying and communicating technical problems, processes and solutions.

**Examples:**

Application programmer	Sequel programmer
C Language programmer	Turbo pascal programmer
Cobol programmer	Visual basic programmer
Java programmer	Visual foxpro programmer
Oracle programmer	Visual interdev programmer
RPG 400 programmer	

**2519 SOFTWARE AND APPLICATIONS DEVELOPERS AND ANALYSTS NOT ELSEWHERE CLASSIFIED**

This unit group covers software and applications developers and analysts not classified elsewhere in minor group 251, Software and applications developers and analysts. For instance the group includes those professionals specializing in quality assurance including software testing.



Their tasks include:

- a) developing and documenting software testing plans;
- b) installing software and hardware and configuring operating system software in preparation for testing;
- c) verifying that programmes function according to user requirements and established guidelines;
- d) executing, analyzing and documenting results of software application tests and information and telecommunication systems tests; and
- e) developing and implementing software and information system testing policies, procedures and scripts.

**Examples:**

AutoCAD designer

Software tester

Quality assurance analyst (computer)

Systems tester

## 252 DATABASE AND NETWORK PROFESSIONALS

Database and network professionals design, develop, control, maintain and support the optimal performance and security of information technology systems and infrastructure, including databases, hardware and software, networks and operating systems.

Tasks performed usually include: designing and developing database architecture, data structures, dictionaries and naming conventions for information systems projects; designing, constructing, modifying, integrating, implementing and testing database management systems; developing and implementing security plans, data administration policy, documentation and standards; maintaining and administering computer networks and related computing environments; analyzing, developing, interpreting and evaluating complex system design and architecture specifications, data models and diagrams in the development, configuration and integration of computer systems.

### 2521 DATABASE DESIGNERS AND ADMINISTRATORS

Database designers and administrators design, develop, control, maintain and support the optimal performance and security of databases.

Their tasks include:

- a) designing and developing database architecture, data structures, tables, dictionaries and naming conventions for information systems projects;
- b) designing, constructing, modifying, integrating, implementing and testing database management systems;
- c) conducting research and providing advice on the selection, application and implementation of database management tools;
- d) developing and implementing data administration policy, documentation, standards and models;
- e) developing policies and procedures for database access and usage and for the backup and recovery of data; and
- f) performing the operational establishment and preventive maintenance of backups, recovery procedures, and enforcing security and integrity controls.

**Examples:**

Data administrator

Database analyst

Application database administrator

Database architect

Database administrator

**2522 SYSTEMS ADMINISTRATORS**

Systems administrators develop, control, maintain and support the optimal performance and security of information technology systems.

Their tasks include:

- a) maintaining and administering computer networks and related computing environments including computer hardware, systems software, applications software and all configurations;
- b) recommending changes to improve systems and network configurations, and determining hardware or software requirements related to such changes;
- c) diagnosing hardware and software problems;
- d) performing data backups and disaster recovery operations; and
- e) operating master consoles to monitor the performance of computer systems and networks, and to coordinate computer network access and use.

**Examples:**

Network administrator  
Network engineer  
System administrator

Computer system engineer  
Computer systems administrator

**2523 COMPUTER NETWORK PROFESSIONALS**

Computer network professionals research, analyze and recommend strategies for network architecture and development, implement, manage, maintain and configure network hardware and software, and monitor, troubleshoot and optimize performance.

Their tasks include:

- a) analyzing, developing, interpreting and evaluating complex system design and architecture specifications, data models and diagrams in the development, configuration and integration of computer systems;
- b) researching, analyzing, evaluating and monitoring network infrastructure to ensure networks are configured to operate at optimal performance;
- c) assessing and recommending improvements to network operations and integrated hardware, software, communications and operating systems;
- d) providing specialist skills in supporting and troubleshooting network problems and emergencies;
- e) installing, configuring, testing, maintaining and administering new and upgraded networks, software database applications, servers and workstations;
- f) preparing and maintaining procedures and documentation for network inventory, and recording diagnosis and resolution of network faults, enhancements and modifications to networks, and maintenance instructions; and
- g) monitoring network traffic, and activity, capacity and usage to ensure continued integrity and optimal network performance.

**Examples:**

Communication analyst (computer)  
Network analyst  
Information technology (IT) specialist

Management information analyst  
IT engineers

**2529 DATABASE AND NETWORK PROFESSIONALS NOT ELSEWHERE CLASSIFIED**

This unit group covers database and network professionals elsewhere in Minor group 252, Database and network professionals. For instance, the group includes information and communications technology security specialists.

Their tasks include:

- a) developing plans to safeguard computer files against accidental or unauthorized modification, destruction, or disclosure and to meet emergency data processing needs;
- b) training users and promoting security awareness to ensure system security and to improve server and network efficiency;
- c) conferring with users to discuss issues such as computer data access needs, security violations, and programming changes;
- d) monitoring current reports of computer viruses to determine when to update virus protection systems;
- e) modifying computer security files to incorporate new software, correct errors, or change individual access status;
- f) monitoring use of data files and regulate access to safeguard information in computer files;
- g) performing risk assessments and executing tests of data processing system to ensure functioning of data processing activities and security measures; and
- h) encrypting data transmissions and erecting firewalls to conceal confidential information as it is being transmitted and to keep out tainted digital transfers.

**Examples:**

Digital forensic specialist

Security specialist (ICT)

## 26 LEGAL, SOCIAL AND CULTURAL PROFESSIONALS

Legal, social and cultural professionals conduct research, improve or develop concepts, theories and operational methods, or apply knowledge relating to the law, storage and retrieval of information and artefacts, psychology, social welfare, politics, economics, history, religion, languages, sociology, other social sciences, and to arts and entertainment.

Tasks performed by workers in this sub-major group usually include: conducting research on legal problems; drafting laws and regulations; advising clients on legal cases; pleading and conducting cases in a court of law; presiding over judicial proceedings in a court of law; developing and maintaining library and gallery collections of archives; conducting research, improving or developing concepts, theories and operational methods or applying knowledge relating to the field of social sciences; conceiving, creating and performing in literary and artistic works; interpreting and communicating news, ideas, impressions and facts.

### 261 LEGAL PROFESSIONALS

Legal professionals conduct research on legal problems, advise clients on legal aspects of problems, plead cases or conduct prosecutions in courts of law, preside over judicial proceedings in courts of law, and draft laws and regulations.

Tasks performed usually include: giving clients legal advice, undertaking legal business on clients' behalf, and conducting litigation when necessary, or presiding over judicial proceedings- and pronouncing judgement in courts of law. Supervision of other workers may be included.

#### 2611 LAWYERS

Lawyers give clients legal advice on a wide variety of subjects, draw up legal documents, represent clients before administrative boards or tribunals and plead cases or conduct prosecutions in courts of justice, or instruct barristers to plead in higher courts of justice.

Their tasks include:

- a) giving clients legal advice on a wide variety of subjects and undertaking legal business on clients' behalf;
- b) researching legal principles, statutes and previous court decisions related to specific cases;
- c) gathering evidence to formulate a defense or to initiate legal actions, by such means as interviewing clients and witnesses to ascertain the facts of a case;
- d) evaluate findings and develop strategies and arguments in preparation for presentation of cases;
- e) pleading clients' cases before courts of law, tribunals and administrative boards or instructing barristers to plead in higher courts of justice;
- f) accepting briefs and pleading in the higher court;
- g) acting as prosecutor on behalf of the Government;
- h) negotiating settlements in matters which involve legal disputes;
- i) drafting legislation and preparing government regulations based on existing laws; and
- j) drawing up legal documents such as contracts, real estate transactions and wills and preparing statements of legal opinions.

**Examples:**

Adjudicator	Legal counsel
Attorney	Legal analyst
Judicial officer	Prosecutor
Lawyer	Solicitor

## 2612 JUDGES

Judges preside over civil and criminal proceedings in courts of law.

Their tasks include:

- a) presiding over trials and hearings;
- b) interpreting and enforcing rules of procedure and making rulings regarding the admissibility of evidence;
- c) determining the rights and obligations of the parties involved, and, in cases tried by jury;
- d) instructing the jury on points of law that are applicable to the case;
- e) weighing and considering evidence in non-jury trials and deciding legal guilt or innocence or degree of liability of the accused or defendant;
- f) passing sentence on persons convicted in criminal cases, determining damages or other appropriate remedy in civil cases and issuing court orders; and
- g) researching legal issues and writing opinions on the issues.

**Examples:**

Associate Judge	Judge
Chief justice	Magistrate

## 2619 LEGAL PROFESSIONALS NOT ELSEWHERE CLASSIFIED

This unit group covers legal professionals not classified elsewhere in Minor group 261, Legal professionals. For instance, the group includes those who perform legal functions other than pleading or prosecuting cases or presiding over judicial proceedings.

Their tasks include:

- a) giving advice on legal aspects of various personal, business and administrative problems;
- b) drawing up legal documents and contracts; and

- c) determining, by inquest, the causes of any death not obviously due to natural causes.

**Examples:**

Coroner	Legal adviser
Court administrator	Legal consultant
In-house counsel	Legal researcher
Jurist (except lawyer or judge)	Notary

**262 LIBRARIANS, ARCHIVISTS AND CURATORS**

Librarians, archivists and curators develop and maintain the collections of archives, libraries, museums, art galleries, and similar establishments.

Tasks performed usually include: appraising or developing and organizing the contents of archives and artefacts of historical, cultural and artistic interest, and ensuring their safe-keeping and preservation; organizing the collections of and exhibitions at museums, art galleries and similar establishments; developing and the collections of and exhibitions at museums, art galleries and similar establishments; developing and maintaining the systematic collection of recorded and published material and making it available to users in libraries and related institutions; preparing scholarly papers and reports; conducting research.

**2621 ARCHIVISTS AND CURATORS**

Archivists and curators collect, appraise and ensure the safekeeping and preservation of the contents of archives, artefacts and records of historical, cultural, administrative and artistic interest, and of art and other objects. They plan, devise and implement systems for the safekeeping of records and historically valuable documents.

Their tasks include:

- a) evaluating and preserving records for administrative, historical, legal, evidential and other purposes;
- b) directing or carrying out the preparation of indexes, bibliographies, microfilm copies and other reference aids to the collected material and making them available to users;
- c) researching the origin, distribution and use of materials and objects of cultural and historical interest;
- d) organizing, developing and maintaining collections of artistic, cultural, scientific or historically significant;
- e) directing or undertaking classification and cataloguing of museum and art gallery collections and organizing exhibitions;
- f) researching into, appraising, and developing, organizing and preserving historically significant and valuable documents such as government papers, private papers, photographs, maps, manuscripts audio-visual materials;
- g) preparing scholarly papers and reports;
- h) planning and implementing the computerized management of archives and electronic records;
- i) organizing exhibitions at museums and art galleries, publicizing exhibits and arranging special displays for general, specialized or educational interest; and
- j) appraising and acquiring archival materials to build and develop an archival collection for research purposes.

**Examples:**

Archivist	Museum researcher
Art gallery curator	Records manager
Museum curator	

**2622 LIBRARIANS AND RELATED INFORMATION PROFESSIONALS**

Librarians and related information professionals collect, select, develop, organize and maintain library collections and other information repositories, organize and control other library services and provide information for users.

Their tasks include:

- a) organizing, developing and maintaining a systematic collection of books, periodicals and other printed, audio-visually and digitally recorded material;
- b) selecting and recommending acquisitions of books and other printed or audio-visually and digitally recorded material;
- c) organizing, classifying and cataloguing library material;
- d) managing library borrowing and inter-library loan facilities and information networks;
- e) retrieving material and providing information to business and other users based on the collection itself or on library and information-network systems;
- f) conducting research and analyzing or modifying library and information services in accordance with changes in users' needs;
- g) devising and implementing schemes and conceptual models for the storage, organization, classification and retrieval of information;
- h) preparing scholarly papers and reports; and
- i) performing manual, on-line and interactive media reference searches, making interlibrary loans and performing other functions to assist users in accessing library materials.

**Examples:**

Bibliographer  
Cataloguer  
Librarian

**263 SOCIAL AND RELIGIOUS PROFESSIONALS**

Social and related professionals conduct research, improve or develop concepts, theories and operational methods, or apply knowledge relating to philosophy, politics, economics, sociology, anthropology, history, philology, languages, psychology, and other social sciences, or they provide social services to meet the needs of individuals and families in a community.

Tasks performed usually include: formulating and applying solutions to present or projected economic, political or social problems; researching into and analyzing past events and activities and tracing the origin and evolution of the human race; studying the origin and development of languages, or translating or interpreting them; studying mental processes and behavior of individuals and groups; providing social services; preparing scholarly papers and reports. Supervision of other workers may be included.

**2631 ECONOMISTS**

Economists conduct research, monitor data, analyze information and prepare reports and plans to resolve economic and business problems and develop models to analyze, explain and forecast economic behavior and patterns. They provide advice to business, interest groups and governments to formulate solutions to present or projected economic and business problems.

Their tasks include:

- a) forecasting changes in the economic environment for short-term budgeting, long-term planning and investment evaluation;
- b) formulating recommendations, policies and plans for the economy, corporate strategies and investment, and undertaking feasibility studies for projects;

- c) monitoring economic data to assess the effectiveness, and advise on the appropriateness, of monetary and fiscal policies;
- d) forecasting production and consumption of specific products and services based on records of past production and consumption and general economic and industry-specific conditions;
- e) preparing forecasts of income and expenditure, interest rates and exchange rates;
- f) analyzing factors that determine labor force participation, employment, wages, unemployment and other labor market outcomes;
- g) applying mathematical formulae and statistical techniques and apply to test economic theories and devise solutions to economic problems;
- h) compiling, analyzing and interpreting economic data using economic theory and a variety of statistical and other techniques;
- i) evaluating the outcome of political decisions concerning public economy and finances and advising on economic policy and possible courses of action in the light of past, present and projected economic factors and trends;
- j) preparing scholarly papers and reports;
- k) examining problems related to the economic activities of individual companies;
- l) conducting research on market conditions in local, regional or national areas to set sales and pricing levels for goods and services, to assess market potential and future trends and to develop business strategies.

**Examples:**

Econometrician  
Economic adviser  
Economic analyst

Economist  
Labor economist

**2632 SOCIOLOGISTS, ANTHROPOLOGISTS AND RELATED PROFESSIONALS**

Sociologists, anthropologists and related professionals investigate and describe the structure of societies, the origin and evolution of societies, and the interdependence between environmental conditions and human activities. They provide advice on the practical application of their findings in the formulation of economic and social policies.

Their tasks include:

- a) conducting research on the origin, development, structure, social patterns, organizations and inter-relationships of human society;
- b) tracing the origin and evolution of humanity through the study of changing characteristics and cultural and social institutions;
- c) tracing the development of humanity through the material remains of its past, such as dwellings, temples, tools, pottery, coins, weapons, or sculpture;
- d) studying physical and climatic aspects of areas and regions, and correlating these findings with economic, social and cultural activities;
- e) developing theories, models and methods to interpret and describe social phenomena;
- f) evaluating the outcome of political decisions concerning social policy;
- g) analyzing and evaluating social data;
- h) advising on the practical application of findings in the formulation of economic and social policies for population groups and regions, and for the development of markets; and
- i) preparing scholarly papers and reports.

**Examples:**

Anthropologist  
Archaeologist  
Ethnologist

Geographer  
Sociologist

**2633 PHILOSOPHERS, HISTORIANS AND POLITICAL SCIENTISTS**

Philosophers, historians and political scientists conduct research into the nature of human experience and existence, phases or aspects of human history, and political structures, movements and behavior. They document and report on findings to inform and guide political and individual actions.

Their tasks include:

- a) researching, mostly by reasoning, into the general causes, principles and meanings of the world, human actions, experience and existence, and interpreting and developing philosophical concepts and theories;
- b) consulting and comparing primary sources, such as original or contemporary records of past events, and secondary sources such as archaeological or anthropological findings;
- c) extracting relevant material, checking its authenticity, and researching into and describing the history of a particular period, country or region, or a particular facet - for example economic, social or political - of its history;
- d) conducting research in such fields as political philosophy, or past and present theory and practice of political systems, institutions or behavior;
- e) observing contemporary political institutions and opinions, collecting data on them from various sources, including interviews with government and political party officials and other relevant persons;
- f) developing theories, models and methods to interpret and describe the nature of human experience and historical and political events and behavior ;
- g) presenting findings and conclusions for publication or use by government, political parties or other organizations and interested persons; and
- h) preparing scholarly papers and reports.

**Examples:**

Genealogist  
Historian  
Philosopher

Political analyst  
Political scientist

**2634 PSYCHOLOGISTS**

Psychologists research into and study the mental processes and behavior of human beings as individuals or in groups, and apply this knowledge to promote personal, social, educational or occupational adjustment and development.

Their tasks include:

- a) planning and carrying out tests to measure mental, physical and other characteristics such as intelligence, abilities, aptitudes, potentialities, etc., interpreting and evaluating results, and providing advice;
- b) analyzing the effect of heredity, social, occupational and other factors on individual thought and behavior;
- c) conducting counselling or therapeutic interviews with individuals and groups, and providing follow-up services;
- d) maintaining required contacts, such as those with family members, educational authorities or employers, and recommending possible solutions to, and treatment of, problems;
- e) studying psychological factors in the diagnosis, treatment and prevention of mental illnesses and emotional or personality disorders, and conferring with related professionals;
- f) preparing scholarly papers and reports;
- g) formulating achievement, diagnostic and predictive tests for use by teachers in planning methods and content of instruction;
- h) conducting surveys and research studies on job design, work groups, morale,



motivation, supervision and management; and

- i) developing theories, models and methods to interpret and describe human behavior.

**Examples:**

Clinical psychologist	Psychometrician
Educational psychologist	Psychologist
Organizational psychologist	Psychotherapist
Sports psychologist	

**2635 SOCIAL WORK AND COUNSELLING PROFESSIONALS**

Social work and counselling professionals provide advice and guidance to individuals, families, groups, communities and organizations in response to social and personal difficulties. They assist clients to develop skills and access resources and support services needed to respond to issues arising from unemployment, poverty, disability, addiction, criminal and delinquent behavior, marital and other problems.

Their tasks include:

- a) interviewing clients individually, in families, or in groups, to assess their situation and problems and determine the types of services required;
- b) analyzing the client's situation and presenting alternative approaches to resolving problems;
- c) compiling case records or reports for courts and other legal proceedings;
- d) providing counselling, therapy and mediation services and facilitating group sessions to assist clients to develop skills and insights needed to deal with and resolve their social and personal problems;
- e) planning and implementing programs of assistance for clients including crisis intervention and referral to agencies that provide financial assistance, legal aid, housing, medical treatment and other services;
- f) investigating cases of abuse or neglect and taking action to protect children and other at risk persons;
- g) working with offenders during and after sentence, to help them to integrate into the community and to change attitudes and behavior in order to reduce further offending;
- h) providing advice to prison governors and to probation and parole review boards that help determine whether, and under what conditions, an offender should be incarcerated, released from prison or undergo alternative correctional measures;
- i) acting as advocates for client groups in the community and lobbying for solutions to problems affecting them;
- j) developing prevention and intervention programs to meet community needs; and
- k) maintaining contact with other social service agencies, educational institutions and health care providers involved with clients to provide information and obtain feedback on clients' overall situation and progress.

**Examples:**

Addictions counsellor	Marriage counsellor
Bereavement counsellor	Parole officer
Child and youth counsellor	Probation officer
Community relations officer	Social welfare officer
Counselling professionals	Social worker
Family caseworker	Women's welfare organizer
Family counsellor	

**2636 RELIGIOUS PROFESSIONALS**

Religious professionals function as perpetrators of sacred traditions, practices and beliefs. They conduct religious services, celebrate or administer the rites of a religious faith or denomination, provide spiritual and moral guidance and perform other functions associated with the practice of a religion.

Their tasks include:

- a) perpetuating sacred traditions, practices and beliefs;
- b) conducting religious services, rites and ceremonies;
- c) undertaking various administrative and social duties, including participating in committees and meetings of religious organizations;
- d) providing spiritual and moral guidance in accordance with the religion professed;
- e) propagating religious doctrines in own country or abroad;
- f) preparing religious sermons and preachings;
- g) developing and directing study courses and religious education programmes;
- h) counselling individuals regarding interpersonal, health, financial, and religious problems; and
- i) scheduling and participating in special events such as camps, conferences, seminars, and retreats.

**Examples:**

Rabbi	Missionaries
Chaplain	Pastor
Imam	Priest
Religion minister	

**264 AUTHORS, JOURNALISTS AND LINGUISTS**

Authors, journalists and linguists conceive and create literary works, interpret and communicate news and public affairs through the media and translate or interpret from one language into another.

Tasks performed usually include: writing literary works; appraising merits of literary and other works of art; collecting information about current affairs and writing about them; researching, investigating, interpreting and communicating news and public affairs through newspapers, television, radio and other media; translating written material from one language to another; simultaneously translating from one language to another.

**2641 AUTHORS AND RELATED WRITERS**

Authors and related writers plan, research and write books, scripts, storyboards, plays, essays, speeches, manuals, specifications and other non-journalistic articles (excluding material for newspapers, magazines and other periodicals) for publication or presentation.

Their tasks include:

- a) conceiving, writing and editing novels, plays, scripts, poetry and other material for publication or presentation;
- b) conducting research to establish factual content and to obtain other necessary information;
- c) writing scripts and continuities and preparing programmes for stage, film, radio and television productions;
- d) analyzing material, such as specifications, notes and drawings, and writing manuals, user guides and other documents to explain clearly and concisely the

- installation, operation and maintenance of software, electronic, mechanical and other equipment;
- e) writing brochures, handbooks and similar technical publications; and
- f) selecting material for publication, checking style, grammar and accuracy of content, arranging for any necessary revisions and checks proof copies before printing.

**Examples:**

Author	Novelist
Book editor	Playwright
Creative writer	Poet
Crossword puzzle maker	Publicity writer
Essayist	Scriptwriter
Feature writer	Speech writer
Freelance writer	Staff writer
Interactive media writer	Technical writer
Literary writer	Writer

**2642 JOURNALISTS**

Journalists research, investigate, interpret and communicate news and public affairs through newspapers, television, radio and other media.

Their tasks include:

- a) collecting local, national and international news through interviews, investigation and observation, attending public events, seeking out records, reviewing written work, attending film and stage performances;
- b) collecting, reporting and commenting on news and current affairs for publication in newspapers and periodicals, or for broadcasting by radio, television or webcast media;
- c) receiving, analyzing and verifying news and other copy for accuracy;
- d) interviewing politicians and other public figures at press conferences and on other occasions, including individual interviews recorded for radio, television or webcast media;
- e) researching and reporting on developments in specialized fields such as medicine, science and technology;
- f) writing editorials and commentaries on topics of current interest to stimulate public interest and express the views of a publication or broadcasting station;
- g) writing critical reviews of literary, musical and other artistic works based on knowledge, judgement and experience for newspapers, television, radio and other media;
- h) selecting material for publication, checking style, grammar, accuracy and legality of content and arranging for any necessary revisions;
- i) liaising with production staff in checking final proof copies immediately prior to printing; and
- j) selecting, assembling and preparing publicity material about business or other organizations for issue through press, radio, television and other media.

**Examples:**

Columnist	Managing news editor
Continuity and script editor	News analyst
Copy editor	Newspaper editor
Copywriter	Newspaper reporter
Copy reader	Sports writer
Critic	Sub editor

Editor  
Editorial Staff  
Journalist

TV/radio news reporter  
TV news producer

### 2643 TRANSLATORS, INTERPRETERS AND OTHER LINGUISTS

Translators, interpreters and other linguists translate or interpret from one language into another and study the origin, development and structure of languages.

Their tasks include:

- a) studying relationships between ancient parent languages and modern language groups, tracing the origin and evolution of words, grammar and language forms, and presenting findings;
- b) advising on or preparing language classification systems, grammars, dictionaries and similar materials;
- c) translating from one language into another and ensuring that the correct meaning of the original is retained, that legal, technical or scientific works are correctly rendered, and that the phraseology and terminology of the spirit and style of literary works are conveyed as far as possible;
- d) developing methods for the use of computers and other instruments to improve productivity and quality of translation; and
- e) interpreting from a spoken or a signed language into another spoken or signed language, in particular at conferences, meetings and similar occasions, and ensuring that the correct meaning and, as far as possible, the spirit of the original are transmitted; and
- f) revising and correcting translated material.

#### Examples:

Interpreter  
Lexicographer  
Philologist  
Sign language interpreter

Subtitled  
Translator  
Translator reviser

### 265 CREATIVE AND PERFORMING ARTISTS

Creative and performing artists communicate ideas, impressions and facts in a wide range of media to achieve particular effects; interpret a composition such as a musical score or a script to perform or direct the performance; and host the presentation of such performance and other media events.

Tasks performed usually include: conceiving and creating visual art forms; conceiving and writing original music; devising, directing, rehearsing and performing in music, dance, theatrical and film productions; assuming creative, financial and organizational responsibilities in the production of television programmes, films, and stage presentations; studying script, play or book and preparing and rehearsing interpretation; selecting and introducing music, videos and other entertainment material for broadcast and making commercial and public service announcements.

#### 2651 VISUAL ARTISTS

Visual artists create and execute works of art by sculpting, painting, drawing, creating cartoons, engraving or using other techniques.

Their tasks include:

- a) conceiving and developing ideas, designs and styles for paintings, drawings and sculptures;
- b) arranging objects, positioning models, and selecting landscapes and other visual forms according to chosen subject matter;

- c) selecting artistic media, method and materials;
- d) creating representational or abstract three-dimensional or relief forms by shaping, carving and working and combining materials such as, wood, stone, clay, metal, ice or paper;
- e) creating representational or abstract drawings and paintings using pencils, ink, chalk, oil paints, water colors or through the application of other techniques;
- f) creating drawings and engraving or etching them on metal, wood, or other materials;
- g) creating cartoons to depict persons and events, often in caricature; and
- h) restoring damaged, soiled and faded paintings and other art objects.

**Examples:**

Artistic painter	Painting restorer
Cartoonist	Picture restorer
Ceramic artist	Portrait painter
Commercial artist	Sculptor
Engraver and etcher (Artistics)	Other Creative or Performing Artists
Forensic/sketch artist	

**2652 MUSICIANS, SINGERS AND COMPOSERS**

Musicians, singers and composers write, arrange, conduct and perform musical compositions.

Their tasks include:

- a) creating melodic, harmonic and rhythmic structures to express ideas and emotions in musical form;
- b) translating ideas and concepts into standard musical signs and symbols for reproduction and performance;
- c) adapting or arranging music for particular instrumental or vocal groups, instruments or occasions;
- d) conducting instrumental or vocal groups;
- e) selecting music for performances and assigning instrumental parts to musicians;
- f) playing one or more musical instruments as a soloist or as a member of an orchestra or a musical group;
- g) singing as soloists or members of vocal groups or other bands; and
- h) practicing and rehearsing to maintain a high standard of performance.

**Examples:**

Band leader	Night club musician
Bass player	Night club singer
Choral group singer	Orchestra conductor
Concert artist	Orchestra director
Concertmaster	Pianist
Drummer	Recital coordinator
Flutist	Recording artist
Guitarist	Saxophone player
Instrumentalist	Singer
Keyboard player	Street musician
Lyricist	Street singer
Music composer	Trumpet player
Music conductor	Violinist
Musical arranger	Vocal group conductor
Musical director	Vocalist
Musician	

**2653 DANCERS AND CHOREOGRAPHERS**

Dancers and choreographers conceive and create or perform dances.

Their tasks include:

- a) conceiving and creating dances, which often convey a story, theme, idea or mood, by a pattern of steps, movements and gestures;
- b) performing dances as a soloist, with a partner or as a member of a dancing group before live audiences or for film, television or other visual media;
- c) training, exercising and attending dance classes to maintain the required levels of ability and fitness;
- d) directing and participating in rehearsals to practice dance steps and techniques required for a performance;
- e) auditioning for dance roles or for memberships in dance companies; and
- f) coordinating the production music with the music directors.

**Examples:**

Ballet/Belly dancer  
Choreographer  
Cultural dancer

Night club dancer  
Professional dancer  
Street dancer

**2654 FILM, STAGE AND RELATED DIRECTORS AND PRODUCERS**

Film, stage and related directors and producers oversee and control the technical and artistic aspects of motion pictures, television or radio productions and stage shows.

Their tasks include:

- a) choosing writers, studying scripts to determine artistic interpretation, and instructing actors on acting methods;
- b) directing all aspects of dramatic productions on stage, television, radio or in motion pictures, including choice of actors, and final decisions concerning costumes, set designs, sound or lighting effects;
- c) planning, organizing and controlling the various stages and scheduling involved in the production of presentations, motion pictures, television shows and radio programs;
- d) engaging and supervising all technical personnel, and determining the treatment, scope and scheduling of production;
- e) maintaining production archives and negotiating royalties;
- f) creating, planning, writing scripts for recording, videotaping and editing programs; and
- g) supervising the positioning of scenery, props and lighting and sound equipment.

**Examples:**

Choir director  
Cinematographer  
Director (Stage, Theater, Motion picture,  
& Radio)  
Director of photography  
Documentary director

Film editor  
Motion picture director  
Stage director  
Theatre producer  
Technical television or radio director

**2655 ACTORS**

Actors portray roles in motion pictures, television or radio productions and stage shows.

Their tasks include:

- a) learning lines and cues and playing parts in dramatic productions on stage, commercials, television, radio or in motion pictures;
- b) assuming characters created by a playwright or author and communicating this

to an audience;

- c) telling stories or reading literary works aloud to educate or entertain listeners;
- d) attending auditions and casting calls in order to audition for roles;
- e) preparing for performances through rehearsals under the instruction and guidance of production directors;
- f) reading scripts and undertaking research to gain understanding of parts, themes and characteristics; and
- g) acting parts and portraying roles as developed in rehearsals in film, television, radio and stage productions.

**Examples:**

Actor/Actress ( Stage, Theater, Motion picture & Radio)	Dubber Radio or television Story teller
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**2656 ANNOUNCERS ON RADIO, TELEVISION AND OTHER MEDIA**

Announcers on radio, television and other media read news bulletins, conduct interviews, and make other announcements or introductions on radio, television, and in theatres and other establishments or media.

Their tasks include:

- a) reading news bulletins and making other announcements on radio or television;
- b) introducing performing artists or persons being interviewed, and making related announcements on radio, television, or in theatres, night-clubs and other establishments;
- c) interviewing persons in public, especially on radio and television;
- d) studying background information in order to prepare for programs or interviews; and
- e) commenting on music and other matters , such as weather or traffic conditions.

**Examples:**

Announcer, radio/television	Media interviewer
Commentator, radio/television	News anchor
Compere' (Emcee, Show Host)	News correspondent/reporter
Disc/Video Jockey	Sports announcer
Field reporter	

**2659 CREATIVE AND PERFORMING ARTISTS NOT ELSEWHERE CLASSIFIED**

This unit group covers all creative and performing artists not classified elsewhere in minor group 265, Creative and performing artists. For instance, the group includes clowns, magicians, acrobats and other performing artists.

Their tasks include:

- a) performing amusing antics and telling funny stories;
- b) performing tricks of illusion and sleight of hand, and feats of hypnotism;
- c) performing difficult and spectacular acrobatics, and gymnastic or juggling feats;
- d) training and performing with animals.

**Examples:**

Acrobat	Mascot
Aerialist	Puppeteer
Clown	Stand-up comedian
Hypnotist	Ventriloquist
Magician	

## **MAJOR GROUP 3**

### **TECHNICIANS AND ASSOCIATE PROFESSIONALS**

Technicians and associate professionals perform mostly technical and related tasks connected with research and the application of scientific or artistic concepts and operational methods, and government or business regulations. Most occupations in this major group require skills at the third ISCO skill level.

Tasks performed by technicians and associate professionals usually include: undertaking and carrying out technical work connected with research and the application of concepts and operational methods in the fields of physical sciences including engineering and technology, life sciences including the medical profession, and social sciences and humanities; initiating and carrying out various technical services related to trade, finance, administration, including administration of government laws and regulations, and to social work; providing technical support for the arts and entertainment; participating in sporting activities; executing some religious tasks. Supervision of other workers may be included.

#### **31 SCIENCE AND ENGINEERING ASSOCIATE PROFESSIONALS**

Science and engineering associate professionals perform technical tasks connected with research and operational methods in science and engineering. They supervise and control technical and operational aspects of mining, manufacturing, construction and other engineering operations, and operate technical equipment including aircraft and ships.

Tasks performed by workers in this sub-major group usually include: setting up, monitoring and operating instruments and equipment, conducting and monitoring experiments and tests of systems; collecting and testing samples; recording observations and analyzing data; preparing, revising and interpreting technical drawings and diagrams; coordinating, supervising, controlling and scheduling the activities of other workers; operating and monitoring switchboards, computerized control systems, and multi-function process control machinery; perform technical functions to ensure safe and efficient movement and operations ships aircraft and other equipment.

##### **311 PHYSICAL AND ENGINEERING SCIENCE TECHNICIANS**

Physical and engineering science technicians perform technical tasks to aid in research on and the practical application of concepts, principles and operational methods particular to physical sciences including such areas as engineering, technical drawing or economic efficiency of production processes.

Tasks performed usually include: undertaking and carrying out technical work related to chemistry, physics, geology, meteorology, astronomy, engineering, or technical drawing; setting up, operating, and maintaining laboratory instruments and equipment, monitoring experiments, making observations, and calculating and recording results; preparing materials for experimentation; conducting tests of systems; collecting and testing samples; recording observations and analyzing data; preparing, revising and interpreting technical drawings, wiring diagrams, circuit board assembly diagrams, or layout drawings.

##### **3111 CHEMICAL AND PHYSICAL SCIENCE TECHNICIANS**

Chemical and physical science technicians perform technical tasks to aid in research in chemistry, physics, geology, geophysics, meteorology and astronomy, and in the development of industrial, medical, military and other practical applications of research results.

Their tasks include:

- a) collecting samples and preparing materials and equipment for experiments, tests and analyses;



- b) carrying out routine laboratory tests and performing a variety of technical support functions to assist chemical and physical scientists in research, development, analysis and testing;
- c) controlling the quality and quantity of laboratory supplies by testing samples and monitoring usage and preparing detailed estimates of quantities and costs of materials and labor required for projects, according to the specifications given;
- d) setting up, operating, and maintaining laboratory instruments and equipment, monitoring experiments, making observations, and calculating and recording results;
- e) preparing materials for experimentation such as freezing and slicing specimens and mixing chemicals; and
- f) collecting and testing earth and water samples, recording observations and analyzing data in support of geologists or geophysicists.

**Examples:**

Chemistry technician  
Geology technician

Meteorology technician  
Physics technician

**3112 CIVIL ENGINEERING TECHNICIANS**

Civil engineering technicians perform technical tasks in civil engineering research, design, construction, operation, maintenance and repair of buildings and other structures, such as water supply and wastewater treatment systems, bridges, roads, dams and airports.

Their tasks include:

- a) performing or assisting with field and laboratory tests of soils and construction materials;
- b) providing technical assistance connected with the construction of buildings and other structures, and with surveys or the preparation of survey reports;
- c) ensuring compliance with design specifications, relevant legislation and regulations, and maintenance of desired standards of materials and work;
- d) applying technical knowledge of building and civil engineering principles and practices in order to identify and solve problems arising;
- e) assisting with the preparation of detailed estimates of quantities and costs of materials and labor required for projects, according to the specifications given;
- f) organizing maintenance and repairs;
- g) inspecting buildings and structures during and after construction to ensure that they comply with building, grading, zoning and safety laws and approved plans, specifications and standards, as well as with other rules concerning quality and safety of buildings;
- h) inspecting industrial plant, hotels, cinemas and other buildings and structures to detect fire hazards and advise on how they can be removed; and
- i) advising on the installation of fire detectors and sprinkler systems and the use of materials in the construction of buildings and means of transportation to reduce risk of fire and extent of damage and danger if fire occurs.

**Examples:**

Building inspector  
Civil engineering technician  
Clerk of works  
Fire inspector

Fire prevention specialist  
Geotechnical technician  
Surveying technician  
Building Surveyor

**3113 ELECTRICAL ENGINEERING TECHNICIANS**

Electrical engineering technicians perform technical tasks to aid in electrical engineering research, and in the design, manufacture, assembly, construction, operation, maintenance and repair of electrical equipment, facilities and distribution systems.

Their tasks include:

- a) providing technical assistance in research on and development of electrical equipment and facilities, or testing prototypes;
- b) designing and preparing blueprints of electrical installations and circuitry according to the specifications given;
- c) preparing detailed estimates of quantities and costs of materials and labor required for manufacture and installation according to the specifications given;
- d) monitoring technical aspects of the manufacture, installation, utilization, maintenance and repair of electrical systems and equipment to ensure satisfactory performance and compliance with specifications and regulations;
- e) planning installation methods, checking completed installation for safety and controls or undertaking the initial running of the new electrical equipment or systems; and
- f) assembling, installing, testing, calibrating, modifying and repairing electrical equipment and installations to conform with regulations and safety requirements.

**Examples:**

Airconditioning technician	Gas turbine system technician (electrical)
Electric power transmission engineering technician	Heating and ventilation technician
Electrical engineering technician	Refrigeration technician
Electrical engineering technician (high voltage)	

**3114 ELECTRONICS ENGINEERING TECHNICIANS**

Electronics engineering technicians perform technical tasks to aid in electronic research, and in the design, manufacture, assembly, construction, operation, maintenance and repair of electronic equipment.

Their tasks include:

- a) providing technical assistance in research and development of electronic equipment, or testing prototypes;
- b) designing and preparing blueprints of electronic circuitry according to the specifications given;
- c) preparing detailed estimates of quantities and costs of materials and labor required for the manufacture and installation of electronic equipment, according to the specifications given;
- d) monitoring technical aspects of the manufacture, utilization, maintenance and repair of electronic equipment to ensure satisfactory performance and ensure compliance with specifications and regulations;
- e) assisting in the design, development, installation, operation and maintenance of electronic systems;
- f) planning installation methods, checking completed installation for safety and controls or undertaking the initial running of the new electronic equipment or system; and
- g) conducting tests of electronic systems, collecting and analyzing data, and assembling circuitry in support of electronics engineers.

**Examples:**

Audio visual systems technician	Instrumentation and control technician
Broadcast operations technician	Line technician
CCTV/evidence custodian	Magnetic recorder operator
Electronic equipment operator	Satellite communication engineering technician
Electronic system technician	Telephone technician
Electronics and communication equipment technician	Other optical and electronic equipment operators
Electronics engineering technicians	

**3115 MECHANICAL ENGINEERING TECHNICIANS**

Mechanical engineering technicians perform technical tasks to aid in mechanical engineering research, and in the design, manufacture, assembly, construction, operation, maintenance and repair of machines, components and mechanical equipment.

Their tasks include:

- a) providing technical assistance in research on and development of machines and mechanical installations, facilities and components, or testing prototypes;
- b) designing and preparing layouts of machines and mechanical installations, facilities and components according to the specifications given;
- c) preparing detailed estimates of quantities and costs of materials and labor required for manufacture and installation according to the specifications given;
- d) monitoring technical aspects of manufacture, utilization, maintenance and repair of machines and mechanical installations, facilities and components to ensure satisfactory performance and compliance with specifications and regulations;
- e) developing and monitoring the implementation of safety standards and procedures for marine survey work in relation to ships' hulls, equipment and cargoes;
- f) assembling and installing new and modified mechanical assemblies, components, machine tools and controls, and hydraulic power systems;
- g) conducting tests of mechanical systems, collecting and analyzing data, and assembling and installing mechanical assemblies in support of mechanical engineers; and
- h) ensuring that mechanical engineering designs and finished work are within specifications, regulations and contract provisions.

**Examples:**

Aeronautics engineering technician	Marine engineering technician
Aircraft maintenance technician	Mechanical engineering estimator
Auto service technician	Mechanical engineering technician
Boiler technician	Maintenance technician
Elevator technician	Power plant technician
Gas turbine system technician (mechanical)	Mechanical planner and scheduler
Industrial machinery and tools technician	Marine Surveyor

**3116 CHEMICAL ENGINEERING TECHNICIANS**

Chemical engineering technicians perform technical tasks to aid in chemical engineering research, and in the design, manufacture, construction, operation, maintenance and repair of chemical plant.

Their tasks include:

- a) assisting in research on and development of industrial chemical processes, plant and equipment, or testing prototypes;

- b) designing and preparing layouts of chemical plants according to the specifications given;
- c) preparing detailed estimates of quantities and costs of materials and labor required for manufacture and installation according to the specifications given;
- d) monitoring technical aspects of the construction, installation, operation, maintenance and repair of chemical plants to ensure satisfactory performance and compliance with specifications and regulations; and
- e) conducting chemical and physical laboratory tests to assist scientists and engineers in making qualitative and quantitative analyses of solids, liquids, and gaseous materials.

**Examples:**

Chemical engineering estimator  
 Chemical engineering technician  
 Chemical laboratory technician

Nuclear engineering technician  
 Petroleum engineering technician

**3117 MINING AND METALLURGICAL TECHNICIANS**

Mining and metallurgical technicians perform technical tasks to assist in research and experiments related to metallurgy, in improving methods of extracting solid minerals, oil and gas, and in the design, construction, operation, maintenance and repair of mines and mine installations, of systems for transporting and storing oil and natural gas, and for extraction of metals from ores.

Their tasks include:

- a) providing technical assistance to aid in research on and development of processes to determine the properties of metals and new alloys;
- b) providing technical assistance in geological and topographical surveys, and in the design and layout of oil, natural gas and mineral ore extraction and transportation systems, and processing and refining plants for minerals and metals;
- c) preparing detailed estimates of quantities and costs of materials and labor required for mineral, oil and natural gas exploration, extraction, processing and transport projects;
- d) monitoring technical, regulatory and safety aspects of the construction, installation, operation, maintenance and repair of mineral ore, oil and natural gas exploration, extraction, transport and storage installations and of mineral processing plants;
- e) helping plan and design mines, mine shafts, tunnels and underground first-aid facilities;
- f) collecting and preparing rock, mineral and metal samples, performing laboratory tests to determine properties, analyzing and reporting test results and maintaining testing equipment;
- g) using microscopes, electromagnetic irradiation machines, spectrometers, spectrographs, densitometers and tension testing machines; and
- h) assisting scientists in the use of electrical, sonic, or nuclear measuring instruments in both laboratory and production activities to obtain data indicating potential sources of metallic ore, gas, or petroleum.

**Examples:**

Extractive engineering technician  
 Metallurgical technician  
 Metals technologist  
 Mines inspector  
 Mining engineering technician

Oil and gas wells acidizer  
 Petroleum and natural gas extraction technician  
 Physical metallurgy technician  
 Mine safety inspector

**3118 DRAFTSMEN**

Draftsmen prepare technical drawings, maps and illustrations from sketches, measurements and other data, and copy final drawings and paintings on to printing plates.

Their tasks include:

- a) preparing and revising working drawings from sketches and specifications prepared by engineers and designers for the manufacture, installation and erection of machinery and equipment or for the construction, modification, maintenance and repair of buildings, dams, bridges, roads and other architectural and civil engineering projects;
- b) operating computer-aided design and drafting equipment to create, modify and generate hard-copy and digital representations of working drawings;
- c) operating digitizing table or similar equipment to transfer hard-copy representation of working drawings, maps and other curves to digital form;
- d) preparing and revising illustrations for reference works, brochures and technical manuals dealing with the assembly, installation, operation, maintenance and repair of machinery and other equipment and goods;
- e) copying drawings and paintings onto stone or metal plates for printing;
- f) preparing wiring diagrams, circuit board assembly diagrams, and layout drawings used for manufacture;
- g) installation, and repair of electrical equipment in factories, power plants, and buildings;
- h) creating detailed working diagrams of machinery and mechanical devices, including dimensions, fastening methods, and other engineering information; and
- i) arranging for completed drawings to be reproduced for use as working drawings.

**Examples:**

Architectural-designer	Draftsman, hydrographic
Artist-illustrator	Draftsman, mechanical
Draftsman	Draftsman, naval
Draftsman, aide	Draftsman researcher
Draftsman, architectural	Draftsman, structural
Draftsman, cartographical	Draftsman technician
Draftsman, electrical	Lithographic artist
Draftsman, engineering/civil	Technical illustrator

**3119 PHYSICAL AND ENGINEERING SCIENCE TECHNICIANS NOT ELSEWHERE CLASSIFIED**

This unit group covers physical and engineering science technicians not classified elsewhere in Minor group 311, Physical and engineering science technicians. For instance, the group includes those who assist scientists and engineers engaged in developing procedures or conducting research on safety, biomedical, environmental or industrial and production engineering.

Their tasks include:

- a) collecting data and providing technical assistance regarding: efficient, safe and economic utilization of personnel, material and equipment; methods of work and sequence of operations and supervision of their implementation; and efficient layout of plant or establishment;
- b) aiding in the identification of potential hazards and introducing safety procedures and devices;
- c) modifying and testing equipment and devices used in the prevention, control, and remediation of environmental pollution, site remediation, and land

- reclamation;
- d) assisting in the development of environmental pollution remediation devices under the direction of an engineer; and
- e) assisting engineers in testing and designing robotics equipment.

**Examples:**

Engineering aide	Instrument technician
Engineering technician (production)	Laboratory technician
Fire investigator	Quality control technician
Forensic science technician	Quantity surveying technician
Health physics technician	Robotics technician
Industrial efficiency technician	Test technician
In-line reviser	Time and motion study technician

**312 MINING, MANUFACTURING AND CONSTRUCTION SUPERVISORS**

Mining, manufacturing and construction supervisors coordinate, supervise, control and schedule the activities of workers in manufacturing, mining and construction operations.

Tasks performed usually include: overseeing, supervising and coordinating the activities of tradespersons, process control technicians, machine operators, assemblers, laborers and other workers; organizing and planning daily work; preparing cost estimates, records and reports; identifying shortages of staff or supplies; ensuring safety of workers; instructing and training new staff.

**3121 MINING SUPERVISORS**

Mining supervisors oversee mining and quarrying operations and directly supervise and coordinate the activities of miners working in underground and surface mines and quarries.

Their tasks include:

- a) directly supervising and coordinating the activities of workers who extract minerals and other natural deposits from the earth, operate underground conveyances or heavy equipment in surface mines and quarries;
- b) establishing methods to meet work schedules and recommending measures to mining managers to improve productivity;
- c) working with managerial and technical personnel, other departments and contractors to resolve operational problems and coordinate activities;
- d) providing reports and other information to mining managers about all aspects of mining or quarrying operations; and
- e) determining staffing and material needs for the mine or quarry.

**Examples:**

Mine deputy	Mine under-manager
Mine supervisor	Quarry supervisor

**3122 MANUFACTURING SUPERVISORS**

Manufacturing supervisors coordinate and supervise the activities of process control technicians, machine operators, assemblers, and other manufacturing laborers.

Their tasks include:

- a) coordinating and supervising the activities of process control technicians, machine operators, assemblers, and other manufacturing laborers;
- b) organizing and planning the daily work with regard to plans, economy, staff and environment;

- c) preparing cost estimates, records and reports;
- d) identifying shortage of staff or components;
- e) ensuring safety of workers; and
- f) instructing and training new staff.

**Examples:**

Area coordinator, manufacturing  
 Assembly supervisor  
 Finishing supervisor

Foreman/woman, assembly  
 Production supervisor, manufacturing  
 Lubrication supervisor

**3123 CONSTRUCTION SUPERVISORS**

Construction supervisors coordinate, supervise and schedule the activities of workers engaged in the construction and repair of buildings and structures.

Their tasks include:

- a) reading specifications to determine construction requirements and planning procedures;
- b) organizing and coordinating the material and human resources required to complete jobs;
- c) examining and inspecting work progress;
- d) examining equipment and construction sites to ensure that health and safety requirements are met;
- e) supervising construction sites and coordinating work with other construction projects; and
- f) supervising the activities of building trades workers, laborers and other construction workers.

**Examples:**

Building construction supervisor  
 Site manager, construction

**313 PROCESS CONTROL TECHNICIANS**

Process control technicians operate and monitor switchboards, computerized control systems, multi-function process control machinery and maintain processing units in electrical power generation and distribution, wastewater, sewage treatment and waste disposal plants, chemical, petroleum and natural gas refineries in metal processing and other multiple process operations.

Tasks performed usually include: operating electronic or computerized control panel from a central control room to monitor and optimize processes; controlling process start-up and shut-down; operating and monitoring switchboards and related equipment; monitoring and inspecting equipment and systems to detect malfunctions; taking readings from charts, meters and gauges at established intervals; troubleshooting and take corrective action as necessary; maintaining records, logs and reports; communicating with other personnel to assess equipment operating status; cleaning and maintaining equipment; supervising plant and machine operators and other workers.

**3131 POWER PRODUCTION PLANT OPERATORS**

Power production plant operators operate, monitor and maintain switchboards and related equipment in electrical control centers which control the production and distribution of electric or other power in transmission networks. The equipment operated includes reactors, turbines, generators and other auxiliary equipment in electrical power generating stations.

Their tasks include:

- a) operating, monitoring and inspecting various types of energy generating power plants;
- b) operating and controlling power generating systems and equipment including boilers, turbines, generators, condensers, and reactors in hydro, thermal, coal, oil, natural gas, and nuclear power plants to generate and distribute electrical power;
- c) controlling start-up and shut-down of power plant equipment, controlling switching operations, regulating water levels and communicating with systems operators to regulate and coordinate transmission loads, frequency and line voltages;
- d) taking readings from charts, meters and gauges at established intervals, troubleshooting and performing corrective action as necessary;
- e) completing and maintaining station records, logs and reports, and communicating with other plant personnel to assess equipment operating status; and
- f) cleaning and maintaining equipment such as generators, boilers, turbines, pumps, and compressors in order to prevent equipment failure or deterioration.

**Examples:**

Distribution control operator

Nuclear power plant operator

Electric plant operator

Power system operator

Generating station operator

Solar power plant operator

Hydroelectric power plant operator

### 3132 INCINERATOR AND WATER TREATMENT PLANT OPERATORS

Incinerator and water treatment plant operators monitor and operate computerized control systems and related equipment in solid and liquid waste treatment plants to regulate the treatment and disposal of sewage and wastes, and in water filtration and treatment plants to regulate the treatment and distribution of water.

Their tasks include:

- a) operating and monitoring computerized control systems, machinery and related equipment in wastewater treatment, sewage treatment, and liquid waste plants to regulate flow, treatment and disposal of sewage and wastes, and in water filtration and treatment plants to regulate the treatment and distribution of water for human consumption and for later disposal into natural water systems;
- b) controlling the operation of multiple-hearth incinerator furnaces and related equipment to burn sludge and solid waste in waste treatment plants;
- c) inspecting equipment and monitoring operating conditions, meters, filters, chlorinators, and gauges in central control room to determine load requirements, to verify that flows, pressures, and temperatures are within specification, and to detect malfunctions;
- d) monitoring and adjusting controls of auxiliary equipment, such as exhaust emissions, scrubbers, and incinerator heat recovery units;
- e) collecting and testing water and sewage samples for chemical and bacterial content, using test equipment and color analysis standards;
- f) analyzing test results to make adjustments to plant equipment and systems to disinfect and deodorize water and other liquids;
- g) performing security and safety checks in plant and on grounds; and
- h) completing and maintaining plant logs and reports.

**Examples:**

Incinerator operator

Waste water operator

Liquid waste process operator

Water treatment plant operator



Pumping-station operator  
Sewage plant operator

Waterworks technician

### 3133 CHEMICAL PROCESSING PLANT CONTROLLERS

Chemical processing plant controllers operate and monitor chemical plants and adjust and maintain, processing units and equipment which distil, filter, separate, heat or refine chemicals.

Their tasks include:

- a) operating electronic or computerized control panel from a central control room to monitor and optimize physical and chemical processes for several processing units;
- b) adjusting equipment, valves, pumps, controls and process equipment;
- c) controlling the preparation, measuring and feeding of raw materials and processing agents such as catalysts and filtering media into plant;
- d) controlling process start-up and shut-down, troubleshooting and monitoring outside process equipment;
- e) verifying equipment for malfunctions, carrying out routine operating tests and arranging for maintenance; and
- f) analyzing sample products, performing tests, recording data and writing production logs.

#### Examples:

Chemical process technician  
Chemical-filtering and separating  
equipment operator  
Chemical-still and reactor operator

Chemical-heat-treating-plant operator  
Chemical processing plant controllers

### 3134 PETROLEUM AND NATURAL GAS REFINING PLANT OPERATORS

Petroleum and natural gas refining plant operators operate and monitor plants and adjust and maintain processing units and equipment which refine, distil and treat petroleum, petroleum-based products and by-products, or natural gas.

Their tasks include:

- a) operating electronic or computerized control panel from a central control room to monitor and optimize physical and chemical processes for several processing units;
- b) adjusting equipment, valves, pumps, controls and process equipment;
- c) controlling process start-up and shut-down, troubleshooting and monitoring outside process equipment;
- d) verifying equipment for malfunctions, testing well pipes for leaks and fractures and arranging for maintenance; and
- e) analyzing sample products, performing tests, recording data and writing production logs.

#### Examples:

Gas plant operator  
Blender/petroleum and natural gas  
refining (ethyl) operator  
Paraffin plant operator

Still/petroleum and natural gas refining  
operator  
Petroleum process operator  
Refinery process technician

**3135 METAL PRODUCTION PROCESS CONTROLLERS**

Metal production process controllers operate and monitor multi-function process control machinery and equipment to control the processing of metal converting and refining furnaces, metal-rolling mills, metal heat-treating, or metal-extrusion plant.

Their tasks include:

- a) coordinating and monitoring the operation of a particular aspect of metal processing production through control panels, computer terminals or other control systems, usually from a central control room;
- b) operating multi-function central process control machinery to grind, separate, filter, melt, roast, treat, refine or otherwise process metals;
- c) observing computer printouts, video monitors and gauges to verify specified processing conditions and to make necessary adjustments;
- d) coordinating and supervising production crew such as machine and process operators, assistants and helpers;
- e) starting up and shutting down the production system in cases of emergency or as required by schedule;
- f) providing and organizing training for members of production crew; and
- g) maintaining shift log of production and other data and preparing production and other reports.

**Examples:**

Blast furnace operator

Casting metal machine operator

Central control caster

Melting/metal, furnace operator

Metal processing control operator

Rolling mill control operator

**3139 PROCESS CONTROL TECHNICIANS NOT ELSEWHERE CLASSIFIED**

This unit group covers process control technicians not classified elsewhere in minor group 313 Process control technicians. For instance, the group includes those who operate multiple process control equipment in manufacturing assembly lines and paper and pulp production.

**Examples:**

Automated assembly line operator

Industrial robot controller

Paper pulp refinery operator

Production operator

**314 LIFE SCIENCE TECHNICIANS AND RELATED ASSOCIATE PROFESSIONALS**

Life science technicians and related associate professionals perform a variety of technical tasks to support life science professionals with their research, development, management, conservation and protection work, in areas such as biology, botany, zoology, biotechnology and biochemistry, and to agriculture, fisheries and forestry.

Tasks performed usually include: conducting tests, experiments, laboratory analyzes, field research and surveys to collect information using accepted scientific methods; keeping records; assisting in analyzing data and preparing reports; operating and maintaining equipment.

**3141 LIFE SCIENCE TECHNICIANS (excluding medical)**

Life science technicians (except medical) provide technical support to life science professionals undertaking research, analysis and testing of living organisms, and development and application of products and processes resulting from research in areas such as natural resource management, environmental protection, plant and animal biology, microbiology, and cell and molecular biology.

Their tasks include:

- a) assisting in designing, setting up and conducting experiments;
- b) setting up, calibrating, operating and maintaining laboratory instruments and equipment;
- c) collecting and preparing specimens and samples, chemical solutions and slides and growing cultures for use in experiments;
- d) performing routine field and laboratory tests;
- e) monitoring experiments to ensure adherence to correct laboratory quality control procedures and health and safety guidelines;
- f) making observations of tests, and analyzing, calculating, recording and reporting test results using appropriate scientific methods;
- g) preserving, classifying and cataloguing specimens and samples;
- h) keeping detailed logs of work performed;
- i) using computers to develop models and analyze data;
- j) using complex and high-powered equipment to perform work;
- k) participating in the research, development and manufacture of products and processes;
- l) ordering and stocking laboratory supplies; and
- m) maintaining relevant databases.

**Examples:**

Bacteriology technician  
 Biochemistry technician  
 Herbarium technician  
 Life science technician

Pharmacology technician  
 Serology technician  
 Tissue culture technician  
 Zoology technician

**3142 AGRICULTURAL TECHNICIANS**

Agricultural technicians perform tests and experiments, and provide technical and scientific support to agricultural scientists, farmers and farm managers.

Their tasks include:

- a) preparing materials and equipment for experiments, tests and analyses;
- b) collecting and preparing specimens such as soils, plant or animal cells, tissues or parts or animal organs for experiments, tests and analyses;
- c) assisting with and performing experiments, tests and analyses applying methods and techniques such as microscopy, histochemistry, chromatography, electrophoresis and spectroscopy;
- d) identifying pathogenic micro-organisms and insects, parasites, fungi and weeds harmful to crops and livestock, and assisting in devising methods of control;
- e) analyzing produce to set and maintain standards of quality;
- f) conducting or supervising operational programs such as fish hatchery, greenhouse and livestock production programs;
- g) analyzing samples of seeds for quality, purity and germination rating;
- h) collecting data and estimating quantities and costs of materials and labor required for projects; and
- i) organizing maintenance and repairs of research equipment.

**Examples:**

Agricultural products inspector  
 Agricultural technician  
 Agronomy technician  
 Animal technician  
 Aquacultural technician

Fishery technician  
 Herd tester  
 Horticultural technical officer  
 Livestock inspector  
 Orchard technician

Biological and feed products inspector	Pest control technician
Dairy technician	Plant propagation technician
Agricultural extension officer	Poultry technical officer
Farm demonstrator	Prawn farm technician
Farm technician	Rice farm technician
Fiber technician	Sugar farm technician
Field crop technical officer	Soil technician

### 3143 FORESTRY TECHNICIANS

Forestry technicians perform technical and supervisory functions in support of forestry research and forest management, harvesting, resource conservation and environmental protection.

Their tasks include:

- a) conducting forest inventories, surveys and field measurements following accepted scientific and operational procedures;
- b) assisting in and performing technical functions in the preparation of forest management and harvest plans using photogrammetric and mapping techniques and computerized information systems;
- c) assisting in planning and supervision of construction of access routes and forest roads;
- d) implementing, supervising and performing technical functions in silvicultural operations involving site preparation, planting, and tending of tree crops;
- e) coordinating activities such as timber scaling, forest fire suppression, disease or insect control or pre-commercial thinning of forest stands;
- f) supervising and performing technical functions in forest harvesting operations;
- g) ensuring adherence to regulations and policies concerning environmental protection, resource utilization, fire safety and accident prevention;
- h) supervising forest tree nursery operations;
- i) providing technical support to forestry research programs in areas such as tree improvement, seed orchard operations, insect and disease surveys or experimental forestry and forest engineering research; and
- j) preparing forest cultivation and cutting plans.

#### Examples:

Forestry technician  
Silviculture technician

### 315 SHIP AND AIRCRAFT CONTROLLERS AND TECHNICIANS

Ship and aircraft controllers and technicians command and navigate ships and aircraft, perform technical functions to ensure safe and efficient movement and operations, and develop electrical, electromechanical, and computerized air control systems.

Tasks performed usually include: controlling the operation of mechanical, electrical and electronic equipment on board ship or on aircraft, commanding and navigating ships or aircraft, directing the movements of ships or aircraft and developing electrical, electromechanical, and computerized air control systems.

### 3151 SHIP ENGINEERS

Ships' engineers control and participate in the operation, maintenance and repair of mechanical, electrical and electronic equipment and machinery on board ship, or perform related supporting functions on shore.

Their tasks include:

- a) controlling and participating in the operation, maintenance and repair of mechanical, electrical and electronic equipment and machinery on board ship;
- b) ordering fuel and other engine-room department stores and maintaining record of operations;
- c) performing technical supervision of the installation, maintenance and repair of ship's machinery and equipment to ensure compliance with specifications and regulations;
- d) inspecting and conducting maintenance and emergency repairs to engines, machinery and auxiliary equipment; and
- e) standing engine room watch, monitoring and noting performance of engines, machinery and auxiliary equipment.

**Examples:**

Engine cadet	Ship building and repair technician
Entry and exit vessels processing technician	Ship engineer
	Shipping operations inspector

**3152 SHIP'S DECK OFFICERS AND PILOTS**

Ship's deck officers and pilots command and navigate ships and similar vessels, and perform related functions on shore.

Their tasks include:

- a) commanding and navigating ship or similar vessel at sea or on inland waterways;
- b) controlling and participating in deck and bridge-watch activities;
- c) navigating vessels into and out of ports and through channels, straits and other waters where special knowledge is required;
- d) ensuring safe loading and unloading of cargo and observance of safety regulations and procedures by crew and passengers;
- e) performing technical supervision of maintenance and repair of ship to ensure compliance with specifications and regulations;
- f) applying knowledge of principles and practices relating to ship's operation and navigation in order to identify and solve problems arising in the course of their work;
- g) ordering ship's stores and recruiting crew as required and maintaining record of operations; and
- h) transmitting and receiving routine and emergency information with shore stations and other ships.

**Examples:**

Ship's master (inland waterways)	Pilot, ship
Captain, ship/sea	Quartermaster
Chief mate	Sea ship's master
Deck cadet	Shipwright appraiser
Deck superintendent	Shipping operations officer
Freight and shipping specialist	Ship's navigating officer
Harbor master	Skipper, yacht
Launch master	Tug man
Launch patron	Maritime Transport Service Supervisors
Launch service supervisor	

**3153 AIRCRAFT PILOTS AND RELATED ASSOCIATE PROFESSIONALS**

Aircraft pilots and related associate professionals control the operation of mechanical, electrical and electronic equipment, in order to navigate aircraft for transporting passengers, mail and freight and perform related pre-flight and in-flight tasks.

Their tasks include:

- a) flying and navigating aircraft in accordance with established control and operating procedures;
- b) preparing and submitting flight plan or examining standard flight plan;
- c) controlling the operation of mechanical, electrical and electronic equipment and ensuring that all instruments and controls work properly;
- d) applying knowledge of principles and practices of flying in order to identify and solve problems arising in the course of their work;
- e) examining maintenance records and conducting inspections to ensure that aircraft are mechanically sound, maintenance has been performed and that all equipment is operational;
- f) signing necessary certificates and maintaining official records of flight; and
- g) obtaining briefings and clearances before flights and maintaining contact with air traffic or flight control during flight.

**Examples:**

Aircraft maintenance officer	Flight engineer
Aircraft pilot	Flight navigator
Aviation group commander	Flying instructor
Co-Pilot	Air Transport Service Supervisors
Fighter pilot	Aerial crop sprayer

**3154 AIR TRAFFIC CONTROLLERS**

Air traffic controllers direct aircraft movements in airspace and on the ground, using radio, radar and lighting systems, and provide information relevant to the operation of aircraft.

Their tasks include:

- a) directing and controlling aircraft approaching and leaving airport and their movement on the ground;
- b) directing and controlling aircraft operating in designated airspace sector;
- c) examining and approving flight plans;
- d) informing flight crew and operations staff about weather conditions, operational facilities, flight plans and air traffic;
- e) applying knowledge of principles and practices of air traffic control in order to identify and solve problems arising in the course of their work;
- f) initiating and organizing emergency, search and rescue services and procedures;
- g) directing activities of all aircraft and service vehicles on or near airport runways; and
- h) maintaining radio and telephone contact with adjacent control towers, terminal control units and other control centers, and coordinating the movement of aircraft into adjoining areas.

**Examples:**

Air navigation system specialist	Airport operation assistant
Air traffic control specialist, station	Airways communicator
Air traffic control specialist, tower	Aviation safety regulation officer
Air traffic controller	Check flight radio operator
Air traffic coordinator	Control tower officer

Airfield services officer  
Airport control operator

Control tower radio operator  
Flight control tower operator

### 3155 AIR TRAFFIC SAFETY ELECTRONICS TECHNICIANS

Air traffic safety electronics technicians perform technical tasks concerning the design, installation, management, operation, maintenance and repair of air traffic control and air navigation systems.

Their tasks include:

- a) carrying out technical duties related to the development of electronic and computerized air navigation systems and equipment, and testing prototypes;
- b) providing technical help in the design and layout of specific interface circuitry of air navigation and aircraft detection tracking systems;
- c) preparing and contributing to the preparation of cost estimates and technical and training specifications for air traffic control and safety equipment;
- d) providing or assisting with the technical supervision of construction, installation and operation of ground-based air navigation equipment and its maintenance and repair to ensure that standards and specifications are met;
- e) applying the knowledge and skills of air traffic safety engineering principles and practices in order to identify and solve problems arising in the course of their work;
- f) developing, modifying and debugging system software;
- g) modifying existing ground-based air navigation systems and equipment to adapt them to new air traffic control procedures, in order to improve capability, reliability and integrity, or to facilitate air traffic control procedures and airspace designation;
- h) controlling, monitoring and certifying communication navigation and surveillance air traffic management equipment and calibrating the ground-based air navigation system to ensure maximum accuracy and safety of flight, take-off and landing operations; and
- i) providing technical training and supervising other workers.

#### Examples:

Air traffic safety engineer  
Air traffic safety technician

Airfield power technician  
Ground signalling technician

## 32 HEALTH ASSOCIATE PROFESSIONALS

Health associate professionals perform technical and practical tasks to support diagnosis and treatment of illness, disease, injuries and impairments in humans and animals, and to support implementation of health care, treatment and referrals plans usually established by medical, veterinary, nursing and other health professionals.

Tasks performed by workers in the sub-major group usually include: testing and operating medical imaging equipment and administering radiation therapy; performing clinical tests on specimens of bodily fluids and tissues; preparing medications and other pharmaceutical compounds under the guidance of pharmacists; designing, fitting, servicing and repairing medical and dental devices and appliances; providing nursing and personal care and midwifery support services; using herbal and other therapies based on theories, beliefs and experiences originating in specific cultures.

### 321 MEDICAL AND PHARMACEUTICAL TECHNICIANS

Medical and pharmaceutical technicians perform technical tasks to assist in diagnosis and treatment of illness, disease, injuries and impairments.

Tasks usually include: testing and operating radiographic, ultrasound and other medical imaging equipment; administering radiopharmaceuticals or radiation to patients to detect or treat diseases; performing clinical tests on specimens of bodily fluids and tissues; preparing medications and other pharmaceutical compounds under the guidance of pharmacists; designing, fitting, servicing and repairing medical and dental devices and appliances.

### **3211 MEDICAL IMAGING AND THERAPEUTIC EQUIPMENT TECHNICIANS**

Medical imaging and therapeutic equipment technicians test and operate radiographic, ultrasound and other medical imaging equipment to produce images of body structures for the diagnosis and treatment of injury, disease and other impairments. They may administer radiation treatments to patients under the supervision of a radiologist or other health professional.

Their tasks include:

- a) operating or overseeing operation of radiologic, ultrasound and magnetic imaging equipment to produce images of the body for diagnostic purposes;
- b) explaining procedures, observing and positioning patients, and using protection devices to ensure safety and comfort during examination, scan, or treatment;
- c) position imaging or treatment equipment, monitoring video displays, and adjusting settings and controls according to technical specifications;
- d) reviewing and evaluating developed x-rays, video tape, or computer generated information to determine if images are satisfactory for diagnostic purposes and recording results of procedures;
- e) monitoring patients' conditions and reactions, reporting abnormal signs to a medical practitioner;
- f) measuring and recording radiation dosage or radiopharmaceuticals received and used for patients, following prescription issued by a medical practitioner;
- g) administering, detecting and mapping radiopharmaceuticals or radiation in patients' bodies, using radioisotope, camera or other equipment for diagnosing and treating diseases; and
- h) recording and disposing of radioactive materials and storing radiopharmaceuticals, following radiation safety procedures.

#### **Examples:**

Acupressure technician	Mammographer
C T Scan technologist	Medical radiation technician
Medical x-ray technician	Medical radiation therapist
Cobalt machine technician	Medical scanning equipment technician
Diagnostic medical radiographer	Nuclear medicine technologist
Dialysis technician	Sonographer
ECG Technician	TV microscopist technician
Echocardiography technician	Ultrasound machine technician
Electroencephalography technician	Radiology technician
Electro-cardiograph technician	Medical Technologists
Laser private operator	Radiographer

### **3212 MEDICAL AND PATHOLOGY LABORATORY TECHNICIANS**

Medical and pathology laboratory technicians perform clinical tests on specimens of bodily fluids and tissues in order to obtain information about the health of a patient or cause of death.

Their tasks include:

- a) conducting chemical analysis of body fluids, including blood, urine, and spinal fluid, to determine presence of normal and abnormal components;
- b) operating, calibrating and maintaining equipment used in quantitative and



- qualitative analysis, such as spectrophotometers, calorimeters, flame photometers, and computer-controlled analyzers;
- c) entering data from analysis of laboratory tests and clinical results into records-keeping systems and reporting results to medical practitioners and other health professionals;
- d) analyzing samples of biological material for chemical content or reaction;
- e) setting up, cleaning, and maintaining laboratory equipment;
- f) analyzing laboratory findings to check the accuracy of the results;
- g) establishing and monitoring programs to ensure the accuracy of laboratory results and developing, standardizing, evaluating, and modifying procedures, techniques and tests used in the analysis of specimens;
- h) obtaining specimens, cultivating, isolating and identifying micro-organisms for analysis;
- i) examining cells stained with dye to locate abnormalities; and
- j) inoculating fertilized eggs, broths, or other bacteriological media with organisms.

**Examples:**

Biological technician  
 Biomedical technician  
 Blood-bank technician  
 Cytology technician

Medical laboratory technician  
 Pathology technician  
 Pathology laboratory technician

**3213 PHARMACEUTICAL TECHNICIANS AND ASSISTANTS**

Pharmaceutical technicians and assistants perform a variety of tasks associated with dispensing medicinal products under the guidance of a pharmacist or other health professional.

Their tasks include:

- a) preparing medications and other pharmaceutical compounds under the guidance of a pharmacist or other health professional;
- b) dispensing medicines and drugs to clients and giving written and oral instructions on their use, as prescribed by medical doctors, veterinarians or other health professionals;
- c) receiving prescriptions or refill requests from health professionals and verifying that information is complete and accurate according to medical records keeping standards;
- d) maintaining proper storage and security conditions for drugs;
- e) filling and labelling containers with prescribed medications;
- f) assisting clients by answering questions, locating items or referring them to a pharmacist for medication information;
- g) pricing and filing prescriptions that have been filled and establish and maintaining patient records, including lists of medications taken by individual patients;
- h) ordering, labelling, and counting stock of medications, chemicals, and supplies, and entering inventory data into records-keeping systems; and
- i) cleaning and preparing equipment and containers used to prepare and dispense medicines and pharmaceutical compounds.

**Examples:**

Pharmaceutical assistant  
 Pharmaceutical technician

**3214 MEDICAL AND DENTAL PROSTHETIC TECHNICIANS**

Medical and dental prosthetic technicians design, fit, service and repair medical and dental devices and appliances following prescriptions or instructions established by a health professional. They may service a wide range of support instruments to correct physical medical or dental problems such as neck braces, orthopaedic splints, artificial limbs, hearing aides, arch supports, dentures, and dental crowns and bridges.

Their tasks include:

- a) examining, interviewing, and measuring patients in order to determine their appliance needs, and to identify factors that could affect appliance fit;
- b) conferring with medical and dental practitioners in order to formulate specifications and prescriptions for devices and appliances;
- c) interpreting prescriptions or specifications to determine the type of product or device to be fabricated, and the materials and tools that will be required;
- d) making or receiving casts or impressions of patients' torsos, limbs, mouths or teeth for use as fabrication patterns;
- e) designing and making orthotic and prosthetic devices using materials such as thermoplastic and thermosetting materials, metal alloys and leather, and hand and power tools;
- f) fitting appliances and devices onto patients, testing and evaluating them, and making adjustments for proper fit, function, and comfort;
- g) repairing, modifying, and maintaining medical and dental prosthetic and supportive devices, according to specifications;
- h) bending, forming, and shaping fabric or material so that it conforms to prescribed contours needed to fabricate structural components;
- i) fabricating full and partial dentures and constructing mouth guards, crowns, metal clasps, inlays, bridgework and other aids; and
- j) instructing patients in the use and care of prosthetic or orthotic devices.

**Examples:**

Dental technician	Prosthetic technician
Denturist	Prosthetist
Orthotist	Dental mechanic
Orthotics technician	

**322 NURSING AND MIDWIFERY ASSOCIATE PROFESSIONALS**

Nursing and midwifery associate professionals provide basic nursing and personal care for people who are physically or mentally ill, disabled or infirm, and others in need of care due to potential risks to health including before, during and after childbirth. They generally work under the supervision of, and in support of implementation of health care, treatment and referral plans established by medical, nursing, midwifery and other health professionals.

Tasks performed usually include: providing nursing and personal care, treatment and advice to patients as per care plans as established by health professionals; assisting professional nurses, midwives and medical doctors in administering medication and treatments; cleaning wounds and applying surgical dressings; providing advice to individuals, families and communities on topics related to health, contraception, pregnancy and childbirth; assessing progress during pregnancy and childbirth, providing or assisting in delivery care, and recognizing signs and symptoms requiring referral to a health professional; providing care and support to women and newborns following childbirth.

**3221 NURSING ASSOCIATE PROFESSIONALS**

Nursing associate professionals provide basic nursing and personal care for people in need of such care due to effects of ageing, illness, injury, or other physical or mental impairment. They generally work under the supervision of, and in support of implementation of health care, treatment and referrals plans established by, medical, nursing and other health professionals.

Their tasks include:

- a) providing nursing and personal care and treatment and health advice to patients as per care plans established by health professionals;
- b) administering medications and other treatments to patients, monitoring patients' condition and responses to treatment, and referring patients and their families to a health professional for specialized care as needed;
- c) cleaning wounds and applying surgical dressings;
- d) updating information on patients' condition and treatments received in records-keeping systems;
- e) assisting in planning and managing the care of individual patients; and
- f) assisting in giving first-aid treatment in emergencies.

**Examples:**

Associate professional nurse	Enrolled nurse
Assistant nurse	Practical nurse
Auxillary nurse	

**3222 MIDWIFERY ASSOCIATE PROFESSIONALS**

Midwifery associate professionals provide basic health care and advice before, during and after pregnancy and childbirth. They implement care, treatment and referral plans usually established by medical, midwifery and other health professionals.

Their tasks include:

- a) providing advice to women, families and communities on health, nutrition, hygiene, exercise, birth and emergency plans, breastfeeding, infant care, family planning and contraception, lifestyle and other topics related to pregnancy and childbirth;
- b) assessing progress during pregnancy and childbirth, and recognizing signs and symptoms requiring referral to a health professional;
- c) providing delivery care, usually only in the absence of identified potential complications, or assisting medical doctors or midwifery professionals with delivery care; and
- d) providing care and support to women and newborns following childbirth, monitoring their health status, and identifying signs and symptoms requiring referral to a health professional.

**Examples:**

Associate professional midwife	Traditional midwife
Assistant midwife	Volunteer midwife

**323 3230 TRADITIONAL AND COMPLEMENTARY MEDICINE ASSOCIATE PROFESSIONALS**

Traditional and complementary medicine associate professionals prevent, care for and treat human physical and mental illnesses, disorders and injuries using herbal and other therapies based on theories, beliefs and experiences originating in specific cultures.

Their tasks include:

- a) examining patients and interviewing them and their families to determine their health status and the nature of physical or mental disorders or illnesses or other ailments;
- b) recommending and providing care and treatment for illnesses and other ailments using traditional techniques and medicaments, such as physical manipulation and exercises, blood-letting using natural vessels, and preparations using herbs, plants, insects and animal extracts;
- c) providing care and treatment for physical injuries such as setting and healing fractured and dislocated bones using traditional methods of physical manipulation and herbal therapies;
- d) advising individuals, families and the community on health, nutrition, hygiene, lifestyle and other issues to maintain or improve health and well-being; and
- e) referring patients to, and exchanging information with, other health care providers to ensure comprehensive and continuing care.

**Examples:**

Drugless treatment healer	Herbalist
Bonesetter	Scraping and cupping therapist
Faith healer	Village healer
Healer of indigenous people (e.g. Mansi-bok (Ibaloi); Mansip-ok (Kankana-ey) in Cordilleras)	Witch doctor

**324 3240 VETERINARY TECHNICIANS AND ASSISTANTS**

Veterinary technicians and assistants carry out advisory, diagnostic, preventive and curative veterinary tasks, more limited in scope and complexity than those carried out by veterinarians. They care for animals under treatment and in temporary residence at veterinary facilities and assist veterinarians to perform procedures and operations.

Their tasks include:

- a) advising communities and individuals on the treatment of animals and their diseases and injuries;
- b) conducting examinations of animals to make diagnoses or refer more difficult cases to veterinarians when needed;
- c) treating ill or injured animals, especially for common diseases and disorders;
- d) cleaning and sterilizing examination tables and instruments and preparing materials used in the examination and treatment of animals;
- e) carrying out technical tasks connected with artificial insemination of animals;
- f) getting animals ready for examination or treatment and restraining or holding them during treatment;
- g) assisting veterinarians to administer anaesthetics and oxygen during treatment;
- h) placing animals in cages for recovery from operations and monitoring their condition;
- i) producing radiographs, collecting samples, and performing other laboratory tests to assist in diagnosis of animal health problems; and
- j) performing routine animal dental procedures and assisting veterinarians with animal dentistry.

**Examples:**

Artificial inseminator	Veterinary nurse
Equine evaluator	Veterinary vaccinator
Veterinary assistant	Veterinary technician
Veterinary laboratory technician	

**325 OTHER HEALTH ASSOCIATE PROFESSIONALS**

Other health associate professionals perform technical tasks and provide support services in dentistry, medical records administration, community health, the correction of reduced visual acuity, physiotherapy, environmental health, emergency medical treatment and other activities to support and promote human health.

Tasks usually include: providing basic care services for the prevention and treatment of diseases and disorders of the teeth and mouth; advising communities and individuals on hygiene, diet and other preventive measures to reduce potential risks to health; compiling and maintaining patients' medical records to document condition and develop the necessary skills and resources to improve their health status; providing advice and education on sanitation and hygiene to limit the spread of infectious diseases; fitting and dispensing optical lenses; investigate the implementation of rules and regulations relating to environmental and occupational factors that may potentially affect human health; massaging the soft tissues of the body; showing patients to examination rooms and preparing them for examination; attending accidents, emergencies and requests for medical assistance.

**3251 DENTAL ASSISTANTS AND THERAPISTS**

Dental assistants and therapists provide basic dental care services for the prevention and treatment of diseases and disorders of the teeth and mouth, as per care plans and procedures established by a dentist or other oral health professional.

Their tasks include:

- a) advising communities and individuals on dental hygiene, diet and other preventive measures to reduce potential risks to oral health;
- b) conducting visual and physical examinations of patients' mouths, teeth and related structures to assess oral health status;
- c) identifying cases of patients with poor oral health or oral disease requiring referral to a dentist or other health professional;
- d) assisting dentists during complex dental procedures;
- e) providing fluoride treatments, cleaning and removing deposits from teeth, preparing cavities and placing fillings, administering local anaesthesia, and performing other types of basic or routine clinical dental procedures;
- f) preparing, cleaning and sterilizing dental instruments, equipment and materials used in the examination and treatment of patients;
- g) getting patients ready for examination or treatment including explaining procedures and correct positioning;
- h) taking impressions of the mouth and dental radiographs to support diagnosis and fitting of dental prosthetics.

**Examples:**

Dental associate  
Dental assistant

Dental therapist

**3252 MEDICAL RECORDS AND HEALTH INFORMATION TECHNICIANS**

Medical records and health information technicians develop, maintain and implement health records processing, storage and retrieval systems in medical facilities and other health care settings to meet the legal professional, ethical and administrative records-keeping requirements of health services delivery.

Their tasks include:

- a) planning, developing, maintaining and operating a variety of health record indexes and storage and retrieval systems to collect, classify, store and analyze information;

- b) transcribing, compiling and processing patient medical records, admission and discharge documents, and other medical reports into records-keeping systems to provide data for patient monitoring and referral, epidemiological monitoring, research, billing, cost control and care improvement;
- c) reviewing records for completeness, accuracy and compliance with regulations;
- d) translating narrative descriptions and numeric information from medical records and other documents on health services delivery into codes associated with standard classification systems;
- e) protecting the security of medical records to ensure that confidentiality is maintained and releasing information to authorized persons and agencies in accordance with regulations; and
- f) supervising clerical and administrative workers involved in the maintenance of medical records.

**Examples:**

Clinical coder	Medical records clerk
Disease registry technician	Medical records unit supervisor
Health information clerk	Medical records technician
Medical records analyst	

**3253 COMMUNITY HEALTH WORKERS**

Community health workers provide health education, referral and follow up, case management, and basic preventive health care and home visiting services to specific communities. They provide support and assistance to individuals and families in navigating the health and social services system.

Their tasks include:

- a) providing information to families and communities on a range of health issues including nutrition, hygiene, infant and child care, immunizations, family planning, risk factors and prevention of common infectious diseases, poisoning prevention, first aid for treatment of simple and common ailments, substance abuse, domestic violence, and other topics;
- b) visiting families in their homes to provide information on the health, social and other services available and support them in gaining access to these services;
- c) visiting families who do not usually access medical establishments to monitor on a regular basis certain conditions, such as progress with pregnancy, child growth and development, and environmental sanitation;
- d) distributing to households medical supplies for the prevention and treatment of endemic diseases such as malaria, pneumonia and diarrhoea diseases, and instructing family and community members in the use of these products;
- e) conducting outreach efforts to groups who do not usually access medical establishments with information and basic medical supplies for prevention and management of certain health conditions for which they are most at risk, such as HIV/AIDS and other communicable diseases; and
- f) collecting data from households and communities who do not usually access medical establishments for purposes of patient monitoring and referral and reporting to meet health regulations.

**Examples:**

Community health aide	Community health worker
Community health promoter	Village health worker

**3254 DISPENSING OPTICIANS**

Dispensing opticians design, fit and dispense optical lenses based on a prescription from an ophthalmologist or optometrist for the correction of reduced visual acuity. They service corrective eyeglasses, contact lenses, low-vision aids and other optical devices.

Their tasks include:

- a) examining and taking facial and eye measurements of clients for fitting of eyeglasses and other optical devices;
- b) providing advice to clients with selection and maintenance of eyeglasses and frames, types of contact lenses and other optical devices for performance, safety, comfort and lifestyle;
- c) interpreting optical prescriptions and preparing work order for optical laboratory for grinding and mounting of lenses in frames, preparation of contact lenses and other required work; and
- d) verifying exactness of finished optical appliances and devices to the original prescription and fit of clients.

**Examples:**

Contact lens optician  
Dispensing optician

**3255 PHYSIOTHERAPY TECHNICIANS AND ASSISTANTS**

Physiotherapy technicians and assistants provide physical therapeutic treatments to patients in circumstances where functional movement is threatened by injury, disease or impairment. Therapies are usually provided as per rehabilitative plans established by a physiotherapist or other health professional.

Their tasks include:

- a) administering manual treatments such as massage therapy or pressure point therapy;
- b) administering electrical modality treatments, ultrasound, and other physical therapies using specialized techniques and equipment, including infra-red lamps, wet compresses, and herbal and mineral therapies;
- c) instructing, motivating, safeguarding and assisting patients as they practice physical exercises, relaxation techniques and functional activities;
- d) conferring with physiotherapists or other health care providers to evaluate patient information for planning, modifying, and coordinating treatment;
- e) monitoring and recording patients' progress during treatments, including measuring their range-of-joint motion and vital signs; and
- f) fitting patients for orthopedic braces, prostheses, and other physical supportive devices such as crutches, and instructing patients in the use of such devices.

**Examples:**

Acupressure therapist  
Electrotherapist  
Hydrotherapist  
Massage therapist  
Orthopedic technician

Physical rehabilitation technician  
Physiotherapy assistant  
Physiotherapy technician  
Reflexologist  
Shiatsu therapist

**3256 MEDICAL ASSISTANTS**

Medical assistants perform basic clinical and administrative tasks to support patient care under the direct supervision of a medical practitioner or other health professional.

Their tasks include:

- a) interviewing patients and their families to obtain information on their health status and medical history;
- b) assisting medical doctors and other health professionals to examine and treat patients, including measuring and recording vital signs, administering medications, and performing routine clinical procedures such as giving injections and removing sutures ;
- c) getting patients ready for examination and treatment, including explaining procedures and showing them to examination rooms;
- d) preparing and handling medical instruments and supplies, including sterilizing instruments and disposing of contaminated supplies in accordance with safety procedures;
- e) collecting blood, tissue or other specimens, and preparing them for laboratory testing;
- f) providing information to patients and families on health care topics including medications prescribed by a medical doctor or other health professional;
- g) providing prescription and drug refill information to pharmacies;
- h) maintaining cleanliness of patient waiting and examination rooms;
- i) recording information on patients' medical history, diagnostic testing and treatment procedures and results, and other information in medical records-keeping systems; and
- j) scheduling appointments with patients, and preparing documentation required for billing, reporting and insurance purposes.

**Examples:**

Clinical assistant

Medical assistant

Ophthalmic assistant

**3257 ENVIRONMENTAL AND OCCUPATIONAL HEALTH INSPECTORS AND ASSOCIATES**

Environmental and occupational health inspectors and associates investigate the implementation of rules and regulations relating to environmental factors that may affect human health, safety in the workplace, and safety of processes for the production of goods and services. They may implement and evaluate programs to restore or improve safety and sanitary conditions under the supervision of a health professional.

Their tasks include:

- a) advising employers' and workers' representatives on the implementation of government and other rules and regulations concerning occupational safety and the working environment;
- b) inspecting places of work to ensure that the working environment, machinery and equipment conform to government and other rules, regulations and standards related to sanitation and/or occupational and environmental health and safety;
- c) giving advice on environmental sanitary problems and techniques;
- d) inspecting places of work and, by interviews, observations and other means, obtaining information about work practices and accidents to determine compliance with safety rules and regulations;
- e) inspecting areas of production, processing, transport, handling, storage and sale of products to ensure conformity with government and other rules, regulations and standards;
- f) advising enterprises and the general public on the implementation of government and other rules and regulations concerning hygiene, sanitation, purity and grading of primary products, food, drugs, cosmetics and similar goods;



- g) inspecting establishments to ensure that they conform to government and other rules and regulations concerning emission of pollutants and disposal of dangerous wastes;
- h) initiating action to maintain or improve hygiene and prevent pollution of water, air, food or soil;
- i) promoting preventive and corrective measures such as control of disease carrying organisms and of harmful substances in the air, hygienic food handling, proper disposal of waste and cleaning of public places; and
- j) estimating quantities and costs of materials and labor required for health, safety and sanitation remediation projects;

**Examples:**

Environmental sanitation inspector	Production inspector
Food sanitation and safety inspector	Quality assurance/control inspector
Health inspector	Sanitarian
Occupational health and safety inspector	Sanitary inspector
Pollution inspector	Vehicles/pollution inspector
Pollution control aide	Zoning inspector
Pollution control officer	Product safety inspector

**3258 AMBULANCE WORKERS**

Ambulance workers provide emergency health care to patients who are injured, sick, infirm, or otherwise physically or mentally impaired prior to and during transport to medical facilities.

Their tasks include:

- a) assessing health status of persons involved in accidents, natural disasters and other emergency situations, and determining needs for immediate and specialized medical assistance;
- b) performing medical procedures and administering drugs and other therapies according to protocol for emergency medical treatment, including resuscitating and defibrillating patients and operating life-support equipment;
- c) monitoring changes in health status of patients during transport to and from medical, rehabilitation and other health care facilities;
- d) providing information and training to community groups and essential service workers in first aid for initial care of an illness or injury;
- e) attending and/or patrolling large-scale public gatherings and other events where health emergencies are more likely to occur; and
- f) recording information on patients' conditions and treatments provided in medical records-keeping systems.

**Examples:**

Ambulance officer	Emergency medical technician
Ambulance paramedic	Emergency paramedic

**3259 HEALTH ASSOCIATE PROFESSIONALS NOT ELSEWHERE CLASSIFIED**

This unit group covers health associate professionals not classified elsewhere in Sub-major group 32, Health associate professionals. For instance the group includes occupations such as chiropractor, osteopath and other health associate professionals.

Their tasks include:

- a) interviewing and examining patients to obtain information on their health status and the nature and extent of injury, illness or other physical or mental health problem;

- b) administering therapeutic care and treatment to patients, including the manual and physical chiropractic and osteopathic techniques;
- c) monitoring patients' progress through treatment plans, and identifying signs and symptoms requiring referral to a medical doctor or other health professional;
- d) recording information on patients' health status and responses to treatment in medical records-keeping systems; and
- e) sharing information with other health care providers when required to ensure continuing and comprehensive care.

**Examples:**

Accupuncture technician  
Artificial limb and brace maker  
Chiropractor

Occupational therapy technician  
Osteopath

### 33 BUSINESS AND ADMINISTRATION ASSOCIATE PROFESSIONALS

Business and administration associate professionals perform mostly technical tasks connected with the practical application of knowledge relating to financial accounting and transaction matters, mathematical calculations, human resource development, selling and buying financial instruments, specialized secretarial tasks, and enforcing or applying relevant government rules. Also included are workers who provide business services such as customs clearance, conference planning, job placements, buying and selling real estate or bulk commodities, and serving as agents for performers such as athletes and artists.

Tasks performed by workers in this sub-major group usually include recording and transmitting buy and sell orders for securities, stocks, bonds or other financial instruments and for foreign exchange for future or immediate delivery; submitting credit and loan applications to management with recommendations for approval or rejection; approving or rejecting applications within authorized limits ensuring that credit standards of the institution are respected; maintaining complete records of all financial transactions of an undertaking according to general bookkeeping principles, with guidance from Accountants; assisting in planning and performing mathematical, statistical, actuarial, accounting and related calculations; selling and buying financial instruments.

#### 331 FINANCIAL AND MATHEMATICAL ASSOCIATE PROFESSIONALS

Financial and mathematical associate professionals place a value on various items and property, maintain records of financial transactions, analyze loan application information and render a decision, buy and sell financial instruments, and perform mathematical and related calculations.

Recording and transmitting buy and sell orders for securities, stocks, bonds or other financial instruments and for foreign exchange for future or immediate delivery; submitting credit and loan applications to management with recommendations for approval or rejection; or approve or reject applications within authorized limits ensuring that credit standards of the institution are respected; maintaining complete records of all financial transactions of an undertaking according to general bookkeeping principles, with guidance from Accountants; assisting in planning and performing mathematical, statistical, actuarial, accounting and related calculations.

##### 3311 SECURITIES AND FINANCE DEALERS AND BROKERS

Securities and finance dealers and brokers buy and sell securities, stocks, bonds and other financial instruments, and deal on the foreign exchange, on spot, or on futures markets, on behalf of their own company or for customers on a commission basis. They recommend transactions to clients or senior management.

Their tasks include:

- a) obtaining information about the financial circumstances of customers and companies in which investments may be made;
- b) analyzing market trends for securities, bonds, stocks and other financial instruments, including foreign exchange;
- c) informing prospective customers about market conditions and prospects;
- d) advising on and participating in the negotiation of terms for, and organization of, loans and placement of stocks and bonds in the financial market to raise capital for customers; and
- e) recording and transmitting buy and sell orders for securities, stocks, bonds or other financial instruments and for foreign exchange for future or immediate delivery.

**Examples:**

Finance broker	Securities dealer
Finance dealer	Securities operations/currency assistant
Foreign exchange broker	Securities salesman
Foreign exchange dealer	Stocks and shares broker
Securities broker	Securities and settlement officer
Securities custodian	

### 3312 CREDIT AND LOANS OFFICERS

Credit and loans officers analyze and evaluate financial information on applications for credit and loans and determine approval or disapproval of the client for the credit or loan or recommend to management approval or disapproval.

Their tasks include:

- a) interviewing applicants for personal, mortgage, student and business loans;
- b) researching and evaluating loan applicant's financial status, references, credit and ability to repay the loan;
- c) submitting credit and loan applications to management with recommendations for approval or rejection;
- d) approving or rejecting loan applications within authorized limits ensuring that credit standards of the institution are respected;
- e) keeping records of payments, and preparing routine letters requesting payment for overdue accounts and forwarding these for legal action; and
- f) completing credit and loan documentation.

**Examples:**

Credit analyst	Loan officer
Credit branch operation officer	Mortgage officer
Export credit guarantee specialist	Credit investigator/appraiser
Letters of credit analyst	

### 3313 ACCOUNTING ASSOCIATE PROFESSIONALS

Accounting associate professionals maintain complete records of financial transactions of an undertaking and verify accuracy of documents and records relating to such transactions.

Their tasks include:

- a) maintaining complete records of all financial transactions of an undertaking according to general bookkeeping principles, with guidance from Accountants;
- b) verifying accuracy of documents and records relating to payments, receipts and other financial transactions;

- c) preparing financial statements and reports for specified periods;
- d) applying knowledge of bookkeeping principles and practices in order to identify and solve problems arising in the course of their work;
- e) using standard computer software packages to perform accounting and related calculations; and
- f) supervising the work of accounts and bookkeeping clerks.

**Examples:**

Accounting assistant	Associate auditor
Accounting associate	Audit assistant
Accounting officer	Audit examiner
Accounts payable associate	Bookkeeper
Accounts specialist	Bank reconciliation assistant
Associate accountant	

**3314 STATISTICAL, MATHEMATICAL AND RELATED ASSOCIATE PROFESSIONALS**

Statistical, mathematical and actuarial associate professionals assist in planning the collection, processing and presentation of statistical, mathematical or actuarial data and in carrying out these operations, usually working under the guidance of statisticians, mathematicians and actuaries.

Their tasks include:

- a) assisting in planning and performing statistical, mathematical, actuarial, and related calculations;
- b) preparing detailed estimates of quantities and costs of materials and labor required for statistical census and survey operations;
- c) performing technical tasks connected with establishing, maintaining and using registers and sampling frames for census and survey operations;
- d) performing technical tasks connected with data collection and quality control operations in censuses and surveys;
- e) using standard computer software packages to perform mathematical, actuarial, statistical, accounting and related calculations;
- f) preparing statistical, mathematical, actuarial, accounting and other results for presentation in graphical or tabular form;
- g) applying knowledge of statistical, mathematical, actuarial, accounting and related principles and practices in order to identify and solve problems arising in the course of their work; and
- h) supervising the work of statistical clerks.

**Examples:**

Actuarial assistant  
Mathematical assistant/aide  
Statistical assistant/aide

**3315 VALUERS AND LOSS ASSESSORS**

Valuers and loss assessors value property and various goods and assess losses covered by insurance policies.

Their tasks include:

- a) determining the quality or value of raw materials, real estate, industrial equipment, personal and household effects, works of art, gems and other objects;
- b) assessing the extent of damage or loss and liabilities of insurance companies and underwriters for losses covered by insurance policies;

- c) obtaining records of sales and value of similar items or property;
- d) inspecting items or property to evaluate condition, size, and construction; and
- e) preparing reports of value, outlining the estimation factors and methods used.

**Examples:**

Appraiser	Claims verifier
Claims assessor	Insurance assessor
Claims evaluator	Real estate appraiser
Claims inspector	Valuer

**332 SALES AND PURCHASING AGENTS AND BROKERS**

Sales and purchasing agents and brokers represent companies, governments and other organizations to buy and sell commodities, goods, insurance, shipping and other services to industrial, professional, commercial or other establishments, or act as independent agents to bring together buyers and sellers of commodities and services.

Tasks performed usually include obtaining information about, monitoring and analyzing market trends and conditions and employer's and competitors goods and services; obtaining information about clients' needs and identifying suitable products and services; explaining and demonstrating products and services to clients; negotiating prices, contracts, terms, conditions and shipping arrangements for purchase or sale of goods, services or commodities.

**3321 INSURANCE REPRESENTATIVES**

Insurance representatives advise on and sell life, accident, automobile, liability, endowment, fire, marine and other types of insurance to new and established clients.

Their tasks include:

- a) obtaining information about customers' circumstances necessary to determine appropriate type of insurance and conditions;
- b) negotiating with customers to determine type and degree of risk for which insurance is required;
- c) explaining details of insurance and conditions, risk coverage premiums and benefits to customers;
- d) assisting clients to determine the type and level of coverage required, calculating premiums and establishing method of payment;
- e) negotiating and placing reinsurance contracts; and
- f) advising on, negotiating terms for and placing insurance contracts for large or special types of projects, installations or risks.

**Examples:**

Assistant underwriter	Insurance examiner
Export credit insurance underwriting officer	Insurance processor
Insurance agent	Insurance underwriter
Insurance adjuster	Insurance/risk officer
Insurance adviser	Medical underwriter
Insurance broker	Underwriting and claims head

**3322 COMMERCIAL SALES REPRESENTATIVES**

Commercial sales representatives represent companies to sell various goods and services to businesses and other organizations and provide product specific information as required.

Their tasks include:

- a) soliciting orders and selling goods to retail, industrial, wholesale and other establishments;
- b) selling equipment, supplies and related services to business establishments or individuals;
- c) obtaining and updating knowledge of market conditions and of employer's and competitors' goods and services;
- d) providing prospective customers with information about the characteristics and functions of the products and equipment for sale, and demonstrating its use or qualities;
- e) reporting customers' reactions and requirements to suppliers and manufacturers; and
- f) following up clients to ensure satisfaction with products purchased.

**Examples:**

After-sale service adviser	Promotions and events marketing officer
Canvasser	Sales analyst
Commercial traveller	Sales and marketing assistant
Dealer	Sales consultant
Executive sales agent	Sales supervisor
Franchise relation officer	Technical and commercial representative
Manufacturer's agent	Technical service adviser
Marketing assistant	Tender and pricing analyst
Merchandiser	Sales Supervisors in Wholesale Trade
Promotions and events marketing officer	

**3323 BUYERS**

Buyers buy goods and services for use or resale on behalf of industrial, commercial, government or other establishments and organizations.

Their tasks include:

- a) determining or negotiating contract terms and conditions, awarding supplier contracts or recommending contract awards for the purchase of equipment, raw materials products, services and the purchasing of merchandise for resale;
- b) obtaining information about requirements and stock and developing specifications for quantity and quality to be purchased, costs, delivery dates and other contract conditions;
- c) purchasing general and specialized equipment, materials or business services for use or for further processing by their establishment;
- d) inviting tenders, consulting with suppliers and reviewing quotations;
- e) purchasing merchandise for resale by retail or wholesale establishments;
- f) studying market reports, trade periodicals and sales promotion materials and visiting trade shows, showrooms, factories and product design events;
- g) interviewing suppliers and negotiating prices, discounts, credit terms and transportation arrangements;
- h) overseeing distribution of merchandise to outlets and maintaining adequate stock levels; and
- i) establishing delivery schedules, monitoring progress and contacting clients and suppliers to resolve problems.

**Examples:**

Buyer	Purchasing agent
Procurement officer	Purchasing merchandiser
Purchaser	Retail trade buyer

**3324 TRADE BROKERS**

Trade brokers buy and sell commodities and shipping services, usually in bulk, on behalf of their own company or for customers on a commission basis.

Their tasks include:

- a) establishing contact between buyers and sellers of commodities;
- b) discussing buying or selling requirements of clients and giving advice accordingly;
- c) buying and selling cargo space on ships;
- d) negotiating purchase or sale of commodities and commodity futures;
- e) finding cargo and/or storage space for commodities and negotiating freight, shipping and storage charges; and
- f) monitoring and analyzing market trends and other factors affecting the supply and demand for commodities and shipping services.

**Examples:**

Broker assistant	Shipping broker
Commodities broker	Trade broker
Commodity futures dealer	

**333 BUSINESS SERVICE AGENTS**

Business service agents establish contacts to sell various business services such as advertising space in the media, carry out customs clearance activities ensuring that necessary documents are in order, match jobseekers with vacancies, find workers for employers, arrange contracts for the performance of athletes, entertainers and artists, as well as for the publication of books, the production of plays, or the recording, performing and sale of music, plan and organize conferences and similar events.

Tasks performed usually include: Carrying out customs clearing procedures for exports or imports; arranging and coordinating conference and event services, such as conference facilities, catering, signage, displays, audiovisual and computer equipment, accommodation, transport and social events, for participants; matching jobseekers with vacancies; finding workers for vacant posts for employers; showing real estate properties to be sold or leased to prospective buyers or tenants and explaining terms of sale or conditions of rent or lease; selling by auction various kinds of property, cars, commodities, livestock, art, jewellery and other objects; arranging contracts for performers and performances.

**3331 CLEARING AND FORWARDING AGENTS**

Clearing and forwarding agents carry out customs clearing procedures and ensure that insurance, export/import licenses and other formalities are in order.

Their tasks include:

- a) carrying out customs clearing procedures for exports or imports;
- b) ensuring that insurance is in order;
- c) ensuring that export/import licenses and other formalities are in order;
- d) signing and issuing bills of lading; and
- e) checking import/export documentation to determine cargo contents, and classifying goods into different fee or tariff groups, using a tariff coding system.

**Examples:**

Clearing agent	Shipping agent
Forwarding agent	Processor
Logistics and warehouse officer	Declarant

**3332 CONFERENCE AND EVENT PLANNERS**

Conference and event planners organize and coordinate services for conferences, events, functions, banquets and seminars.

Their tasks include:

- a) promoting conferences, conventions and trade shows to potential customers;
- b) responding to inquiries concerning services provided and costs for room and equipment hire, catering and related services;
- c) meeting with clients to discuss their needs and outlining package options to meet these needs;
- d) arranging and coordinating services, such as, conference facilities, catering, signage, displays, audiovisual and computer equipment, accommodation, transport and social events, for participants, logistical arrangements for presenters;
- e) organizing registration of participants;
- f) negotiating the type and costs of services to be provided within budget; and
- g) overseeing work by contractors and reporting on variations to work orders.

**Examples:**

Conference and event planner  
Conference planner  
Wedding planner

**3333 EMPLOYMENT AGENTS AND CONTRACTORS**

Employment agents and contractors match jobseekers with vacancies, find workers for employers and contract labor for particular projects at the request of enterprises and other organizations including government, institutions, or find places for jobseekers for a commission.

Their tasks include:

- a) matching jobseekers with vacancies;
- b) finding workers for vacant posts against a commission from the employer or worker;
- c) discussing with enterprises/organizations the needed skills and other characteristics of the workers to be employed or contracted;
- d) finding workers with appropriate skills, etc., and undertaking the necessary formalities according to national or international regulations and requirements;
- e) ensuring that the employment contracts meet legal requirements and signing them; and
- f) advising on training schemes.

**Examples:**

Employment agent	Recruitment officer
Job placement officer	Worker welfare assistant
Labor contractor	

**3334 REAL ESTATE AGENTS AND PROPERTY MANAGERS**

Real estate agents and property managers arrange the sale, purchase, rental and lease of real property, usually on behalf of clients and on a commission basis.

Their tasks include:

- a) obtaining information about properties to be sold or leased, the circumstances of their owner and the needs of prospective buyers or tenants;



- b) showing properties to be sold or leased to prospective buyers or tenants and explaining terms of sale or conditions of rent or lease;
- c) facilitating negotiations with tenants and owners on rents and fees;
- d) drawing up leasing and sale agreements and estimating costs;
- e) arranging signing of lease agreements and transfer of property rights;
- f) collecting rent and bond monies on behalf of owner and inspecting properties before, during and after tenancies; and
- g) ensuring the availability of workers to perform maintenance of the properties.

**Examples:**

Estate agent	Real estate broker
Estate management officer	Real property appraiser
Housing and home site regulation officer	Realtor
Property custodian	Resettlement and development officer
Property manager	Salesperson (real estate)

**3339 BUSINESS SERVICES AGENTS NOT ELSEWHERE CLASSIFIED**

This unit group covers business services agents not classified elsewhere in Minor group 333, Business services agents. For instance, the group includes those who establish business contacts, sell business services such as advertising space in the media, arrange contracts for performances of athletes, entertainers and artists, for the publication of books, the production of plays, or the recording, performance and sale of music and who sell property and goods by auction.

Their tasks include:

- a) obtaining information about services to be sold and needs of prospective buyers;
- b) negotiating contracts on behalf of seller or buyer and explaining terms of sale and payment to client;
- c) signing agreements on behalf of seller or buyer and ensuring that contract is honored;
- d) making sure that the business service purchased is made available to the buyer in the agreed format at the agreed time; and
- e) selling by auction various kinds of property, cars, commodities, livestock, art, jewellery and other objects.

**Examples:**

Advertising salesperson	Marketing agent
Auctioneer	Musical performance agent
Business services salesman	Sports agent
Literary agent	Theatrical agent

**334 ADMINISTRATIVE AND SPECIALIZED SECRETARIES**

Administrative and specialized secretaries provide organizational, communication and documentation support services, utilizing specialized knowledge of the business activity of the organization in which they are employed. They take supervisory responsibility for office clerks in the organization.

Tasks performed usually include: coordinating, assigning and reviewing the work of clerical support workers; desktop publishing; preparing and processing legal documents and papers, such as deeds, wills, affidavits and briefs; implementing and supporting the communication, documentation and internal managerial coordination activities of an organizational unit, on some occasions utilizing specialized knowledge of the business activity of the organization; scheduling

and confirming meetings and appointments and communicating messages for clients; compiling, recording and reviewing legal and medical records, reports, documents and correspondence.

### **3341 OFFICE SUPERVISORS**

Office supervisors supervise and coordinate the activities of workers in major group 4, Clerical support workers.

Their tasks include:

- a) coordinating, assigning and reviewing the work of clerks engaged in the following duties: word processing, record keeping and filing, operating telephones and switchboards; data entry, desktop publishing and other activities involving general office and administrative skills;
- b) establishing work schedules and procedures and co-coordinating activities with other work units or departments;
- c) resolving work-related problems and preparing and submitting progress and other reports;
- d) training and instructing employees in job duties, safety procedures and company policies, or arranging for training to be provided;
- e) evaluating employees' job performance and conformance to regulations, and recommending appropriate personnel action; and
- f) assisting in recruitment, interviewing, and selection of employees.

#### **Examples:**

Administrative supervisor

Clerical supervisor

Data entry supervisor

Filing clerks supervisor

Human resource supervisor

Personnel clerks supervisor

### **3342 LEGAL SECRETARIES**

Legal secretaries apply specialized knowledge of legal terminology and procedures in providing support to legal professionals with communication, documentation and internal managerial coordination activities, in law offices, legal departments of large firms and governments.

Their tasks include:

- a) preparing and processing legal documents and papers, such as deeds, wills, affidavits and briefs;
- b) reviewing and proofreading documents and correspondence to ensure compliance with legal procedures;
- c) mailing, faxing, or arranging for delivery of legal correspondence to clients, witnesses, and court officials;
- d) organizing and maintaining documents, case files and law libraries;
- e) screening requests for meetings, scheduling and organizing meetings;
- f) assisting in the preparation of budgets, monitoring of expenditures, drafting of contracts and purchasing or acquisition orders; and
- g) supervising the work of office support workers.

#### **Examples:**

Legal secretary

Legal practice manager

**3343 ADMINISTRATIVE AND EXECUTIVE SECRETARIES**

Administrative and executive secretaries perform liaison, coordination and organizational tasks in support of managers and professionals and/or prepare correspondence, reports and records of proceedings and other specialized documentation.

Their tasks include:

- a) drafting administrative correspondence and minutes;
- b) obtaining, proposing and monitoring deadlines and follow-up dates;
- c) screening requests for meetings, scheduling and organizing meetings and travel arrangements;
- d) assisting in the preparation of budgets, monitoring of expenditures, drafting of contracts and purchasing or acquisition orders;
- e) liaising with other staff about a range of matters relating to the organization's operations;
- f) writing and answering business or technical letters and other similar correspondence;
- g) preparing verbatim reports of proceedings in legislative assemblies, courts of law or other places using shorthand or specialized office equipment;
- h) supervising the work of clerical support workers.

**Examples:**

Administrative secretary	General secretary
Assistant correspondence	Legislative committee secretary
Board secretary	Minutes agenda officer
Civil secretary	Personal assistant
Confidential secretary	Presidential staff officer
Corporate secretary	Private secretary
Court reporter	Verbatim reporter
Executive assistant	Executive secretary

**3344 MEDICAL SECRETARIES**

Medical secretaries, using specialized knowledge of medical terminology and health care delivery procedures, assist health professionals and other workers by performing a variety of communication, documentation, administrative and internal coordination functions, to support health workers in medical facilities and other health-care related organizations.

Their tasks include:

- a) scheduling and confirming medical appointments and communicating messages for medical staff; and patients;
- b) compiling, recording and reviewing medical charts, reports, documents and correspondence;
- c) interviewing patients to complete forms, documents and case histories;
- d) completing insurance and other claims forms;
- e) maintaining medical files and records and technical library;
- f) preparing financial statements and billing procedures;
- g) assisting in the preparation of budgets, drafting of contracts and purchasing or acquisition orders; and
- h) supervising the work of office support workers and other office staff.

**Examples:**

Billing secretary	Medical secretary
Hospital ward secretary	Medical stenographer
Medical insurance	Medical transcriptionist

Medical office administrative assistant	Pathology secretary
Medical practice manager	Patient care secretary
Medical relation assistant	

### 335 REGULATORY GOVERNMENT ASSOCIATE PROFESSIONALS

Regulatory government associate professionals administer, enforce or apply relevant government rules and regulations relating to national borders, taxes, social benefits, and issue or examine applications for licenses or authorizations in connection with travel, exports and imports of goods, establishment of businesses, erection of buildings and other activities subject to government regulations.

Tasks performed usually include: patrolling national borders and checking persons and vehicles, travel and transport documents and goods transported across the border to ensure enforcement of government rules and regulations; examining tax returns to determine taxes payable by persons and businesses; examining and deciding on applications for social benefits, examining and deciding on applications for government authorizations and licenses necessary to travel, export or import goods, erect buildings, establish businesses or undertake other activities subject to government regulations; monitoring the application of price, wage or weights and measures regulations. They may receive guidance from senior government officials or Managers. Supervision of other workers may be included.

#### 3351 CUSTOMS AND BORDER INSPECTORS

Customs and border inspectors check persons and vehicles crossing national borders to administer and enforce relevant government rules and regulations.

Their tasks include:

- a) patrolling national borders and coastal waters to stop persons from illegally entering or leaving the country and from illegally importing or exporting currency or goods;
- b) checking travel documents of persons crossing national borders to ensure that they have the necessary authorizations and certificates;
- c) inspecting the luggage of persons crossing national borders to ensure that it conforms to government rules and regulations concerning import or export of goods and currencies;
- d) examining transport documents and freight of vehicles crossing national borders to ensure conformity with government rules and regulations concerning goods in transit and the import and export of goods, and to verify that necessary payments have been made;
- e) detaining persons and seizing prohibited and undeclared goods found to be in violation of immigration and customs laws;
- f) coordinating and cooperating with other agencies involved in law enforcement, deportation and prosecution;
- g) performing related administrative tasks to record findings, transactions, violations and determinations; and
- h) when necessary, testifying in a court of law about the circumstances and results of investigations carried out.

#### Examples:

Border inspector	Immigration services officer
Customs declarant	Passport checking officer
Customs inspector	Terminal operations specialist
Customs officer	Travel tax officer
Customs representative	Warehouse inspector
Immigration officer	Warehouse shipping officer

**3352 GOVERNMENT TAX AND EXCISE OFFICIALS**

Government tax and excise officials examine tax returns, bills of sale and other documents to determine the type and amount of taxes, duties and other types of fees to be paid by individuals or businesses, referring exceptional or important cases to accountants, senior government officials or Managers.

Their tasks include:

- a) advising organizations, enterprises and the public on government laws, rules and regulations concerning the determination and payment of taxes, duties and other government fees, and on the public's rights and obligations;
- b) examining tax returns, bills of sale and other relevant documents to determine type and amount of taxes, duties and other types of fees to be paid;
- c) investigating filed tax returns and accounting records, systems and internal controls of organizations to ensure compliance with taxation laws and regulations; and
- d) performing related administrative tasks to document findings, maintain records and report on actions taken for cases.

**Examples:**

Excise officer	Tax officer
Revenue collection officer	Tax researcher
Tariff analyst	Tax specialist
Tax enforcer	Taxation analyst
Tax finance officer	Taxation inspector
Tax mapping examiner	Transport tax processor

**3353 GOVERNMENT SOCIAL BENEFITS OFFICIALS**

Government social benefits officials examine applications for government, financial or service programs to determine eligibility and amount of benefit or appropriate services, referring exceptional or important cases to senior government officials or managers.

Their tasks include:

- a) advising individuals and organizations on government laws, rules and regulations concerning government benefit programs and the determination and disbursement of payments or referral to services, as well as on the public's rights and obligations;
- b) examining applications and other relevant documents to determine type and amount of benefit which individuals are eligible to receive;
- c) assessing documentation and interviewing benefit recipients to ensure eligibility for continuing benefits or services; and
- d) performing related administrative tasks to maintain client records and prepare reports on determinations regarding eligibility, referral decisions, termination of benefits and abuse or fraud.

**Examples:**

Benefits officer	Pensions officer
Insurance risk analyst	Social benefit officer
Medical claims benefits	Social insurance officer
Overseas operations officer	Social security claims officer
Overseas worker welfare officer	Social security examiner

**3354 GOVERNMENT LICENSING OFFICIALS**

Government licensing officials examine applications for licenses to export or import goods, set up businesses, build houses or other structures, or to obtain passports, determine eligibility of applications for issuing licenses or passports, and identify specific conditions or restrictions to be attached to licenses issued, referring exceptional or important cases to Senior government officials or Managers.

Their tasks include:

- a) advising individuals on government laws and regulations concerning the type of license required and the conditions attached to such licenses, and on the public's rights and obligations;
- b) examining applications and relevant documents and determining whether a license can be granted and the conditions which should be attached;
- c) examining applications and approving the issue of passports;
- d) performing related administrative tasks to process applications, document activities, evaluations and determinations, and to prepare correspondence to inform applicants of licensing decisions; and
- e) administering and scoring tests required to license applicants.

**Examples:**

Building permit (licensing) officer	Licenser
Business permit (licensing) officer	Licensing officer
License examiner	Passport issuing officer
License inspector	Professional regulation officer

**3355 POLICE INSPECTORS AND DETECTIVES**

Police inspectors and detectives investigate facts and circumstances relating to crimes committed in order to identify suspected offenders and obtain information not readily available or apparent concerning establishments or the circumstances and behavior of persons, mostly in order to prevent crimes.

Their tasks include:

- a) establishing contacts and sources of information about crimes planned or committed, in order to prevent crimes or identify suspected offenders;
- b) obtaining and verifying evidence by examining crime and accident scenes for clues and physical evidence, interviewing witnesses and suspects and analyzing documents and computer files;
- c) analyzing evidence in order to solve crimes, identify criminal activity and gather information for court cases;
- d) establishing contacts and sources of information not readily available or apparent concerning establishments or the circumstances and behavior of persons, usually with the aim of preventing a crime;
- e) making arrests; and
- f) testifying in courts of law or reporting to superiors about circumstances and results of investigations.

**Examples:**

Fingerprint examiner	Police detective
Fingerprint technician	Police inspector
Intelligence agent	Police inquiry agent
Intelligence assistant	Police/criminal investigator
Investigation agent	Polygraph examiner
Jail inspector	Defense research officer
Jail officer	Special agent

**3359 GOVERNMENT REGULATORY ASSOCIATE PROFESSIONALS NOT ELSEWHERE CLASSIFIED**

This unit group covers government regulatory associate professionals not classified elsewhere in Major group 3, Technicians and associate professionals. For instance the group includes agricultural, fisheries, forestry, prices, wages and weights and measures inspectors.

Their tasks include:

- a) examining places of business to ensure the use of correct weights and measures in trade;
- b) monitoring price regulations to assess appropriateness of costs for goods and services to protect consumer interests;
- c) monitoring wage regulations to ensure appropriate levels of pay for work performed and to assess compliance with employment standards legislation; and
- d) performing related investigative and administrative tasks to record findings, document compliance problems or inappropriate business practices and to prepare reports and correspondence.

**Examples:**

Agricultural inspector	Market inspector
Fisheries inspector	Prices inspector
Forest concession guard	Public services inspector
Forestry inspector	Rodent zone inspector
Land management inspector	Wage inspector
Land management officer	Weights and measures inspector

**34 LEGAL, SOCIAL, CULTURAL AND RELATED PROFESSIONALS**

Legal, social, cultural and related associate professionals perform technical tasks connected with the practical application of knowledge relating to legal services, social work, culture, food preparation, sport and religion.

Tasks performed in this sub-major group usually include: providing technical and practical services and support functions in legal processes and investigations, social and community assistance programs, and religious and cultural activities; participating and adjudicating in sporting events; developing and delivering sports coaching, fitness and recreational programmes; combining creative and technical skills in a variety of artistic, cultural and culinary activities; creating dishes and menus and overseeing the preparation of meals.

**341 LEGAL, SOCIAL AND RELIGIOUS ASSOCIATE PROFESSIONALS**

Legal, social and religious associate professionals provide technical and practical services and support functions in legal processes and investigations, social and community assistance programs and religious activities.

Tasks performed usually include: assisting and supporting legal, social work and religious professionals; obtaining and analyzing evidence, preparing legal documents and serving court orders; administering and implementing social assistance programs and community services; assisting clients to deal with personal and social problems; providing practical assistance, guidance and moral support to individuals and communities.

**3411 LEGAL AND RELATED ASSOCIATE PROFESSIONALS**

Legal and related associate professionals perform support functions in courts of law or in law offices, provide services related to such legal matters as insurance contracts, the transferring of property and the granting of loans and other financial transactions or conduct investigations for clients.

Their tasks include:

- a) documenting court proceedings and judgements;
- b) serving statements of claims, summonses, warrants, subpoenas and other court orders;
- c) maintaining order in court and hearing rooms;
- d) preparing legal documents including trial briefs, pleadings, appeals, wills and contracts and preparing, papers summarizing legal positions, or setting out conditions of loans or insurance;
- e) investigating facts, assembling evidence and researching relevant statutes, decisions and other legal documents to prepare cases;
- f) advising clients on legal matters;
- g) examining documentation such as mortgages, liens, judgements, easements, contracts and maps in order to verify properties' legal descriptions and ownership;
- h) preparing documents relating to transfer of real estate, stocks or other matters requiring formal registration;
- i) investigating possible cases of theft of goods, money or information from business establishments and of other possible cases of unlawful behavior by customers or employees; and
- j) investigating establishments or the circumstances and behavior of persons on behalf of clients.

**Examples:**

Clerk of the tribunal	Legal assistant
Clerk of court/judge/law	Legislative staff assistant
Court legal service chief	Legislative staff officer
Court legal officer	Local legislative officer
Fiscal examiner	Paralegal
Graft investigation officer	Private detective
Justice of the peace	Title searcher
Judge's clerk	House detective (hotel)
Legal aide	Private inquiry agent

**3412 SOCIAL WORK ASSOCIATE PROFESSIONALS**

Social work associate professionals administer and implement social assistance programs and community services and assist clients to deal with personal and social problems.

Their tasks include:

- a) collecting information relevant to clients' needs and assessing their relevant skills, strengths and deficits;
- b) helping persons with disabilities or the elderly to obtain services and to improve their ability to function in society;
- c) assisting clients to identify options and develop plans of action while providing necessary support and assistance;
- d) assisting clients to identify and access community resources including legal, medical and financial assistance, housing, employment, transportation, assistance with moves, day care and other referral services;
- e) counselling clients living in group homes and half-way houses, supervising their activities and assisting in pre-release and release planning;



- f) participating in the selection and admission of clients to appropriate programs;
- g) providing crisis intervention and emergency shelter services;
- h) implementing life skills workshops, substance abuse treatment programs, behavior management programs, youth services programs and other community and social service programs under the supervision of social work or health care professionals;
- i) assisting in evaluating the effectiveness of interventions and programs by monitoring and reporting on clients' progress; and
- j) maintaining contact with other social service agencies, schools and health care providers involved with clients to provide information and obtain feedback on clients' overall situation and progress.

**Examples:**

Barangay affairs worker	Outreach project worker
Community development worker	Psychiatric social worker assistant
Community service worker	Relief and rehabilitation worker
Crisis intervention worker	Social welfare assistant/aide
Culture center worker assistant	Veterans assistance officer
Day care worker	Volunteer service officer
Disability services officer	Women's shelter supervisor
Family service worker	Welfare support worker
Life skills instructor	Youth development assistant
Mental health worker	Youth worker

**3413 RELIGIOUS ASSOCIATE PROFESSIONALS**

Religious associate professionals provide support to ministers of religion or to a religious community, undertake religious works, preach and propagate the teachings of a particular religion and endeavor to improve well-being through the power of faith and spiritual advice.

Their tasks include:

- a) undertaking religious works;
- b) preaching and propagating the teachings of a particular religious faith;
- c) assisting at services of public worship and religious rites;
- d) providing religious education, spiritual guidance and moral support to individuals and communities;
- e) administering and participating in programs to provide food, clothing and shelter to those in need; and
- f) advising communities and individuals on proper behavior and faith to preserve or improve well-being.

**Examples:**

Tribal Ritualists (e.g. Mambunong, Mumbaki, Mabaki, Mensapo and Anituwan in Cordilleras)	Lay preacher
Catechist	Monk
Lay evangelist	Nun
Lay minister	Parish workers
	Religious workers

**342 SPORTS AND FITNESS WORKERS**

Sports and fitness workers prepare for and compete in sporting events for financial gain, train amateur and professional sportsmen and women to enhance performance, promote participation and standards in sport, organize and officiate sporting events, and provide instruction, training and supervision for various forms of exercise and other recreational activities.

Tasks performed usually include: participating in competitive sporting events; conducting sports training to develop ability in and knowledge of the sport; compiling rules concerning the conduct of sporting competitions, and controlling the progress of these events; planning, organizing and conducting practice sessions; developing and designing fitness programmes; delivering group exercise classes and personal tuition in a variety of fitness activities; promoting sports and sports skills development, and overseeing the participation of young people in sport.

#### **3421 ATHLETES AND SPORTS PLAYERS**

Athletes and sport players participate in competitive sporting events. They train and compete, either individually or as part of a team, in their chosen sport.

Their tasks include:

- a) participating in competitive sporting events;
- b) participating in regular practice and training sessions and undertaking private training to maintain the required standard of fitness and skill;
- c) undertaking sports promotional activities and media interviews;
- d) maintaining a high degree of expertise in a particular sport;
- e) deciding on strategies in consultation with coaches;
- f) assessing other competitors and conditions at venues;
- g) competing in sporting events; and
- h) adhering to the rules and regulations associated with a specific sport.

##### **Example:**

Athletes, all sports

#### **3422 SPORTS COACHES, INSTRUCTORS AND OFFICIALS**

Sports coaches, instructors and officials work with amateur and professional sportspersons to enhance performance, encourage greater participation in sport, and organize and officiate in sporting events according to established rules.

Their tasks include:

- a) identifying strengths and weaknesses of athletes or teams;
- b) planning, developing and implementing training and practice sessions;
- c) developing, planning and coordinating competitive schedules and programs;
- d) motivating and preparing athletes or teams for competitive events or games;
- e) formulating competitive strategy, developing game plans and directing athletes and players during games or athletic events;
- f) analyzing and evaluating athletes' or teams' performances and modifying training programs;
- g) monitoring and analyzing technique and performance, and determining how future improvements can be made;
- h) officiating at sporting events or athletic competitions to maintain standards of play and to ensure that game rules and safety regulations are observed;
- i) recording lapsed time and keeping scores during events or competitions;
- j) judging the performance of competitors, awarding points, imposing penalties for infractions and determining results; and
- k) compiling scores and other athletic records.

##### **Examples:**

Coach, sports  
Official, sports  
Referee

Sports and games regulation officer  
Sports trainer/instructor

**3423 FITNESS AND RECREATION INSTRUCTORS AND PROGRAM LEADERS**

Fitness and recreation instructors and program leaders lead, guide and instruct groups and individuals in recreational, fitness or outdoor adventure activities.

Their tasks include:

- a) planning and carrying out recreational and fitness activities;
- b) monitoring recreational, sports or fitness activities to ensure safety and provide emergency or first aid assistance when required;
- c) evaluating and monitoring clients' abilities and fitness and recommending activities;
- d) demonstrating and teaching body movements, concepts and skills used in fitness routines and recreational activities;
- e) instructing in the use of equipment; and
- f) explaining and enforcing safety procedures, rules and regulations.

**Examples:**

Aerobics instructor	Personal trainer
Fitness instructor	Sailing instructor
Horse riding instructor	Underwater diving instructor
Outdoor adventure guide	

**343 ARTISTIC, CULTURAL AND CULINARY ASSOCIATE PROFESSIONALS**

Artistic, cultural and culinary associate professionals combine creative skills and technical and cultural knowledge in taking and processing still photographs; design and decoration of theatre sets, shop displays and the interiors of homes; preparation of objects for display; maintenance of library and gallery collections, records and cataloguing systems; creation of menus and preparation and presentation of food; provision of support for stage, film and television production; and in other areas of artistic and cultural endeavor.

Tasks performed usually include: operating still cameras to photograph people, events, scenes, materials, products and other subjects; applying artistic techniques to product design, interior decoration and sales promotion; mounting and preparing objects for display; designing and arranging exhibit furnishings, display cases and display areas; designing menus and overseeing the preparation of food; assisting directors and performers with the staging of theatrical, motion picture, television or commercial productions.

**3431 PHOTOGRAPHERS**

Photographers operate still cameras to photograph people, events, scenes, materials, products and other subjects.

Their tasks include:

- a) taking photographs for advertising, or other commercial, industrial or scientific purposes and to illustrate stories and articles in newspapers, magazines and other publications;
- b) taking portrait photographs of persons and groups of persons;
- c) studying requirements of a particular assignment and decide on type of camera, film, lighting and background accessories to be used;
- d) determining picture composition, making technical adjustments to equipment and photograph subject;
- e) operating scanners to transfer photographic images to computers;
- f) operating computers to manipulate photographic images;
- g) adapting existing photographic images to create new digitized images to be included in multimedia products; and

- h) using airbrush, computer or other techniques to create the desired visual effect.

**Examples:**

Aerial photographer	Photo journalist
Commercial photographer	Photographers
Industrial photographer	Photographic color processor
News photographer	Portrait photographer
Photo editor	Scientific photographer

**3432 INTERIOR DESIGNERS AND DECORATORS**

Interior designers and decorators plan and design commercial, industrial, public, retail and residential building interiors to produce an environment tailored to a purpose, taking into consideration factors that enhance living and working environments and sales promotion. They coordinate and participate in their construction and decoration.

Their tasks include:

- a) determining the objectives and constraints of the design brief by consulting with clients and stakeholders;
- b) researching and analyzing spatial, functional, efficiency, safety and aesthetic requirements;
- c) formulating design concepts for the interiors of buildings;
- d) preparing sketches, diagrams, illustrations and plans to communicate design concepts;
- e) negotiating design solutions with clients, management, suppliers and construction staff;
- f) selecting, specifying and recommending functional and aesthetic materials, furniture and products for interiors;
- g) detailing and documenting selected design for construction;
- h) coordinating the construction and the decoration of interiors;
- i) designing and painting stage scenery; and
- j) designing and decorating show windows and other display areas to promote products and services.

**Examples:**

Commercial decorator and designer	Interior decorator
Display artist	Interior designer
Display decorator	Set designer
Industrial and commercial products designer	Visual merchandiser
	Window dresser

**3433 GALLERY, MUSEUM AND LIBRARY TECHNICIANS**

Gallery, museum and library technicians prepare artworks, specimens and artefacts for collections, arrange and construct gallery exhibits, and assist librarians to organize and operate systems for handling recorded material and files.

Their tasks include:

- a) mounting and preparing objects for display;
- b) designing and arranging exhibit furnishings, display cases and display areas;
- c) assisting in setting up lighting and display equipment;
- d) receiving, shipping, packing and unpacking exhibits;
- e) ordering new library materials and maintaining library records and circulation systems;
- f) cataloguing printed and recorded material;

- g) entering data into databases and editing computer records;
- h) operating audiovisual and reprographic equipment; and
- i) searching and verifying bibliographic data.

**Examples:**

Gallery technician  
Library technician  
Museum technician

Taxidermist  
Philatelist

**3434 CHEFS**

Chefs design menus, create dishes and oversee the planning, organization preparation and cooking of meals in hotels, restaurants and other eating places, on board ships, on passenger trains and in private households.

Their tasks include:

- a) planning and developing recipes and menus, estimating food and labor costs, and ordering food supplies;
- b) monitoring quality of dishes at all stages of preparation and presentation;
- c) discussing food preparation issues with managers, dieticians, kitchen and waiting staff;
- d) supervising and coordinating the activities of cooks and other workers engaged in food preparation;
- e) inspecting supplies, equipment, and work areas to ensure conformance to established standards;
- f) determining how food should be presented, and creating decorative food displays;
- g) instructing cooks and other workers in the preparation, cooking, garnishing, and presentation of food;
- h) participating on the recruitment of kitchen staff and monitoring their performance;
- i) preparing, seasoning and cooking specialty foods and complex dishes; and
- j) explaining and enforcing hygiene and food safety regulations.

**Examples:**

Assistant chef  
Chef  
Commis chef  
Executive chef

Head chef  
Pastry chef  
Saucier  
Sous-chef

**3435 ARTISTIC AND CULTURAL ASSOCIATE PROFESSIONAL NOT ELSEWHERE CLASSIFIED**

This unit group covers artistic and cultural associate professionals not classified elsewhere in Minor Group 344, Artistic, cultural and culinary associate professionals. For instance those who assist directors or actors with staging of theatrical, motion picture, television or commercial productions are classified here.

**Examples:**

Body artist  
Floor manager (broadcasting)  
Lighting technician  
Program coordinator (broadcasting)  
Prompter  
Property master (broadcasting)  
Script, girl/boy  
Special effects technician

Stage manager  
Stage technician  
Stunt artist  
Stunt-coordinator  
Tattooist  
Theatre technician  
Theatrical dresser  
Walker-on

### 35 INFORMATION AND COMMUNICATIONS TECHNICIANS

Information and communications technicians provide support for the day-to-day running of computer systems, communications systems and networks and perform technical tasks related to telecommunications, broadcast of image and sound as well as other types of telecommunications signals on land, sea or in aircraft.

Tasks performed by workers in this sub-major group usually include: providing assistance to information and communications systems users ; installing new programs and equipment; establishing, operating and maintaining network and other data communications systems; installing, monitoring and supporting Internet and Intranet websites or web server hardware or software; modifying web pages; and performing web server backup and recovery operations; controlling equipment to record sound, edit and mix image and sound recordings; controlling and maintaining transmitting and broadcast systems and satellite systems for radio and television programmes; controlling and maintaining radio communications systems, satellite services, and multiplex systems on land, sea or in aircraft; providing technical assistance connected with research and the development of computer systems and telecommunications equipment, or testing prototypes; designing and preparing blueprints of circuitry according to the specifications given; providing technical supervision of the manufacture, utilization, maintenance and repair of telecommunications systems.

#### 351 INFORMATION AND COMMUNICATIONS TECHNOLOGY OPERATIONS AND USER SUPPORT TECHNICIANS

Information technology operations and user support technicians provide support for the day-to-day running of communications systems, computer systems and networks and provide technical assistance to users.

Tasks performed usually include: operating and controlling peripheral and related computer equipment; monitoring systems for equipment failure or errors in performance; loading peripheral equipment, such as printers, with selected materials for operating runs, or oversee loading of peripheral equipment by peripheral equipment operators; answering user inquiries regarding software or hardware operation to resolve problems; installing and performing minor repairs to hardware, software, or peripheral equipment, following design or installation specifications; overseeing the daily performance of systems; setting up equipment for employee use, performing or ensuring proper installation of cables, operating systems, or appropriate software; establishing, operating and maintaining network and other data communications systems; installing, monitoring and supporting the reliability and usability of Internet and Intranet websites or web server hardware or software; modifying web pages; and performing web server backup and recovery operations.

##### 3511 INFORMATION AND COMMUNICATIONS TECHNOLOGY OPERATIONS TECHNICIANS

Information and communications technology operations technicians support the day-to-day processing, operation and monitoring of information and communications technology systems, peripherals, hardware, software and related computer equipment to ensure optimal performance, and identify any problems.

Their tasks include:

- a) operating and controlling peripheral and related computer equipment;
- b) entering commands, using computer terminal, and activating controls on computer and peripheral equipment to integrate and operate equipment;
- c) monitoring systems for equipment failure or errors in performance;
- d) notifying supervisor or maintenance technician of equipment malfunctions;
- e) responding to program error messages by finding and correcting problems, escalating the problem to other staff or terminating the program;

- f) reading job set-up instructions to determine equipment to be used, order of use, material such as disks and paper to be loaded, and control settings;
- g) retrieving, separating and sorting program output as needed, and sending data to specified users; and
- h) loading peripheral equipment, such as printers, with selected materials for operating runs, or oversee loading of peripheral equipment by peripheral equipment operators.

**Examples:**

AutoCAD operator	Digital systems computer operator
Computer aided design (CAD) operator	EDP operator
Computer graphic layout operator	Electronic computer operator
Computer maintenance specialist	High-speed computer printer operator
Computer maintenance technologist	IT and LAN technician
Computer peripheral equipment operator	Micro computer operator
Computer operator	Micro editor operator
Computer technicians	Micro filming machine operator
Data entry machine operator	Punched-card machine operator
	Web offset operator

**3512 INFORMATION AND COMMUNICATIONS TECHNOLOGY USER SUPPORT TECHNICIANS**

Information and communications technology user support technicians provide technical assistance to users, either directly or by telephone, e-mail or other electronic means, including diagnosing and resolving issues and problems with software, hardware, computer peripheral equipment, networks, databases and the Internet, and providing guidance and support in the deployment, installation and maintenance of systems.

Their tasks include:

- a) answering user inquiries regarding software or hardware operation to resolve problems;
- b) entering commands and observing system functioning to verify correct operations and detect errors;
- c) installing and performing minor repairs to hardware, software, or peripheral equipment, following design or installation specifications;
- d) overseeing the daily performance of communications and computer systems;
- e) setting up equipment for employee use, performing or ensuring proper installation of cables, operating systems, or appropriate software;
- f) maintaining records of daily data communication transactions, problems and remedial actions taken, or installation activities;
- g) emulating or reproducing technical problems encountered by users; and
- h) consulting user guides, technical manuals and other documents to research and implement solutions.

**Examples:**

Communications assistant (ICT)	Computer programming assistant
Computer database assistant	Computer systems analysis assistant
Computer engineering assistant	EDP assistant
Computer help desk operator	

**3513 COMPUTER NETWORK AND SYSTEMS TECHNICIANS**

Computer network and systems technicians establish, operate and maintain network and other data communications systems.

Their tasks include:

- a) operating, maintaining and troubleshooting network systems;
- b) operating and maintaining data communications systems other than networks;
- c) assisting users with network and data communications problems;
- d) identifying areas needing upgraded equipment and software;
- e) installing computer hardware, network software, operating system software and applications software; and
- f) performing start up and close down as well as backup and disaster recovery operations for computer networks.

**Examples:**

Computer network technician

Network support technician

### **3514 WEB TECHNICIANS**

Web technicians maintain, monitor and support the optimal functioning of Internet and Intranet websites and web server hardware and software.

Their tasks include:

- a) installing, monitoring and supporting the reliability and usability of Internet and Intranet websites or web server hardware or software;
- b) developing and maintaining documentation, policies and instructions, recording operational procedures and system logs;
- c) developing, coordinating, implementing and monitoring security measures;
- d) analyzing and making recommendations to enhance performance, including upgrading and acquiring new systems;
- e) liaising with, and providing guidance to, clients and users;
- f) modifying web pages; and
- g) performing web server backup and recovery operations.

**Examples:**

Website administrator

Website technician

Webmaster

### **352 TELECOMMUNICATIONS AND BROADCASTING TECHNICIANS**

Telecommunications and broadcasting technicians control technical functioning of equipment to record and edit images and sound and for transmitting radio and television broadcasts of images and sounds, as well as other types of telecommunication signals on land, sea or in aircraft, perform technical tasks connected with telecommunications engineering research and with the design, manufacture, assembly, construction, operation, maintenance and repair of telecommunications systems.

Tasks performed usually include: controlling equipment to record sound, edit and mix image and sound recordings; controlling and maintaining transmitting and broadcast systems and satellite systems for radio and television programmes; controlling and maintaining radio communications systems, satellite services, and multiplex systems on land, sea or in aircraft; providing technical assistance connected with research and the development of telecommunications equipment, or testing prototypes; designing and preparing blueprints of circuitry according to the specifications given; providing technical supervision of the manufacture, utilization, maintenance and repair of telecommunications systems.



**3521 BROADCASTING AND AUDIO-VISUAL TECHNICIANS**

Broadcasting and audio-visual technicians control technical functioning of equipment to record and edit images and sound and for transmitting radio and television broadcasts of images and sounds, as well as other types of telecommunication signals on land, sea or in aircraft.

Their tasks include:

- a) controlling equipment to record sound;
- b) controlling equipment to edit and mix image and sound recordings to ensure satisfactory quality and to create special image and sound effects;
- c) applying knowledge of principles and practices of image and sound recording and editing in order to identify and solve problems;
- d) controlling transmitting and broadcast systems and satellite systems for radio and television programmes;
- e) controlling radio communications systems, satellite services, and multiplex systems on land, sea or in aircraft;
- f) applying knowledge of principles and practices of broadcasting, telecommunications terminals and transmissions systems, in order to identify and solve problems; and
- g) making emergency repairs to equipment.

**Examples:**

Audio-visual operator	Radio telephone operator
Broadcast technician	Radio/TV transmitting equipment operator
Broadcasting automation system support	Ship radio operator
Broadcasting equipment operator	Telegrapher
Camera control unit technician	Transmitter technician
Cameraman/woman (motion picture)	Transmitting equipment operator
Cameraman/woman (video)	Transmitting equipment technician
CCTV operator	TV broadcasting equipment operator
Cinema projectionist	Video operator
Movie equipment technician	Videographer
Production assistant (media)	Camera operator
Radio broadcasting equipment operator	Sound technician
Radio communication technician	Video technician
Radio controller	Film camera operator
Radio frequency coordinator	Broadcasting and Telecommunications
Radio operator	Equipment Operators
Radio production technician	

**3522 TELECOMMUNICATIONS ENGINEERING TECHNICIANS**

Telecommunications engineering technicians perform technical tasks connected with telecommunications engineering research, as well as with the design, manufacture, assembly, construction, operation, maintenance and repair of telecommunications systems.

Their tasks include:

- a) providing technical assistance connected with research and the development of telecommunications equipment, or testing prototypes;
- b) studying technical material such as blue prints and sketches to determine the method of work to be adopted;
- c) preparing detailed estimates of quantities and costs of materials and labor required for the manufacture and installation of telecommunications equipment, according to the specifications given;
- d) providing technical supervision of the manufacture, utilization, maintenance

- and repair of telecommunications systems to ensure satisfactory performance and compliance with specifications and regulations; and
- e) applying technical knowledge of telecommunications engineering principles and practices in order to identify and solve problems arising in the course of their work.

**Examples:**

Engineering technician  
(telecommunications)

## MAJOR GROUP 4

### CLERICAL SUPPORT WORKERS

Clerical support workers record, organize, store, compute and retrieve information-related; and perform a number of clerical duties in connection with money-handling operations, travel arrangements, requests for information, and appointments. Most occupations in this Major Group require skills at the second ISCO skill level.

Tasks performed by clerical support workers usually include: stenography, typing, and operating word processors and other office machines; entering data into computers; carrying out secretarial duties; recording and computing numerical data; keeping records relating to stocks, production and transport; keeping records relating to passenger and freight transport; carrying out clerical duties in libraries; filing documents; carrying out duties in connection with mail services; preparing and checking material for printing; writing on behalf of illiterate persons; performing money-handling operations; dealing with travel arrangements; supplying information requested by clients and making appointments; and operating a telephone switchboard. Supervision of other workers may be included.

#### 41 GENERAL AND KEYBOARD CLERKS

General and keyboard clerks record, organize, store and retrieve information; and perform a range of clerical and administrative tasks according to established procedures.

Tasks performed by workers in this Sub-Major Group usually include: operating personal computers, word-processors or typewriters; recording, inputting and processing data using computers; recording input and processing text; calculating; bookkeeping and similar office machines to input and process text and data; and performing a wide range of general clerical duties including preparing invoices, checking figures, filing, faxing or processing mail.

##### 411 4110 GENERAL OFFICE CLERKS

General office clerks perform a range of clerical and administrative tasks according to established procedures.

Their tasks include:

- a) recording, preparing, sorting, classifying and filing information;
- b) sorting, opening and sending mail;
- c) photocopying and sending documents;
- d) preparing reports and correspondence of a routine nature;
- e) recording issue of equipment to staff;
- f) responding to telephone or electronic enquiries or forwarding to appropriate person;
- g) checking figures, preparing invoices and recording details of financial transactions made; and
- h) transcribing information into computers, and proof-reading and correcting copy.

##### Examples:

Administrative clerk  
Enumerator clerk  
Field clerk  
Fiscal clerk  
General office clerk  
Laboratory clerk  
List/Addresses clerk  
Maintenance clerk

Office clerk  
Office equipment clerk  
Receiving clerk  
Records/Personnel clerk  
Telefax clerk  
Teleprinter clerk  
Telex clerk  
Timekeeper clerk

**412 4120 SECRETARIES (GENERAL)**

Secretaries (general) use typewriters, personal computers or other word-processing equipment to transcribe correspondence and other documents; check and format documents prepared by other staff; deal with incoming and outgoing mail; screen requests for meetings or appointments; and perform a variety of administrative support tasks.

Their tasks include:

- a) checking, formatting and transcribing correspondence, minutes and reports from dictation, electronic documents or written drafts to conform to office standards, using typewriter, personal computer or other word processing equipment;
- b) using various computer software packages, including spreadsheets, to provide administrative support;
- c) dealing with incoming or outgoing mail;
- d) scanning, recording and distributing mail, correspondence and documents;
- e) screening requests for meetings or appointments and helping to organize meetings;
- f) screening and recording leave and other staff-members' entitlements;
- g) organizing and supervising filing systems; and
- h) dealing with routine correspondence on their own initiative.

**Examples:**

Community organizer secretary  
Marketing secretary  
Office secretary  
Parish secretary

Sales secretary  
Secretary  
Typing secretary  
Word processing secretary

**413 KEYBOARD OPERATORS**

Keyboard operators input and process text and data; and prepare, edit and generate documents for storage, processing, publication and transmission.

Tasks performed usually include: entering data and codes required to process information; retrieving, confirming and updating data in storage and keeping records of data input; taking records of proceedings in rapid shorthand using computerized equipment and shorthand-writing machines; transcribing information recorded in shorthand and on sound recording equipment, and proofreading and correcting copy; and reproducing the spoken word, environmental sounds and song lyrics as captions for cinema and television programming.

**4131 TYPISTS AND WORD PROCESSING OPERATORS**

Typists and word processing operators type, edit and print using typewriter, personal computer or word processor; and record oral or written matter in shorthand.

Their tasks include:

- a) typing written material from rough drafts, corrected copies, voice recordings, or shorthand using a computer, word processor or typewriter;
- b) checking completed work for proper spelling, grammar, punctuation and formatting;
- c) gathering and arranging the material to be typed, following instructions;
- d) filing and storing completed documents on computer hard drive or disk, or maintaining a computer filing system to store, retrieve or update documents;
- e) taking dictation and recording other matter in shorthand;

- f) reproducing the spoken word, environmental sounds and song lyrics as captions for cinema and television programming; and
- g) transcribing information recorded in shorthand and on sound recording equipment.

**Examples:**

Legal stenographer	Stenographic reporter
Shorthand typist	Steno recorder
Stenographer	Word processing clerk
Stenographer-typist	Word processor

**4132 DATA ENTRY CLERKS**

Data entry clerks enter coded, statistical, financial and other numerical data into electronic equipment, computerized databases, spreadsheets or other data repositories using a keyboard, mouse, or optical scanner, speech recognition software or other data entry tools. They enter data into mechanical and electronic devices to perform mathematical calculations.

Their tasks include:

- a) receiving and registering invoices, forms, records and other documents for data capture;
- b) entering numerical data, codes and text from source material into computer-compatible storage and processing devices;
- c) verifying accuracy and completeness of data and correcting entered data, if needed;
- d) operating bookkeeping and calculating machines; and
- e) importing and exporting data between different database systems and softwares.

**Examples:**

Computer keyer	Data entry/punching machine clerk (card and tape)
Data entry operator	
Data entry/computer clerk	Data input clerk
Data entry/converter clerk (card-to-tape)	Data processor clerk
Data entry/electronic mail clerk	Data tabulator clerk
Data entry/encoder clerk	Data transcriber clerk
Data enumerator clerk	

**42 CUSTOMER SERVICE CLERKS**

Customer service clerks deal with clients in connection with money-handling operations, travel arrangements, requests for information, making appointments, operating telephone switchboards; and interviewing for surveys or to complete applications for eligibility for services.

Tasks performed by workers in this Sub-Major Group include: performing money-handling operations in banks, post offices, betting and gambling establishments; or dealing with travel arrangements; supplying information requested by clients and making appointments; operating telephone switchboards; greeting and receiving visitors; interviewing survey respondents; and interviewing applicants for services.

**421 TELLERS, MONEY COLLECTORS AND RELATED CLERKS**

Tellers, money collectors and related clerks perform money-handling operations in establishments relating to banking, postal services, betting or gambling, pawning and debt-collecting.

Tasks performed usually include: dealing with clients of banks or post offices in connection with money operations or postal services; receiving and paying off bets on results of sporting events; conducting gambling games; lending money against articles deposited or other securities; and collecting debts and other payments.

#### **4211 BANK TELLERS AND RELATED CLERKS**

Bank tellers and related clerks deal directly with clients of banks or post offices in connection with receiving, changing and paying out money; or providing mail services.

Their tasks include:

- a) processing customer cash deposits and withdrawals, cheques, transfers, bills, credit card payments, money orders, certified cheques and other related banking transactions;
- b) crediting and debiting clients' accounts;
- c) paying bills and making money transfers on clients' behalf;
- d) receiving mail, selling postage stamps and conducting other post office counter business such as bill payments, money transfers and related business;
- e) changing money from one currency to another, as requested by clients; and
- f) making records of all transactions and reconciling them with cash balance.

##### **Examples:**

Bank cashier

Paymaster

Bank teller

Post office counter clerk

Disbursing clerk

Telegraphic transfer service clerk

Money changer

#### **4212 BOOKMAKERS, CROUPIERS/DEALERS AND RELATED GAMING WORKERS**

Bookmakers, croupiers/dealers and related gaming workers determine odds and receive and pay off bets on results of sporting or other events; or conduct games of chance in gambling establishments.

Their tasks include:

- a) determining risks to decide odds and to hedge or refuse bets;
- b) preparing and issuing lists of approximate odds;
- c) distributing cards, rolling dice or spinning a roulette wheel;
- d) explaining and interpreting operating rules of a gambling establishment; and
- e) announcing winning numbers, paying winners and collecting payments from losers.

##### **Examples:**

Bookmaker

Croupier/Dealer

#### **4213 PAWNBROKERS AND MONEY LENDERS**

Pawnbrokers and money lenders lend money against articles deposited as pledges, or against property or other security.

Their tasks include:

- a) evaluating articles offered as pledges, calculating interest, and lending money;
- b) returning articles when the loan is paid or, in the event of non-payment, selling pledged articles;
- c) lending money as personal loans against success of future harvest and other similar undertakings;

- d) collecting loans when the pledge involved the success of future harvest and other similar undertakings; and
- e) keeping a record of items received and money distributed and received.

**Examples:**

Loan clerk	Money lender
Loan processor	Pawnbroker

**4214 DEBT COLLECTORS AND RELATED WORKERS**

Debt collectors and related workers collect payments on overdue accounts and bad cheques and collect charity payments.

Their tasks include:

- a) tracing and locating debtors;
- b) telephoning, visiting, or writing to customers to collect money or arrange for later payments;
- c) preparing reports including amounts collected and maintain records and files related to collection work;
- d) recommending legal action or discontinuation of service when payment cannot be otherwise obtained; and
- e) asking for and collecting charity payments.

**Examples:**

Bank collector	Collection clerk
Bill and account collector	Credit and collection clerk
Bill courier	Debt collector
Billing clerk	Payment entry clerk
Charity collector	

**422 CLIENT INFORMATION WORKERS**

Client information workers provide or obtain information in person, by telephone or electronic means such as e-mail in connection with making travel arrangements; describing the products or services of an organization; registering and greeting guests and visitors; making appointments; connecting telephone calls; and collecting information from survey respondents or applicants for services.

Tasks performed usually include: preparing itineraries and making travel and hotel reservations for clients; greeting and receiving clients and visitors; registering accommodation guests; providing information concerning the goods, services or policies of an organization; making appointments; operating a telephone switchboard; and interviewing survey respondents and applicants for eligibility.

**4221 TRAVEL CONSULTANTS AND CLERKS**

Travel consultants and clerks supply information, arrange travel itineraries, obtain travel and accommodation reservations; and organize group tours.

Their tasks include:

- a) obtaining information about the availability, cost and convenience of different types of transport and accommodation; ascertaining customer's requirements and advising them on travel arrangements;
- b) preparing itineraries;
- c) making and confirming reservations;

- d) issuing tickets and vouchers;
- e) helping customers in obtaining necessary travel documents such as visas;
- f) preparing bills and receiving payments; and
- g) organizing group tours for business or vacation travel and selling them to groups or individuals.

**Examples:**

Ticket issuing/travel clerk  
 Travel agency clerk  
 Travel consultant

Travel organizer  
 Travel/Airlines clerk

**4222 CONTACT CENTER INFORMATION CLERKS**

Contact center information clerks provide advice and information to clients; respond to queries regarding a company's or an organization's goods, services or policies; and process financial transactions using the telephone or electronic communications media, such as email. They are located in premises that may be remote from clients or other operations of the organizations or companies about whom information is provided.

Their tasks include:

- a) dealing with incoming calls and messages from clients, whether to answer queries, handle calls for service or sort out complaints;
- b) identifying requirements and entering events into a computer system;
- c) dispatching tasks to other units, when relevant;
- d) invoicing or handling payments, where necessary;
- e) sending letters, information sheets and other documents to clients; and
- f) advising clients of additional products or services.

**Examples:**

Call center agent  
 Call center assistant/representative  
 Customer contact center information clerk

Customer service assistant  
 Customer service representative

**4223 TELEPHONE SWITCHBOARD OPERATORS**

Telephone switchboard operators operate telephone communications switchboards and consoles to establish telephone connections; receive caller inquiries and service problem reports; and record and relay messages to staff or clients.

Their tasks include:

- a) operating switchboards and consoles to connect, hold, transfer, and disconnect telephone calls;
- b) making connections for outgoing calls;
- c) dealing with telephone inquiries and recording messages;
- d) forwarding messages to staff or clients; and
- e) investigating operating system problems and informing repair services.

**Examples:**

Answering service operator  
 Career relation payphone and access services  
 Communication telephone operator

Message handling operator  
 Telephone operator  
 Telephone switchboard operator



**4224 HOTEL RECEPTIONISTS**

Hotel receptionists register guests; assign rooms; issue keys; provide information concerning the hotel services; make room reservations; keep a record of rooms available for occupancy; and present statements of charges to departing guests and receive payment.

Their tasks include:

- a) maintaining an inventory of rooms available for occupancy, reservations and room assignments;
- b) registering arriving guests, assigning rooms; verifying customer's credit and issuing room keys;
- c) providing information regarding hotel services and services available in the community;
- d) providing information about availability of accommodation and making room reservations;
- e) responding to guests' requests for housekeeping and maintenance services as well as complaints;
- f) contacting housekeeping or maintenance services when guests report problems;
- g) compiling and checking guest accounts for charges using computerized or manual systems;
- h) receiving and forwarding messages in person or using telephone or telephone switchboard; and
- i) reviewing statements of charges to departing guests and receiving payment.

**Examples:**

Hotel front desk clerk

Hotel receptionist

**4225 ENQUIRY CLERKS**

Enquiry clerks respond to personal, written, electronic mail, and telephone enquiries and complaints about the organization's goods, services and policies, provide information and refer people to other sources. They are employed in locations which put them in direct contact with clients or with the production of the goods and services provided.

Their tasks include:

- a) answering inquiries about goods, services and policies, and providing information about their availability, location, price and related issues;
- b) responding to enquiries about problems and providing advice, information and assistance;
- c) recording information about enquiries and complaints;
- d) referring complex enquiries to team leaders or expert advisers; and
- e) issuing relevant forms, information kits and brochures to interested parties.

**Examples:**

Counter clerk

Information clerk

Counter enquiries clerk

Reservation clerk

Desk clerk

**4226 RECEPTIONISTS (GENERAL)**

Receptionists (general) receive and welcome visitors, clients, or guests; and respond to enquiries and requests, including arranging for appointments.

Their tasks include:

- a) receiving and welcoming visitors, guests or clients;
- b) making appointments for clients;
- c) dealing with telephone requests for information or appointments;
- d) directing clients to appropriate location or person; and
- e) supplying information pamphlets, brochures or forms.

**Examples:**

Medical receptionist

Receptionist

**4227 SURVEY AND MARKET RESEARCH INTERVIEWERS**

Survey and market research interviewers interview people and record their responses to survey and market research questions on a range of topics.

Their tasks include:

- a) contacting individuals by telephone or in person and explaining the purpose of the interview;
- b) asking questions following the outlines of questionnaires and surveys;
- c) recording responses on paper or entering responses directly into a computer database through computer-assisted interviewing systems;
- d) identifying and resolving inconsistencies in responses; and
- e) providing feedback to survey sponsors concerning problems in obtaining valid data.

**Examples:**

Market research interviewer

Public opinion interviewer

Survey interviewer

**4229 CLIENT INFORMATION WORKERS NOT ELSEWHERE CLASSIFIED**

This Unit Group includes client information workers not elsewhere classified in Minor Group 422. Client information workers. For instance, it includes workers who obtain and process information from clients needed to determine eligibility for services.

In such cases, tasks would include:

- a) interviewing patients to obtain and process information required to provide hospital services;
- b) interviewing applicants for public assistance to gather information pertinent to their application;
- c) verifying the accuracy of information provided;
- d) initiating procedures to grant, modify, deny or terminate assistance;
- e) providing information and answering questions concerning benefits and claims procedures; and
- f) referring patient or applicant to other organizations if they are ineligible for services.

**Examples:**

Admission clerk

Hospital admissions clerk

Eligibility interviewer

Eligibility specialist

### 43 NUMERICAL AND MATERIAL RECORDING CLERKS

Numerical and material recording clerks obtain, compile and compute accounting, bookkeeping, statistical, financial and other numerical data; and take charge of cash transactions incidental to business matters. Some occupations classified here keep records of goods produced, purchased, stocked, dispatched and of materials needed at specified production dates; or keep records of operational aspects; and coordinate the timing of passenger and freight transport.

Tasks performed by workers in this Sub-Major Group usually include: helping with accounting and bookkeeping records and computations; calculating unit production costs; calculating wages and in some cases preparing wage packets and paying wages; taking charge of cash transactions incidental to the business; obtaining, compiling and computing statistical or actuarial data; performing clerical tasks relating to the financial transactions of an insurance establishment, bank or similar establishment; recording produced, stocked, ordered and dispatched goods; recording production materials received, put into stock or issued; computing quantities of the production materials required at specified dates; and helping with preparation and checking of production operation schedules; keeping records of operational aspects; and coordinating the timing of passenger and freight transport.

#### 431 NUMERICAL CLERKS

Numerical clerks obtain, compile and compute accounting, bookkeeping, statistical, financial and other numerical data; and take charge of cash transactions incidental to business matters.

Tasks performed usually include: helping with accounting and bookkeeping records and computations; calculating unit production costs; calculating wages and in some cases, preparing wage packets and paying wages; taking charge of cash transactions incidental to the business; obtaining, compiling and computing statistical or actuarial data; and performing clerical tasks relating to the financial transactions of an insurance establishment, bank or similar establishment.

##### 4311 ACCOUNTING AND BOOKKEEPING CLERKS

Accounting and bookkeeping clerks compute, classify and record numerical data to keep financial records complete. They perform any combination of routine calculating, posting and verifying duties to obtain primary financial data for use in maintaining accounting records.

Their tasks include:

- a) checking figures, postings and documents for correct entry, mathematical accuracy and proper codes;
- b) operating computers programmed with accounting software to record, store and analyze information;
- c) classifying, recording and summarizing numerical and financial data to compile and keep financial records using journals and ledgers or computers;
- d) calculating, preparing and issuing bills, invoices, account statements and other financial statements according to established procedures; and
- e) compiling statistical, financial, accounting or auditing reports and tables pertaining to such matters as cash receipts, expenditures, accounts payable and receivable, and profits and losses.

##### Examples:

Accounting sales clerk  
Accounts clerk  
Accounts payable practitioner  
Audit clerk

Bookkeeping clerk  
Budgeting aide  
Budgeting clerk  
Cost computing clerk

**4312 STATISTICAL, FINANCE AND INSURANCE CLERKS**

Statistical, finance and insurance clerks obtain, compile and compute statistical or actuarial data or perform clerical tasks relating to the transactions of insurance establishments, banks and other financial establishments.

Their tasks include:

- a) processing insurance enrolments, cancellations, claims transactions, policy changes and payments;
- b) obtaining and compiling statistical or actuarial data based on routine or special sources of information;
- c) calculating totals, averages, percentages and other details and presenting them in the required tabular form;
- d) preparing financial documents, and calculating interest or brokerage charges and stamp duties payable; and
- e) maintaining records of bonds, shares and other securities bought or sold on behalf of clients or employer.

**Examples:**

Actuarial clerk	Mortgage clerk
Brokerage clerk	New accounts clerk
Finance clerk	Securities clerk
Finance practitioner	Statistical clerk
Insurance clerk	Tax clerk
Logistics clerk	Treasury clerk

**4313 PAYROLL CLERKS**

Payroll clerks collect, verify and process payroll information and compute pay and benefit entitlements for employees within a department, company or other establishment.

Their tasks include:

- a) maintaining records of employee attendance, leave and overtime to calculate pay and benefit entitlements, using manual or computerized systems;
- b) preparing and verifying statements of earnings for employees, indicating gross and net salaries and deductions such as taxes, union dues, garnishments and insurance and pension plans;
- c) preparing employee payments and benefit payments by cheque or electronic transfer;
- d) reviewing time sheets, work charts, wage computation and other information to detect and reconcile payroll discrepancies; and
- e) verifying attendance, hours worked and pay adjustments, and posting information onto designated records.

**Examples:**

Payroll and timekeeping specialist  
Payroll practitioner  
Wages/Payroll clerk

**432 MATERIAL RECORDING AND TRANSPORT CLERKS**

Material recording and transport clerks keep records of goods produced, purchased, stocked, dispatched and of materials needed at specified production dates, or keep records of operational aspects and coordinate the timing of passenger and freight transport.

Tasks performed usually include: recording produced, stocked, ordered and dispatched goods; recording production materials received, put into stock or issued; computing quantities of the production materials required at specified dates; and helping with preparation and checking of production operation schedules; keeping records of operational aspects; and coordinating the timing of passenger and freight transport.

#### **4321 STOCK CLERKS**

Stock clerks maintain records of goods produced and production materials received, weighed, issued, dispatched or put into stock.

Their tasks include:

- a) arranging and controlling receipt and dispatch of goods and keeping relevant records;
- b) maintaining stock records, verifying issue of goods, estimating needs and making requisitions of new stocks;
- c) receiving, storing and issuing tools, spare parts, or various equipment and maintaining relevant records;
- d) weighing goods received, issued, produced, or dispatched and maintaining relevant records; and
- e) compiling inventories of furniture and other items received for storage.

##### **Examples:**

Cargo clerk	Storekeeper clerk
Dispatch clerk (stock)	Storeroom clerk
Freight clerk	Supply canvasser clerk
Stock clerk	Supply checker clerk
Stock controller clerk	Warehouse clerk
Stock checker clerk	Weighing clerk

#### **4322 PRODUCTION CLERKS**

Production clerks compute quantities of materials required at specified dates for manufacturing, construction and similar production programmes; and prepare and check production operation schedules.

Their tasks include:

- a) computing quantities, qualities and types of materials required by production programme;
- b) preparing production requirements schedules, ensuring that materials are available when needed, and keeping relevant records;
- c) preparing or assisting in the preparation of production operation schedules on the basis of customers' orders and production capacity and performance;
- d) verifying stocks, arranging deliveries and investigating delays; and
- e) recording and coordinating the flow of work and materials between departments.

##### **Examples:**

Material control/Material handling clerk	Production clerk
Order/Materials clerk	Production/Planning clerk
Planning/Materials clerk	Schedule clerk (materials)
Processing and control clerk	

**4323 TRANSPORT CLERKS**

Transport clerks keep records of operational aspects and coordinate the timing of train, road and air passenger and freight transport; and prepare reports for management.

Their tasks include:

- a) keeping records of operational aspects and coordinating the timing of passenger and freight transport;
- b) directing train routings within a division or zone of a railway system and keeping related records;
- c) directing, controlling and keeping records of freight handling at a railway yard;
- d) coordinating and keeping records of operational activities concerning road transport, such as allocation and scheduling of vehicles and drivers, loading and unloading of vehicles and storage of goods in transit;
- e) coordinating and keeping records of operational activities concerning air transport of passengers and freight, such as passenger lists and freight manifests; and
- f) preparing reports for management.

**Examples:**

Aircraft dispatcher	Dispatching and receiving clerk
Auto fuel dispatcher	Road transport dispatcher
Cargo checker	Ship boarding inspector
Clerical controller (transport service)	Train dispatcher
Clerical dispatcher (transport service)	

**44 OTHER CLERICAL SUPPORT WORKERS**

Other clerical support workers perform clerical duties in newspapers, courts, libraries and post offices; file documents; prepare information for processing; maintain personnel records; check material for consistency with original source material; and write on behalf of illiterate persons.

Tasks performed by workers in this Sub-Major Group usually include: recording information regarding acquisition, issue and return of library books; maintaining personnel records; classifying and filing various documents and other records; sorting, recording and delivering mail from post offices, as well as from or within an enterprise; coding; correcting proofs; performing a number of miscellaneous clerical duties; and writing on behalf of persons who are unable to read and write.

**441 OTHER CLERICAL SUPPORT WORKERS**

Other clerical support workers perform clerical duties in newspapers, courts, libraries and post offices; file documents; prepare information for processing; maintain personnel records; check material for consistency with original source material; and write on behalf of illiterate persons.

Tasks performed by workers in this Minor Group usually include: recording information regarding acquisition, issue and return of library books; maintaining personnel records; classifying and filing various documents and other records; sorting, recording and delivering mail from post offices, as well as from or within an enterprise; coding; correcting proofs; performing a number of miscellaneous clerical duties; and writing on behalf of persons who are unable to read and write.

**4411 LIBRARY CLERKS**

Library clerks issue and receive library materials; sort and shelve books, sound and vision recordings, periodicals, journals, magazines and newspapers; and provide general library information to library users.

Their tasks include:

- a) issuing and receiving library books and other materials;
- b) reshelving books and other library materials;
- c) performing clerical activities such as manual and electronic filing, word processing and occasional typing;
- d) maintaining journal subscriptions;
- e) assisting library users in accessing basic library materials and making inter-library loans; and
- f) maintaining library records relating to the acquisition, issue and return of books and other materials.

**Examples:**

Librarian aide  
Library assistant

Library clerk  
Library filer

**4412 MAIL CARRIERS AND SORTING CLERKS**

Mail carriers and sorting clerks perform sorting, recording, delivery and other duties in connection with mail services from post offices or related organizations, as well as from or within an establishment.

Their tasks include:

- a) performing mail-handling duties in public post offices or privately-owned delivery establishments;
- b) sorting and delivering mail to private houses and businesses;
- c) providing delivery confirmation records when requested by the client; and
- d) sorting and keeping simple records of incoming and outgoing correspondence and dispatching outgoing mail in various establishments.

**Examples:**

Courier  
Mail clerk  
Mail messenger  
Mail/Dispatch clerk  
Mail/Sorting clerk  
Post carrier

Postal clerk  
Posting/Verifier clerk  
Postman/woman  
Telegram carrier  
Telegraph carrier  
Postal Service Supervisors

**4413 CODING, PROOF-READING AND RELATED CLERKS**

Coding, proof-reading and related clerks convert information into codes; verify and correct proofs; and perform a number of miscellaneous clerical duties.

Their tasks include:

- a) converting information into codes and classifying information by codes for data-processing purposes;
- b) comparing proofs of texts and related material prepared for printing with original material; correcting errors; and marking texts for printer according to the established rules;
- c) sorting forms and marking them with identification numbers;
- d) sorting documents for filing or to collate sets of pages; and
- e) addressing circulars and envelopes by hand.

**Examples:**

Coding clerk  
Proof-reading clerk

Signature verifier  
Type reader

**4414 SCRIBES AND RELATED WORKERS**

Scribes and related workers write letters and complete forms on behalf of persons who are unable to read and write, e.g., illiterate persons, not physically present, etc.

Their tasks include:

- a) reading letters and other written matter to persons who are unable to read or write and providing necessary interpretation and information;
- b) writing letters and completing forms on behalf of others; and
- c) offering advice to individuals and interpreting and helping with the completion of government and other official forms.

**Example:**

Scribe

**4415 FILING AND COPYING CLERKS**

Filing and copying clerks file correspondence, cards, invoices, receipts and other records in alphabetical or numerical order or according to the filing system used. They locate and remove material from file when requested; and photocopy, scan or fax documents.

Their tasks include:

- a) sorting or classifying materials according to guidelines such as content, purpose, user criteria, or chronological, alphabetical, or numerical order;
- b) filing material in drawers, cabinets and storage boxes;
- c) locating and removing materials from files when requested;
- d) keeping records of materials filed and removed; and
- e) photocopying, scanning or faxing documents.

**Examples:**

Copying clerk

Filing clerk

**4416 PERSONNEL CLERK**

Personnel clerks maintain and update personnel records such as information on transfers and promotions, performance evaluations, employee leave taken and accumulated, salaries, qualifications and training.

Their tasks include:

- a) updating information on employment history, salaries, performance evaluations, qualifications and training, and leave taken and accumulated;
- b) initiating records for newly-appointed workers and checking records for completeness;
- c) processing applications for employment and promotions and advising applicants of results;
- d) receiving and answering inquiries about employment entitlements and conditions;
- e) sending out job applications and announcements of job openings and job examinations;
- f) maintaining and updating manual and computerized filing and registration systems; and compiling and preparing reports and documents relating to personnel activities; and
- g) storing and retrieving personnel records and files on request.



**Examples:**

Benefits service practitioner	Learning practitioner
Employee data management practitioner	Recruitment practitioner
Human resource assistant	Technical recruiter
Human resource clerk	

**4419 CLERICAL SUPPORT WORKERS NOT ELSEWHERE CLASSIFIED**

This Unit Group covers clerical support workers not classified elsewhere in Major Group 4. Clerical support workers. For instance, the group includes correspondence clerks, press clippers and publication clerks.

In such cases, tasks would include:

- a) receiving customers' orders for classified advertising; writing and editing copy; calculating advertising rates; and billing customers;
- b) writing business and government correspondence such as replies to requests for information and assistance, damage claims, credit and billing enquiries and service complaints;
- c) assisting in the preparation of periodicals, advertisements, catalogues, directories and other material for publication; and
- d) reading newspapers, magazines, press releases and other publications to locate and file articles of interest to staff and clients.

**Examples:**

Advertising clerk	Mobility practitioner
Correspondence clerk	Press clipper
Directory compiler	Publication clerk

## MAJOR GROUP 5

### SERVICE AND SALES WORKERS

Service and sales workers provide personal and protective services related to travel, housekeeping, catering, personal care, or protection against fire and unlawful acts, or demonstrate and sell goods in wholesale or retail shops and similar establishments, as well as at stalls and on markets. Most occupations in this Major Group require skills at the second PSOC skill level.

Tasks performed by service and sales workers usually include: organizing and providing services during travel; housekeeping; preparing and serving of food and beverages; caring for children; providing personal and basic health care at homes or in institutions, as well as hairdressing, beauty treatment and companionship; telling fortunes; embalming and arranging funerals; providing security services and protecting individuals and property against fire and unlawful acts; enforcing of law and order; posing as models for advertising, artistic creation and display of goods; selling goods in wholesale or retail establishments, as well as at stalls and on markets; and demonstrating goods to potential customers. Supervision of other workers may be included.

#### 51 PERSONAL SERVICE WORKERS

Personal service workers provide personal services related to travel, housekeeping, catering, child and personal care.

Tasks performed by workers in this Sub-Major Group usually include: organizing and providing of services during travel; housekeeping; preparing and serving food and beverages; providing personal and basic health care at homes or institutions, as well as hairdressing, beauty treatment and companionship; telling fortunes; and embalming and arranging funerals. Supervision of other workers may be included.

##### 511 TRAVEL ATTENDANTS, CONDUCTORS AND GUIDES

Travel attendants, conductors and guides provide various personal services in connection with travelling by aircraft, train, ship, bus or other vehicle; and escorting individuals and groups on travel tours, sightseeing visits and excursions.

Tasks performed usually include: ensuring the comfort and safety of passengers; serving food and refreshments; providing information and answering questions in connection with travel; collecting or issuing tickets on board public transport; and accompanying individuals or groups on sightseeing tours or excursions and describing points of interest.

##### 5111 TRAVEL ATTENDANTS AND TRAVEL STEWARDS

Travel attendants and travel stewards ensure the comfort and safety of passengers; serve meals and beverages; and render personal services, usually on aircraft and on board ships. They may plan and coordinate housekeeping and social activities on ships.

Their tasks include:

- a) greeting passengers entering aircraft or ship; checking tickets or boarding passes; and directing them to their seats or berths;
- b) announcing, explaining and demonstrating safety and emergency procedures, such as the use of oxygen masks, seat belts, and life jackets;
- c) assembling and serving pre-prepared meals and beverages;
- d) selling duty-free and other goods;
- e) taking care of general needs and comfort of passengers, answering inquiries, and keeping cabins clean and tidy;
- f) directing and assisting passengers and following prescribed procedures in the

- event of an emergency, such as evacuating a plane following an emergency landing;
- g) verifying that first aid kits and other emergency equipment are in working order;
- h) administering first aid to passengers in distress;
- i) attending pre-flight briefings concerning weather, altitudes, routes, emergency procedures, crew coordination, lengths of flights, food and beverage services offered, and numbers of passengers;
- j) preparing passengers and aircraft for take-off and landing; and
- k) determining special assistance needs of passengers such as small children, the elderly, or disabled persons.

**Examples:**

Aircraft cabin attendant	Flight steward/stewardess
Airlines steward and hostess	Ship steward
Airport attendant	Travel attendant
Flight attendant	Travel steward

**5112 TRANSPORT CONDUCTORS**

Transport conductors check and issue tickets; and ensure the safety and comfort of passengers on trains, trams, buses and other public transport vehicles.

Their tasks include:

- a) collecting and issuing tickets, passes or fares, and checking the validity of tickets issued previously;
- b) attending to sleeping-cars and their occupants on passenger trains;
- c) providing assistance with boarding, seating and luggage as required, especially to elderly, sick, or injured people;
- d) opening and closing doors for passengers;
- e) performing equipment safety checks prior to departure;
- f) signalling to drivers to stop or proceed;
- g) greeting passengers, boarding transportation equipment, and announcing routes and stops;
- h) ensuring that safety regulations are respected;
- i) responding to passengers requests and complaints and providing information about stops and connections; and
- j) taking appropriate action in case of emergencies or accidents.

**Examples:**

Bus conductor	Sleeping on pullman-car attendant
Bus inspector	Ticket inspector (public transport)
Cable car conductor	Train conductor
Passenger car conductor	Tram conductor
Railway passenger train guard	Transport conductor
Road freight conductor	

**5113 TRAVEL GUIDES**

Travel guides accompany individuals or groups on trips, sightseeing tours and excursions and on tours of places of interest such as historical sites, industrial establishments and theme parks. They describe points of interest and provide background information on interesting features.

Their tasks include:

- a) escorting and guiding tourists on cruises and sightseeing tours;
- b) escorting visitors through places of interest such as museums, exhibitions, theme parks, factories and other industrial establishments;
- c) describing and providing information on points of interest and exhibits, and responding to questions;
- d) conducting educational activities for school children;
- e) monitoring visitors' activities to ensure compliance with establishment or tour regulations and safety practices;
- f) greeting and registering visitors and tour participants, and issuing any required identification badges or safety devices;
- g) distributing brochures, showing audio-visual presentations, and explaining procedures and operations at tour sites;
- h) providing for physical safety of groups, and performing activities such as providing first aid and directing emergency evacuations; and
- i) resolving any problems with tour itineraries, service, or accommodation.

**Examples:**

Art gallery guide	Sightseeing guide
Mountaineering guide	Tour escort
Museum guide	Travel/Tour guide
Recreational attendant	

**512 5120 COOKS**

Cooks plan, organize, prepare and cook meals in hotels, restaurants and other eating places, on board ships, on passenger trains and in private households.

Their tasks include:

- a) planning meals, preparing and cooking foodstuffs;
- b) planning, supervising and coordinating the work of kitchen helpers;
- c) checking the quality of food;
- d) weighing, measuring and mixing ingredients according to recipes and personal judgement;
- e) regulating the temperature of ovens, grills, roasters and other cooking equipment; inspecting and cleaning the kitchen, kitchen equipment, serving areas, etc. to ensure safe and sanitary food handling practices; and
- f) operating large-volume cooking equipment such as grills, deep-fat fryers, or griddles.

**Examples:**

Cook	Head cook
Cook, private service	Ship's cook

**513 WAITERS AND BARTENDERS**

Waiters and bartenders serve food and beverages in commercial dining and drinking places, clubs, institutions and canteens, on board ships and on passenger trains.

Tasks performed usually include: assisting in keeping bar properly stocked; washing used glassware and cleaning bar area; serving alcoholic and non-alcoholic drinks at a bar; setting tables with clean linen, cutlery, crockery and glassware; serving food and beverages; advising on the choice of wines and serving them; taking orders for food and/or drinks and passing order to kitchen; presenting bill; and accepting payment.

**5131 WAITERS**

Waiters serve food and beverages at tables in dining and drinking places, clubs, institutions and canteens, on board ships and on passenger trains.

Their tasks include:

- a) setting tables with clean linen, cutlery, crockery and glassware;
- b) greeting customers and presenting them with menus and beverage lists;
- c) advising on food and beverage choices;
- d) taking orders for food and drinks and passing order to kitchen or bar staff;
- e) serving food and beverages to clients at tables;
- f) clearing tables and returning dishes and cutlery to kitchen; and
- g) presenting bills, accepting payment and operating point of sales machines and cash registers.

**Examples:**

Food attendant	Waiter, formal service
Food server	Waiter, general
Service crew	Waiter/Waitress

**5132 BARTENDERS**

Bartenders prepare, mix and serve alcoholic and non-alcoholic drinks directly to customers over a bar or counter, or through waiters.

Their tasks include:

- a) taking beverage orders from serving staff or directly from patrons;
- b) preparing and serving alcoholic and non-alcoholic drinks at a bar;
- c) washing used glassware, cleaning and maintaining bar service areas, tea and coffee-making areas and equipment such as espresso machines;
- d) collecting payment for sales, operating cash registers and balancing cash receipts;
- e) tapping kegs and attaching supply lines;
- f) assisting in keeping bar properly stocked and arranging bottles and glasses;
- g) checking identification of customers to verify age requirements for purchase of alcohol;
- h) taking steps to limit problems related to excessive drinking such, as persuading customers to stop drinking, declining further service and ordering transportation;
- i) mixing ingredients to prepare cocktails and other drinks; and
- j) serving snacks or other food items to customers at the bar.

**Examples:**

Bar helper	Barmaid
Bar keeper	Bartender

**514 HAIRDRESSERS, BEAUTICIANS AND RELATED WORKERS**

Hairdressers, beauticians and related workers cut and dress hair; shave and trim beards; give beauty treatment; apply cosmetics and make-up; and give other kinds of treatment to individuals in order to improve their appearance.

Their tasks include: discussing customers' requirements; cutting and dressing hair; shaving and trimming beards; giving beauty treatment, and applying cosmetics and make up; shaping and polishing finger and toe nails and treating minor ailments of the human foot; and attending clients taking bath and administering elementary massage.

**5141 HAIRDRESSERS**

Hairdressers cut, style, color, straighten and permanently wave hair; shave or trim facial hair; and treat scalp conditions.

Their tasks include:

- a) cutting, washing, tinting and waving hair;
- b) shaving or trimming beards and moustaches;
- c) giving scalp treatment;
- d) fitting wigs according to customers' requirements;
- e) providing advice on hair care, beauty products and hairstyles;
- f) styling hair into dreadlocks and braids and adding hair extensions;
- g) arranging appointments and collecting payments; and
- h) cleaning work areas and sanitizing instruments.

**Examples:**

Barber	Hairdresser
Barber-hairdresser	Hairstylist
Hair care specialist	

**5142 BEAUTICIANS AND RELATED WORKERS**

Beauticians and related workers give facial and body beauty treatments; apply cosmetics and make-up; and give other kinds of treatment to individuals in order to improve their appearance.

Their tasks include:

- a) cleaning and applying creams, lotions and related products to face and parts of body;
- b) giving facial and body massage;
- c) applying make-up to clients of a beauty parlor or to actors and other performers;
- d) cleaning, shaping and polishing finger- and toe-nails; and treating minor ailments of the human foot such as corns, calluses or deformed toe-nails;
- e) attending to clients taking bath and administering elementary massage;
- f) using waxing, sugaring and depilation techniques to remove unwanted bodily hair;
- g) advising clients on diet and exercise to assist in weight loss and slimming; and
- h) arranging appointments and collecting payments.

**Examples:**

Attendant (sauna bath, body massage/scrub, foot/hand spa)	Cosmetologist
Bath attendant	Make-up artist
Beautician	Manicurist
Beauty consultant	Mortuary beautician
Cosmetics and skin care beauty consultant	Pedicurist
	Slimming consultant

**515 BUILDING AND HOUSEKEEPING SUPERVISORS**

Building and housekeeping supervisors coordinate, schedule, and supervise the work of cleaners and other housekeeping staff in commercial, industrial and residential premises. They take responsibility for housekeeping and caretaking functions in hotels, offices, apartments, houses and private dwellings.

Tasks usually include: assigning tasks and inspecting building areas to see that cleaning, housekeeping and maintenance work has been done properly; issuing of supplies and equipment and inventory stocks to ensure that the supplies on hand are adequate; screening and hiring job applicants; training both new and experienced employees; recommending promotions, transfers or dismissals; and performing some cleaning, housekeeping and maintenance tasks.

#### **5151 CLEANING AND HOUSEKEEPING SUPERVISORS IN OFFICES, HOTELS AND OTHER ESTABLISHMENTS**

Cleaning and housekeeping supervisors in offices, hotels and other establishments organize, supervise and carry out housekeeping functions in order to keep clean and tidy the interiors, fixtures and facilities in these establishments.

Their tasks include:

- a) engaging, training, discharging, organizing and supervising helpers, cleaners and other housekeeping staff;
- b) purchasing or controlling the purchase of supplies;
- c) controlling storage and issue of supplies;
- d) supervising general welfare and conduct of individuals in institutions;
- e) sweeping or vacuum-cleaning, washing and polishing floors, furniture and other fixtures;
- f) making beds, cleaning bathrooms, supplying towels, soap and related items;
- g) cleaning kitchens and generally helping with kitchen work, including dishwashing; and
- h) restocking mini-bars and replenishing items such as drinking glasses and writing equipment.

##### **Examples:**

Chambermaid	Housekeeper (institutional)
Hotel housekeeping attendant	Matron (housekeeping)
Housekeeper (hotel)	

#### **5152 HOUSEHOLD SERVICE PROVIDERS**

Household service providers organize, supervise and carry out housekeeping functions in private households with or without the support of subordinate staff.

Their tasks include:

- a) supervising workers employed in households as domestic staff;
- b) purchasing or controlling the purchase of supplies;
- c) controlling storage and issue of supplies;
- d) assisting in cases of minor injury or illness by performing tasks such as taking temperature, giving medicine, putting on bandages;
- e) sweeping or vacuum-cleaning, washing and polishing floors, furniture and other fixtures;
- f) making beds, cleaning bathrooms, supplying towels, soap and related items;
- g) taking care of household pets and plants, receiving visitors, answering telephones, delivering messages and shopping for groceries;
- h) preparing and cooking meals, setting and clearing tables and serving food and beverages; and
- i) cleaning kitchens and generally helping with kitchen work, including dishwashing.

##### **Examples:**

Bed and breakfast operator	Domestic housekeeper
Butler	House steward/stewardess

**5153 BUILDING CARETAKERS**

Building caretakers take care of apartment houses, hotels, offices, churches and other buildings and maintain them and associated grounds in a clean and orderly condition. They may supervise other workers and contractors depending on the size and nature of the building concerned.

Their tasks include:

- a) supervising the work of cleaning, housekeeping and building maintenance staff and contractors;
- b) participating in cleaning, simple repairs and maintenance of building interiors;
- c) tending furnaces and boilers to ensure provision of heat and hot water;
- d) regulating conduct of tenants and visitors in such matters as noise abatement or misuse of property;
- e) providing small services to absent tenants such as accepting deliveries on their behalf or providing requested information to callers;
- f) notifying management and owners of buildings of the need for major repairs;
- g) patrolling buildings to ensure security is maintained; and
- h) filling out registration forms and providing tenants with copies of rules.

**Examples:**

Caretaker	Janitor
Concierge (building)	Lighthouse keeper
Cottage caretaker	Sexton
Dorm caretaker	Warehouse aide
Groundskeeper	

**516 OTHER PERSONAL SERVICES WORKERS**

Other personal services workers recount past and predict future events in persons' lives; provide companionship and other personal services; groom, train and care for animals; provide embalming and funeral services; and train people to drive vehicles.

Tasks performed usually include: casting horoscopes; providing companionship or valet services and other personal services to clients; providing embalming and funeral services; feeding, handling, training and grooming animals; and instructing students under actual driving conditions.

**5161 ASTROLOGERS, FORTUNE-TELLERS AND RELATED WORKERS**

Astrologers, fortune-tellers and related workers recount past and predict future events in persons' lives by practicing astrology, on the basis of characteristics of the clients' palms, samples of playing cards drawn or other techniques.

Their tasks include:

- a) casting horoscopes of individuals at birth or later to recount past and forecast future events and conditions of their lives;
- b) interpreting characteristics of clients' palms, samples of playing cards, position of tea leaves or coffee remnants in a cup, shapes and patterns of bones of dead animals, etc.;
- c) forecasting future events on the basis of these interpretations;
- d) determining auspicious times for various human activities such as inaugurations, marriages, journeys and religious and other ceremonies;
- e) giving warnings and advice on possible courses of action; and
- f) advising individuals on precautions to be taken to avoid evil influences.



**Examples:**

Astrologer	Numerologist
Fengshui	Palmist
Fortune teller	Psychic reader

**5162 COMPANIONS AND VALETS**

Companions and valets provide companionship and attend to various needs of the employer.

Their tasks include:

- a) providing companionship to employer by accompanying him/her to various places, reading, conversing and participating in activities such as sports;
- b) assisting in entertaining visitors in employer's home; and
- c) keeping wardrobe and personal effects of the employer in good order.

**Examples:**

Chaperon	Personal maid
Companion	Valet

**5163 UNDERTAKERS AND EMBALMERS**

Undertakers and embalmers perform various tasks in the disposal of dead human bodies.

Their tasks include:

- a) making arrangements for, and conducting, funerals, cremations and burials;
- b) embalming human bodies to retard or arrest the process of decay;
- c) conforming to health and sanitation and ensuring that legal requirements concerning embalming are met;
- d) incising and closing incisions on various parts of the body and reshaping or reconstructing disfigured or maimed bodies when necessary;
- e) dressing bodies and placing them in caskets; and
- f) conducting interviews to arrange for preparation of obituary notices, to assist with the selection of caskets or urns, and to determine the location and time of burials or cremations.

**Examples:**

Autopsy attendant	Grave digger
Cremator	Sepulture
Embalmer	Undertaker
Funeral undertaker	

**5164 PET GROOMERS AND ANIMAL CARE WORKERS**

Pet groomers and animal care workers feed, handle, train and groom animals; and assist veterinarians, animal health technologists and technicians in veterinary facilities, animal shelters, breeding and boarding kennels, zoos, laboratories, retail pet shops, riding schools, dog training schools, pet grooming and similar establishments.

Their tasks include:

- a) bathing and feeding animals;
- b) leading or carrying animals to treatment room and holding them during treatment;
- c) cleaning and sterilizing veterinary surgical instruments;
- d) labelling drugs, chemicals and other pharmaceutical preparations and replenishing stock;

- e) sterilizing bottles, beakers and other equipment;
- f) cleaning, organizing, and disinfecting animal quarters such as pens, stables, cages, and yards, and animal equipment such as saddles and bridles;
- g) collecting and recording animal information such as weight, size, physical condition and treatments received, medications given, and food intake;
- h) training animals to develop and maintain desired animal behaviors for competition, entertainment, obedience, security, riding and other activities; and
- i) grooming animals by performing tasks such as washing, brushing, clipping, and trimming coats, cutting nails and cleaning ears.

**Examples:**

Dog trainer	Veterinary aide
Horse breaker	Zoo keeper
Pet groomer	

**5165 DRIVING INSTRUCTORS**

Driving instructors teach people how to drive motor vehicles.

Their tasks include:

- a) instructing students under actual driving conditions; and explaining and demonstrating the operation of brakes, clutch, gear selection, automatic transmission, signals and lights;
- b) teaching road traffic regulations;
- c) teaching road craft and road safety;
- d) advising students when they are ready to undergo driving examination;
- e) advising on and teaching advanced driving techniques required for emergency situations; and
- f) illustrating and explaining handling and mechanical operation of motor vehicles and driving techniques using blackboard diagrams and audio-visual aids.

**Example:**

Driving instructor

**5169 PERSONAL SERVICES WORKERS NOT ELSEWHERE CLASSIFIED**

This Unit Group covers personal services workers not elsewhere classified in Sub-Major Group 51. Personal Services Workers. For instance, those who provide services and companionship as dancing partners, social escorts, and night club hostesses or hosts are classified here.

**Examples:**

Club host/hostess	Host/Hostess
Dancing partner	Social escort
Escort	Usher/Usherette
Hospitality girl (GRO)	

**52 SALES WORKERS**

Sales workers sell and demonstrate goods in wholesale or retail shops, at stalls and markets, door-to-door, via telephone or customer contact centers. They may record and accept payment for goods and services purchased, and may operate small retail outlets.

Tasks performed by workers in this Sub-Major Group may include the following: selling goods in wholesale or retail establishments or at street or market stalls, door-to-door, via telephone or customer

contact centers; demonstrating and displaying goods to potential customers; selling and serving food for immediate consumption at counters and in the street; buying or contracting a regular supply of products to be sold; stacking and displaying goods for sale, and wrapping and packing goods sold; determining product mix, stock and price levels for goods to be sold; operating cash registers, optical price scanners, computers or other equipment to record and accept payment for the purchase of goods and services. Supervision of other workers may be required in some occupations classified here.

## **521 STREET AND MARKET SALESPERSONS**

Street and market salespersons sell goods from stalls on markets or in streets and prepare and sell hot or cold food and beverages ready for immediate consumption in streets and public places.

Tasks performed usually include: obtaining permission to set up a stand at a particular place in streets, markets or other open spaces or to sell food and drinks on the streets; buying or contracting a regular supply of products to be sold; erecting and dismantling stalls and stands; transporting, storing, loading and unloading products for sale; stacking, displaying and selling goods, food and drinks and accepting payment; wrapping and packing goods sold; preparing food and drinks for sale; pushing, pedalling or carrying hand-cart, truck, tray or basket to bring food and drinks to the desired place in the street, or to public places such as stations or cinemas; and keeping accounts and maintaining a record of stock levels.

### **5211 STALL AND MARKET SALESPERSONS**

Stall and market salespersons sell various goods from stalls on open-air or covered markets or from stalls in streets or other open spaces.

Their tasks include:

- a) obtaining permission to set up a stand at a particular place in streets, markets or other open spaces;
- b) determining product mix, stock and price levels for goods to be sold;
- c) buying or contracting a regular supply of goods to be sold from wholesale suppliers or directly from producers;
- d) erecting and dismantling stalls and stands; and transporting, storing, loading and unloading goods for sale;
- e) demonstrating and selling goods and accepting payment;
- f) stacking and displaying goods for sale; and wrapping and packing goods sold; and
- g) keeping accounts and maintaining a record of stock levels.

#### **Examples:**

Kiosk salesperson	Store assistant
Market salesperson	Store salesperson
Market stallholder	Street stall sales assistant
Market vendor	Street stall salesperson
Stall salesperson	

### **5212 STREET FOOD SALESPERSONS**

Street food salespersons prepare and sell, or sell previously prepared, hot or cold food and beverages ready for immediate consumption in streets and public places such as stations, cinemas, or theaters.

Their tasks include:

- a) obtaining permission or a license, where required, to sell food and drinks on the street or in a public place;
- b) obtaining food and drinks for sale;

- c) preparing, either beforehand or on the spot, food and drinks for sale;
- d) loading and unloading, pushing, pedalling or carrying hand-cart, truck, tray or basket to bring food and drinks to the desired place in the streets, or to public places such as stations or cinemas; and
- e) displaying and selling food and drinks and accepting payment.

**Examples:**

Hawker (food)

Street food vendor

**522 SHOP SALESPERSONS**

Shop salespersons sell a range of goods and services directly to the public or on behalf of retail and wholesale establishments. They explain functions and qualities of these goods and services; and may operate small shops or supervise the activities of shop sales assistants and cashiers.

Tasks performed usually include: determining customer requirements and advising on product range, price, delivery, warranties and product use and care; demonstrating and explaining and selling goods and services to customers; accepting payment for by a variety of payment methods and preparing sales invoices; undertaking or assisting with the ongoing management of stock such as product inventories and participating in stock takes; tacking and displaying goods for sale, and wrapping and packing goods sold; determining product mix, stocks and price levels for goods to be sold; and supervising and coordinating the activities of shop sales assistants, checkout operators and other workers in supermarkets and department stores.

**5221 SHOPKEEPERS**

Shopkeepers operate small retail shops either independently or with support from a small number of others.

Their tasks include:

- a) determining product mix, stock and price levels for goods to be sold;
- b) purchasing and ordering goods for sale from markets, wholesalers and other suppliers;
- c) budgeting and maintaining records of stock levels and financial transactions;
- d) determining prices and displaying goods for sale;
- e) selling goods to customers and advising them on product use;
- f) examining returned goods and deciding on appropriate action; and
- g) taking inventory of goods in stock.

**Examples:**

Grocer

Maintenance storekeeper

Market tender

News agent

Sales helper/bagger

Salesman/Saleslady

Shopkeeper

**5222 SHOP SUPERVISORS**

Shop supervisors supervise and coordinate the activities of shop sales assistants, checkout operators and other workers in retail and wholesale shops such as supermarkets and department stores.

Their tasks include:

- a) planning and preparing work schedules and assigning staff to specific duties;
- b) instructing staff on sales procedures, including how to handle difficult or

- complex cases;
- c) ensuring that customers receive prompt service;
- d) participating in and providing advice to managers on interviewing, hiring, training, evaluating, promoting and dismissing staff, and resolving staff grievances;
- e) examining returned goods and deciding on appropriate action;
- f) taking inventory of goods for sale and ordering new stock;
- g) ensuring that goods and services are correctly priced and displayed; and
- h) ensuring that safety procedures are enforced.

**Examples:**

Checkout supervisor  
Sales coordinator  
Shop supervisor

Supermarket supervisor  
Other Sales Supervisors

**5223 SHOP SALES ASSISTANTS**

Shop sales assistants sell a range of goods and services directly to the public or on behalf of retail and wholesale establishments, and explain the functions and qualities of these goods and services.

Their tasks include:

- a) determining customer requirements and advising on product range, price, delivery, warranties and product use and care;
- b) demonstrating and explaining to customers the establishment's goods and services;
- c) selling goods and services; accepting payment by a variety of payment methods; preparing sales invoices; and recording sales using cash registers;
- d) assisting with the ongoing management of stock such as product inventories and participating in stock takes; and
- e) stacking and displaying goods for sale, and wrapping and packing goods sold.

**Examples:**

Merchandising assistant  
Sales clerk  
Salesperson (hotel and restaurant)

Salesperson (retail/wholesale establishment)  
Shop assistant

**523 5230 CASHIERS AND TICKET CLERKS**

Cashiers and ticket clerks operate cash registers, optical price scanners, computers or other equipment to record and accept payment for the purchase of goods, services and admissions in settings such as stores, restaurants and ticket offices.

Their tasks include:

- a) receiving and verifying payment by cash, check, credit card or automatic debit in stores, ticket offices, or similar establishments;
- b) giving change and issuing receipts;
- c) issuing tickets for attendance at sporting and cultural events;
- d) counting and recording money received or paid out and balancing against cash register sales records;
- e) receiving incoming cash, checking it against sales slips and other documents, and preparing it for deposit at bank;
- f) operating cash register to calculate total to be paid from or to clients;
- g) scanning, weighing and recording prices of goods; and
- h) wrapping and placing merchandise in bags.

**Examples:**

Cash clerk	Ticket collector/teller
Cash register clerk	Ticket custodian
Cashier	Ticket issuing clerk (entertainment and sporting event)
Checkout operator	Ticket issuing clerk (except parcel)
Invoice clerk	Ticket sorter/encoder
Service station console operator	Toll fee collector/teller
Store cashier	Service station cashier
Ticket checker	

**524 OTHER SALES WORKERS**

Other sales workers display, demonstrate, display and sell goods, food and services, usually to the general public, in context other than sales in markets, streets and shops. It includes sales workers not classified in Minor Groups 521. Street and Market Salespersons; 522. Shop Salespersons; and 523. Cashiers and Ticket Clerks.

Tasks performed may include: displaying and demonstrating items for sale; posing for photographs, film and video, advertising, still photography or for artistic creation; answering questions and offering advice on the use of goods and services; taking orders and making arrangements for payment, delivery and collection of goods or for provision of services; selling goods and services; and soliciting business by approaching potential customers by going from door-to-door or using the telephone or other electronic communications media; selling fuel, lubricants and other automotive products at service stations; and providing services such as fuelling, cleaning, lubricating and performing minor repairs to motor vehicles.

**5241 FASHION AND OTHER MODELS**

Fashion and other models wear and display clothing and accessories and pose for photographs, film and video, advertising, still photography or for artistic creation.

Their tasks include:

- a) dressing in sample apparel of new or current styles or of type wanted by customer;
- b) walking, turning and posing to demonstrate style and characteristics of garments, fashion accessories and other merchandise to best advantage;
- c) posing as subject for sculpture, painting and other types of visual art;
- d) posing for still photography for magazines and other advertising media; and
- e) posing for television, video and cinema commercials and other productions.
- f)

**Examples:**

Advertising model	Fashion model
Artist's model	Mannequin model

**5242 SALES DEMONSTRATORS**

Sales demonstrators demonstrate goods at commercial premises, exhibitions and private homes.

Their tasks include:

- a) setting up displays and demonstrating articles for sale to inform customers about their characteristics and mode of use, as well as to stimulate buying interest;
- b) answering questions and offering advice on the use of goods;
- c) selling goods or directing customers to sales staff;
- d) taking orders and making arrangements for payment, delivery and collection of goods; and

- e) offering sample goods and distributing catalogues and advertising material.

**Examples:**

Demonstrator	Promo staff
Product demonstrator	Promodizer
Promo girl	Sales merchandiser

**5243 DOOR-TO-DOOR SALESPERSONS**

Door-to-door salespersons sell goods and services and solicit business for an establishment, by approaching or visiting potential customers, usually residents in private homes, by going from door to door.

Their tasks include:

- a) giving details of various goods or services and of terms of sale by visiting clients and potential clients door to door;
- b) demonstrating or describing goods or services on offer;
- c) recording orders and transactions and placing orders received with suppliers;
- d) preparing invoices and sales contracts and accepting payment;
- e) distributing letters, information sheets and other documents to clients;
- f) compiling lists of prospective clients and calling on them to obtain new business; and
- g) travelling between sales areas and clients and transporting samples or goods for sale.

**Examples:**

Door to door sales representative	Promo salesperson
Door to door salesperson	Special offer salesperson
Party plan salesperson	

**5244 CONTACT CENTER SALESPERSONS**

Contact center salespersons contact existing and prospective customers, using the telephone or other electronic communications media, to promote goods and services, obtain sales and arrange sales visits. They may work from a customer contact center or from non-centralized premises.

Their tasks include:

- a) promoting goods and services by telephone or electronic mail, following scripts and working from lists of contacts;
- b) creating interest in goods and services, and seeking a sale or agreement to see sales representatives;
- c) arranging processing and dispatch of goods and services, information kits and brochures to customers;
- d) arranging appointments for sales representatives;
- e) recording notes for follow up action and updating marketing databases to reflect changes to the status of each customer;
- f) reporting competitor activities and issues raised by contacts for attention by managers;
- g) maintaining statistics of calls made and successes achieved; and
- h) submitting periodic reports on telemarketing activities and results.

**Examples:**

Call center agent (sales and marketing)	Telemarketer
Call center salesperson	Telemarketing salesperson

Customer contact center salesperson      Telephone salesperson  
Internet salesperson

#### **5245 SERVICE STATION ATTENDANTS**

Service station attendants sell fuel, lubricants and other automotive products; and provide services such as fuelling, cleaning, lubricating; and performing minor repairs to motor vehicles.

Their tasks include:

- a) filling fuel tanks and containers to level specified by customer;
- b) checking and replenishing air pressure in vehicle tires, and oil and other vehicle fluid levels;
- c) washing vehicle windscreens and windows;
- d) performing minor repair work to vehicles such as replacing tires, light bulbs and windscreen wiper blades;
- e) maintaining and operating automatic car wash facilities;
- f) collecting payments from customers for purchases;
- g) cleaning petrol pumps and surrounding driveway, shop and facilities; and
- h) undertaking stock control; and preparing reports on fuel, oil, accessories and other items sold.

##### **Examples:**

Gasoline attendant  
Marina attendant  
Service station attendant

#### **5246 FOOD SERVICE COUNTER ATTENDANTS**

Food service counter attendants serve customers at food counters and finish preparation of simple food items in restaurants, cafes, hotels, fastfood outlets, cafeterias, hospitals and other settings.

Their tasks include:

- a) serving food to customers at counters;
- b) ascertaining the products desired by the customer, assisting customer in making a choice and taking orders;
- c) cleaning, peeling, slicing and trimming foodstuffs using manual and electric appliances;
- d) preparing simple food items and reheating prepared meals;
- e) portioning and wrapping food or placing it directly on plates for service to patrons;
- f) packaging take-away food;
- g) stocking refrigerators, salad and buffet bars and keeping records of the quantities of food used; and
- h) receiving payment for food items purchased.

##### **Examples:**

Cafeteria counter attendant  
Salad bar attendant

#### **5249 SALES WORKERS NOT ELSEWHERE CLASSIFIED**

This Unit Group includes sales workers not classified elsewhere in Sub-Major Group 52. Sales Workers.



**Examples:**

Counter checker  
 Dispatcher (sales services)  
 Package counter clerk

Package counterman  
 Rental salesperson

**53 PERSONAL CARE WORKERS**

Personal care workers provide care, supervision and assistance for children, patients and elderly, convalescent or disabled persons in institutional and residential settings.

Tasks performed by workers in this Sub-Major Group usually include: assisting with mobility, washing and other personal needs; assisting children individually to learn social skills; supervising and participating in activities that enhance the child's physical, social, emotional and intellectual development in schools and pre-school; and observing and reporting concerns to appropriate medical or social service worker.

**531 CHILD CARE WORKERS AND TEACHERS' AIDES**

Child care workers and teachers' aides provide care and supervision for children in schools, residential homes and child care facilities.

Tasks performed usually include: assisting children individually to learn social skills; demonstrating, supervising and participating in activities that enhance the physical, social, emotional and intellectual development of children in schools and pre-schools; assisting in preparation of materials and equipment for children's education and recreational activities before-school, after-school, during vacation and in day care centers.

**5311 CHILD CARE WORKERS**

Child care workers provide care and supervision for children in residential homes and in before-school, after-school, vacation and day care centers.

Their tasks include:

- a) assisting children to wash, dress and feed themselves;
- b) taking children to and from school or outdoors for recreation;
- c) playing games with children, or entertaining them by reading or storytelling;
- d) assisting in the preparation of materials and equipment for children's education and recreational activities;
- e) managing children's behavior and guiding their social development;
- f) disciplining children and recommending or initiating other measures to control behavior, such as caring for own clothing and picking up toys and books;
- g) observing and monitoring children's play activities; and
- h) keeping records on individual children, including daily observations and information about activities, meals served, and medications administered.

**Examples:**

Babysitter  
 Child care worker  
 Family day care worker  
 Nanny

Nursemaid  
 Nursery aide  
 Nursery school attendant  
 Out-of-school hours care worker

**5312 TEACHERS' AIDES**

Teachers' aides perform non-teaching duties to assist teaching staff, and provide care and supervision for children in schools and pre-schools.

Their tasks include:

- a) demonstrating, supervising and participating in activities that enhance the physical, social, emotional and intellectual development of children in schools and preschools;
- b) preparing indoor and outdoor areas for learning and recreational activities;
- c) assisting children with intellectual, physical, behavioral and other learning difficulties with their studies;
- d) assisting children individually to learn social skills;
- e) assisting with preparing teaching materials, and copying and collating written and printed material;
- f) operating audio-visual equipment, computers and other teaching aides; and
- g) distributing and collecting lesson material.

**Examples:**

Pre-school assistant  
Teacher's assistant

## **532 PERSONAL CARE WORKERS IN HEALTH SERVICES**

Personal care workers in health services provide personal care and assistance with mobility and activities of daily living to patients, and elderly, convalescent and disabled people in health care and residential settings.

Tasks performed usually include: assisting patients with mobility, personal care and communication needs; sterilizing surgical and other instruments and equipment; observing and reporting concerns to the appropriate medical or social service workers, preparing patients for examination and treatment; and participating in planning the care of individuals.

### **5321 HEALTH CARE ASSISTANTS**

Health care assistants provide direct personal care and assistance with activities of daily living to patients and residents in a variety of health care settings such as hospitals, clinics, and residential nursing care facilities. They generally work in implementation of established care plans and practices, and under the direct supervision of medical, nursing or other health professionals or associate professionals.

Their tasks include:

- a) providing care, support and treatment to patients and residents of medical, rehabilitative and residential care facilities as per treatment plans established by medical, nursing and other health professionals;
- b) assisting patients with personal and therapeutic care needs such as personal hygiene, feeding, dressing, physical mobility and exercise, communication; taking oral medications; and changing dressings;
- c) positioning, lifting and turning patients and transporting them in wheelchairs or on movable beds; maintaining patients' environmental hygiene standards, such as cleaning patient rooms and changing bed-linen;
- d) providing massage and other non-pharmacological pain relief measures, such as during pregnancy and labor; and
- e) observing patients' condition, responses and behavior and reporting changes to a health professional.

**Examples:**

Barangay health aide  
Birth assistant (clinic or hospital)  
Caregiver (institution-based)

Nursing aide (clinic or hospital)  
Nursing attendant  
Patient care assistant

Hospital aide	Psychiatric aide
Hospital attendant	Surgery attendant
Institution-based personal care worker	Midwifery attendant
Medical aide	

### 5322 HOME-BASED PERSONAL CARE WORKERS

Home-based personal care workers provide routine personal care and assistance with activities of daily living to persons who are in need of such care due to effects of ageing, illness, injury, or other physical or mental condition in private homes and other independent residential settings.

Their tasks include:

- a) assisting clients with personal and therapeutic care needs such as personal hygiene, feeding, dressing, physical mobility and exercise, communication, taking oral medications and changing dressings, usually as per care plans established by a health professional;
- b) maintaining records of client care, changes in condition and responses to care and treatment, and reporting concerns or providing referrals to a health or social services professional;
- c) positioning and lifting clients with physical mobility challenges, and helping transport them in wheelchairs and motor vehicles;
- d) providing clients and families with emotional support and information and advice on topics such as nutrition, hygiene, exercise, caring for infants, or adapting to disability or illness;
- e) maintaining clients' environmental hygiene standards, such as changing bed linen, washing clothes and dishes, and cleaning living quarters;
- f) providing psychological support to clients such as through conversation or reading aloud;
- g) planning, purchasing, preparing, or serving meals to meet nutritional requirements and prescribed diet;
- h) providing support to parents and care for newborns during the post-partum period; and
- i) scheduling and accompanying clients for appointments with medical doctors and other health professionals; or performing other errands.

#### Examples:

Caregiver (home-based)	House parent
Home birth assistant	Nursing aide (home)
Home care aide	Personal care provider

### 5329 PERSONAL CARE WORKERS IN HEALTH SERVICES NOT ELSEWHERE CLASSIFIED

This Unit Group covers personal care workers in health services not elsewhere classified in Minor Group 532. Personal Care Workers in Health Services. For instance the group includes occupations such as dental aid, sterilization aid, hospital orderly, medical imaging assistant, and pharmacy aide.

Their tasks include:

- a) cleaning and sterilizing surgical, dental and pharmaceutical instruments, bottles, beakers and other equipment;
- b) labelling drugs, chemicals and other pharmaceutical preparations and replenishing stock on shelves;
- c) lifting, turning, and moving patients and transporting them in wheelchairs or on moveable beds;
- d) preparing patients for examination or treatment;
- e) setting up instrument trays, preparing materials, and assisting dentists or

- radiographers during procedures; and
- f) exposing diagnostic X-rays.

**Examples:**

Dental aide	Medical imaging assistant
First aid assistant	Pharmacy aide
Hospital orderly	Sterilization aide

**54 541 PROTECTIVE SERVICES WORKERS**

Protective services workers protect individuals and property against fire and other hazards; maintain law and order; and enforce laws and regulations.

Tasks performed usually include: preventing, fighting and extinguishing fires; rescuing people from burning buildings and accident sites and those trapped in dangerous situations; maintaining law and order, enforcing laws and regulations, patrolling public areas and arresting suspected offenders; directing traffic and assuming authority in the event of accidents; watching over and maintaining order among inmates of prisons, reformatories or penitentiaries; patrolling or monitoring premises to guard property against theft and vandalism, controlling access to establishments and maintaining order and enforcing regulations at public events and within establishments. Supervision of other workers may be included.

**5411 FIREFIGHTERS**

Firefighters prevent, fight and extinguish fires and assist in other emergencies; protect life and property; and conduct rescue efforts.

Their tasks include:

- a) responding to fire alarms and other calls for assistance, such as automobile and industrial accidents, bomb threats and other emergencies;
- b) controlling and extinguishing fires using manual and power equipment and firefighting chemicals;
- c) fighting special types of fires and using special equipment in industrial establishments;
- d) rescuing people from burning buildings and accident sites and those trapped in dangerous situations;
- e) preventing or limiting the spread of dangerous substances in case of fires or accidents; and
- f) informing the public about fire prevention.

**Examples:**

Aircraft accident firefighter	Firefighting operative
Fire aide	Fireman/Firewoman
Fire brigade/marshall	Forest firefighter
Firefighter	

**5412 POLICE OFFICERS**

Police officers maintain law and order; patrolling public areas; enforcing laws and regulations; and arresting suspected offenders.

Their tasks include:

- a) patrolling a specific area to maintain public order; respond to emergencies; protect people and property; and enforce laws and regulations;
- b) identifying, pursuing and arresting suspects and perpetrators of criminal acts;

- c) directing traffic and assuming authority in the event of accidents; and
- d) providing emergency assistance to victims of accidents, crimes and natural disasters.

**Examples:**

Constable	Police patrol officer
Patrol officer	Police patrolman/patrolwoman
Police officer	Policeman/Policewoman

**5413 PRISON GUARDS**

Prison guards watch over and maintain order among inmates of prisons, reformatories or penitentiaries.

Their tasks include:

- a) searching arriving prisoners, putting their valuables in safekeeping, escorting prisoners to cells and locking them in;
- b) making periodic inspection tours of cells; and inspecting and maintaining the security of locks, windows, doors and gates;
- c) supervising prisoners at work, meals, or during recreation periods;
- d) observing the conduct and behavior of prisoners to prevent disturbances and escapes;
- e) patrolling prison areas to prevent escape;
- f) assisting with the implementation of rehabilitation programs; and
- g) escorting prisoners in transit and during temporary leaves.

**Examples:**

Inmate guidance officer	Prison guard
Jail guard	Warden

**5414 SECURITY GUARDS**

Security guards patrol or monitor premises to guard property against theft and vandalism. They control access to establishments and maintain order; and enforce regulations at public events and within establishments.

Their tasks include:

- a) patrolling premises and checking doors, windows and gates to prevent and detect signs of unauthorized entry;
- b) controlling access to establishments; monitoring and authorizing the entrance or departure of employees and visitors; checking identification; and issuing security passes;
- c) circulating among visitors, patrons, or employees to preserve order; protect property from theft or vandalism; and enforce the regulations of the establishment;
- d) responding to alarms; investigating disturbances; and contacting superiors, police or firefighters as appropriate;
- e) performing security checks of passengers and luggage at airports; and
- f) picking up and ensuring the safe delivery of cash and valuables to banks, automated teller machines and retail establishments.

**Examples:**

Aviation security guard	Lady guard
Bailiff	Marshall
Bodyguard	Motorcycle escort
Bouncer	Museum guard

Civilian guard	Private police guard
Confidential agent	Security agent
Customs gatekeeper	Security guard
Doorkeeper	Security patrolman/patrolwoman
Gatekeeper/Roving guard	Surveillance officer
Guard patrol	Watchman/Watchwoman
Harbor patrol	

**5419 PROTECTIVE SERVICES WORKERS NOT ELSEWHERE CLASSIFIED**

This Unit Group covers protective services workers not elsewhere classified in Minor Group 541. Protective Services Workers. For instance, the group includes lifeguards, crossing guards and animal control officers.

Their tasks include:

- a) patrolling beaches and swimming pools to prevent accidents; and to rescue bathers from drowning;
- b) monitoring traffic flow to locate safe gaps through which pedestrians can cross streets;
- c) responding to citizen complaints concerning stray domestic animals, livestock and wildlife; issuing warnings and citations to owners; and impounding lost, homeless and dangerous animals;
- d) patrolling an assigned area to enforce parking regulations; and
- e) directing traffic.

**Examples:**

Animal control officer	Lifeguard
Beach patrolman/patrolwoman	Parks and games warden
Crossing guard	Traffic aide
Game warden	Traffic enforcer

## MAJOR GROUP 6

### SKILLED AGRICULTURAL, FORESTRY AND FISHERY WORKERS

Skilled agricultural, forestry and fishery workers grow and harvest field or tree and shrub crops, gather wild fruits and plants, breed, tend or hunt animals, produce a variety of animal husbandry products, cultivate, conserve and exploit forests, breed or catch fish and cultivate or gather other forms of aquatic life in order to provide food, shelter and income for themselves and their households. Most occupations in this major group require skills at the second ISCO skill level.

Tasks performed by skilled agricultural, forestry and fishery workers usually include: preparing the soil; sowing, planting, spraying, fertilising and harvesting field crops; growing fruit and other tree and shrub crops; growing garden vegetables and horticultural products; gathering wild fruits and plants; breeding, raising, tending or hunting animals mainly to obtain meat, milk, hair, fur, skin, sericultural, apiarian or other products; cultivating, conserving and exploiting forests; breeding or catching fish; cultivating or gathering other forms of aquatic life; storing and carrying out some basic processing of their produce; selling their products to purchasers, marketing organisations or at markets. Supervision of other workers may be included.

#### 61 MARKET-ORIENTED SKILLED AGRICULTURAL WORKERS

Market-oriented skilled agricultural workers plan, organize and perform farming operations to grow and harvest field or tree and shrub crops and produce a variety of animals and animal products for sale or delivery on a regular basis to wholesale buyers, marketing organizations or at markets.

Tasks performed by workers in this sub-major group usually include: preparing the soil; sowing, planting, spraying, fertilising and harvesting field crops, growing fruit and other tree and shrub crops; growing garden vegetables and horticultural products; raising, breeding and tending animals mainly to obtain meat, milk, hair, fur, skin, sericultural, apiarian or other products; storing and carrying out some processing of their produce; selling their products to purchasers, marketing organisations or at markets. Supervision of other workers may be included.

##### 611 MARKET GARDENERS AND CROP GROWERS

Market gardeners and crop growers plan, organize and perform operations to grow and harvest field crops, to grow fruit and other tree and shrub crops, to grow garden vegetables and medicinal and other plants, and to produce horticultural and horticultural nurseries products, for sale or delivery on a regular basis to wholesale buyers, marketing organizations or at markets.

Tasks performed usually include: monitoring market activity and conditions, determining types and quantities of crops to be grown, and planning and coordinating production accordingly; purchasing seeds, bulbs and fertilizer; investing in land and land improvements; preparing land, sowing, planting, cultivating and harvesting various crops; tending working animals and maintaining farm buildings, machinery and equipment; producing saplings, bulbs and seeds; storing and carrying out some processing of produce; delivering or marketing farm products. Supervision of other workers may be included.

##### 6111 RICE FARMERS

Workers in this unit group plan and carry out the necessary operations to grow and harvest rice for sale or delivery on a regular basis to wholesale buyers, marketing organizations or at markets. They may grow other secondary crops.

Their tasks include:

- a) determining the kinds and amounts of rice to be grown;
- b) purchasing seeds, fertilizer and other supplies;

- c) renting or investing in land and land improvements, buildings, working animals, equipment and machinery;
- d) performing farm operations such as land preparation, sowing, planting, cultivating and harvesting rice;
- e) storing and carrying out some basic processing of rice;
- f) tending working animals and maintaining farm buildings, machinery and equipment; and
- g) delivering or marketing farm products.

**Examples:**

Upland, rice farmer,  
 Lowland, rice farmer  
 Rainfed, rice farmer

Irrigated, rice farmer  
 Skilled farm worker (field crops)

**6112 CORN FARMERS**

Workers in this unit group plan and carry out the necessary operations to grow and harvest corn for sale or delivery on a regular basis to wholesale buyers, marketing organizations or at markets. They may grow other secondary crops.

Their tasks include:

- a) determining the kinds and amounts of corn to be grown;
- b) purchasing seeds, fertilizer and other supplies;
- c) renting or investing in land and land improvements, buildings, working animals, equipment and machinery;
- d) performing farm operations such as land preparation, sowing, planting, cultivating and harvesting corn;
- e) storing and carrying out some basic processing of corn;
- f) tending working animals and maintaining farm buildings, machinery and equipment; and
- g) delivering or marketing farm products.

**Example:**

Corn Farmer

**6113 VEGETABLE, LEGUMES AND ROOT CROPS FARMERS**

Workers in this unit group plan and carry out the necessary operations to grow and harvest vegetable, field legumes and root crops for sale or delivery on a regular basis to wholesale buyers, marketing organizations or at markets.

Their tasks include:

- a) determining the kinds and amounts of vegetables, field legumes and root crops to be grown;
- b) purchasing seeds, fertilizer and other supplies;
- c) renting or investing in land and land improvements buildings, working animals, equipment and machinery;
- d) performing farm operations such as land preparation, sowing, planting, cultivating and harvesting vegetables, legumes and fiber crops;
- e) storing and carrying out some basic processing of vegetables, legumes and root crops
- f) tending working animals and maintaining farm buildings, machinery and equipment; and
- g) delivering or marketing farm products.



**Examples:**

Eggplant farmer  
Cabbage farmer  
Tomato farmer  
Roots vegetable farmer  
Pechay farmer  
Soybeans farmer  
Mongo beans farmer

Peanut farmer  
Sweet potato farmer  
Cassava farmer  
White potato (Irish potato) farmer  
Ube farmer  
Gabi farmer

**6114 SUGARCANE FARMERS**

Workers in this unit group plan and carry out the necessary operations to grow and harvest sugarcane for sale or delivery on a regular basis to wholesale buyers, marketing organizations or at markets.

Their tasks include:

- a) determining the variety and amounts of sugarcane to be grown;
- b) purchasing seeds, fertilizer and other supplies;
- c) renting or investing in land and land improvements, buildings, working animals, equipment and machinery;
- d) performing farm operations such as land preparation, sowing, planting, cultivating and harvesting sugarcane;
- e) storing and carrying out some basic processing of sugarcane;
- f) tending working animals and maintaining farm buildings, machinery and equipment; and
- g) delivering or marketing farm products.

**Example:**

Sugarcane farmer/*Sakada*

**6115 COCONUT FARMERS**

Workers in this unit group plan and carry out the necessary operations to grow and harvest coconuts for sale or delivery on a regular basis to wholesale buyers, marketing organizations or at markets. They may grow other secondary crops.

Their tasks include:

- a) determining the kinds and amounts of coconut to be grown;
- b) purchasing seeds, fertilizer and other supplies;
- c) renting or investing in land and land improvements, buildings, working animals, equipment and machinery;
- d) performing farm operations such as land preparation, sowing, planting, cultivating and harvesting coconut and other secondary crops;
- e) storing and carrying out some basic processing of coconut;
- f) tending working animals and maintaining farm buildings, machinery and equipment; and
- g) delivering or marketing farm products.

**Example:**

Coconut farmers

**6116 OTHER FIELD CROP FARMERS**

Workers in this unit group plan and carry out the necessary operations to grow and harvest crops other than rice, corn, sugarcane, vegetables, field legumes, rootcrops, sugarcane and coconut for sale or delivery on a regular basis to wholesale buyers, marketing organizations or at markets.

Their tasks include:

- a) determining the kinds and amounts of other crops to be grown;
- b) purchasing seeds, fertilizer and other supplies;
- c) renting or investing in land and land improvements, buildings, working animals, equipment and machinery;
- d) performing farm operations such as land preparation, sowing, planting, cultivating and harvesting fiber crops;
- e) storing and carrying out some basic processing of fiber crops;
- f) tending working animals and maintaining farm buildings, machinery and equipment;
- g) delivering or marketing farm products.

**Examples:**

Garlic/onion (and other spices) farmer	Abaca farmer
Black pepper farmer	Jute farmer
Ginger farmer	Sisal farmer
Tobacco farmer	Ramie farmer
Cotton farmer	

**6117 TREE AND SHRUB CROP GROWERS**

Tree and shrub crop growers plan organize and perform farming operations to grow and harvest trees and shrubs, such as fruit trees, tree nuts, coffee and cacao and other tree and shrub crop growers for sale or delivery on a regular basis to wholesale buyers, marketing organizations or at markets.

Their tasks include:

- a) monitoring market activity and conditions, determining types and quantities of crops to be grown, and planning and coordinating production accordingly;
- b) preparing soil by hand or machine, and spreading fertilizers and manure;
- c) selecting and sowing seeds, and planting seedlings;
- d) maintaining crops by cultivating soil, by transplanting, pruning or thinning trees and shrubs, and by setting up and operating irrigation equipment;
- e) controlling weeds, pests and diseases, by applying herbicides and pesticides;
- f) tending trees or bushes, collecting sap and harvesting crops;
- g) inspecting, cleaning, grading, packaging, storing and loading crops for sale or delivery to market;
- h) tending working animals and maintaining farm buildings, structures, equipment and water supply systems;
- i) inspecting, cleaning, grading, packaging, storing and loading crops for sale or delivery to market;
- j) storing and carrying out some processing of produce;
- k) promoting and marketing products, arranging the sale, purchase and transportation of produce and supplies and maintaining and evaluating records of farm activities and transactions; and
- l) training and supervising workers in crop production, maintenance duties, and health and safety precautions and hiring and discharging workers and contractors.

**Examples:**

Coffee and cacao farmer	Castañas farmer
Mango farmer	Rubber tree farmer
Banana farmer	Rubber tapper
Citrus farmer	Tea farmer
Fruit farmer	Grapevine farmer

Papaya farmer  
Cashew nut farmer  
Pili nut farmer  
African oil palm farmer

Passion fruit farmer  
Virticulturist  
Fruit Tree Farmers  
Other orchard farmers

### 6118 GARDENERS, HORTICULTURAL AND NURSERY GROWERS

Gardeners, horticultural and nursery growers plan organize and perform operations to cultivate and maintain trees, shrubs, flowers and other plants in parks and private gardens, and to produce saplings, bulbs and seeds, or grow vegetables and flowers by intensive cultivation techniques, for sale or delivery on a regular basis to wholesale buyers, marketing organizations or at markets.

Their tasks include:

- a) monitoring market activity and conditions determining kinds and amounts of vegetables, horticultural and nursery products to be grown and planning and coordinating production accordingly;
- b) preparing land by conditioning soil, levelling ground and installing and operating irrigation and drainage systems;
- c) planting trees, hedges, garden plants, grass;
- d) pruning and trimming trees, shrubs and hedges, installing plant supports and protection, and rolling, mowing aerating and edging lawns;
- e) constructing features and facilities within gardens, such as paths or paved areas, walls, rockeries, garden beds ponds and water features, sheds and fences;
- f) checking the health of plants and trees, identifying and treating weeds, pests and diseases, and applying mulch and fertilizers;
- g) producing saplings, bulbs and seeds and raising plants from seeds or cuttings;
- h) harvesting crops inspecting, cleaning, grading, packaging, storing and loading products for sale or delivery to market;
- i) maintaining buildings, greenhouses and other structures, equipment and water supply systems;
- j) storing and carrying out some processing of produce;
- k) promoting and marketing products, arranging the sale, purchase and transportation of produce and supplies and maintaining and evaluating records of activities and transactions; and
- l) training and supervising workers in production, maintenance duties, and health and safety precautions and hiring and discharging workers and contractors.

#### Examples:

Horticulturist  
Landscape gardener  
Market gardener  
Mushroom cultivator

Orchid plant grower  
Nursery grower  
Foliage propagator  
Rose grower

### 6119 OTHER MARKET GARDENERS AND CROP GROWERS, NOT ELSEWHERE CLASSIFIED

Workers in this unit group carry out the necessary operations mainly to grow other plants and trees for perfumery, insecticidal, medicinal and other purposes which may or may not be ornamental.

Their tasks include:

- a) determining the kinds and amounts of plants to be grown;
- b) purchasing seeds, fertiliser and other supplies;
- c) renting or investing in land and land improvements, buildings, equipment and machinery;
- d) performing farm operations such as land preparation, sowing, planting

- cultivating plants and trees and harvesting their products;
- e) storing and carrying out some basic processing of other plants;
- f) maintaining farm buildings, machinery and equipment; and
- g) delivering or marketing farm products.

**Examples:**

Insecticidal and medicinal grower  
 Perfumery plant grower (e.g. ilang-ilang  
 grower and citronella grower)

**612 ANIMAL PRODUCERS**

Animal producers plan, organize and perform farming operations to breed and raise domesticated animals, poultry, insects and non-domesticated animals for the production of meat, dairy products, honey, skins, textiles and other products or for use as working, sporting or recreational animals, for sale or delivery to wholesale buyers, marketing organizations or at markets.

Task performed usually include: monitoring market activity and conditions, determining kinds and amounts of products to produce, planning and coordinating production accordingly; raising, feeding and tending animals; preparing animals or animal products for market; monitoring and examining animals to detect illness, injury, or disease, and to check physical condition such as rate of weight gain; performing duties related to animal reproduction, such as breeding, artificial insemination, and helping with animal births; renting or investing in and maintaining and cleaning buildings, machinery, equipment, and structures; storing and carrying out some processing of produce; promoting and marketing products, arranging the sale, purchase and transportation of stock, produce and supplies and maintaining and evaluating records of activities and transactions; training and supervising workers in animal care procedures, maintenance duties, and health and safety precautions and hiring and discharging workers and contractors.

**6121 LIVESTOCK FARMER**

Livestock producers plan, organize and perform farming operations to breed and raise domesticated animals (excluding poultry), such as cattle, sheep, pigs, goats, horses and camels, for the production of meat, skins, and wool or for use as working, sporting or recreational animals for sale or delivery to wholesale buyers, marketing organizations or at markets.

Their tasks include:

- a) monitoring market activity and conditions, determining kinds and amounts of stock to produce, planning and coordinating production accordingly;
- b) cultivating pastures and providing and monitoring fodder and water supplies to maintain appropriate nutritional levels and condition of livestock;
- c) monitoring and examining animals to detect illness, injury, or disease, and to check physical condition such as rate of weight gain;
- d) grooming, marking, clipping, trimming, drenching and/or castrating animals and shearing coats to collect hair or wool;
- e) herding livestock to pastures for grazing or to scales, sheds, vehicles, or other enclosures;
- f) milking animals by hand or using milking machines;
- g) mixing feed, additives, and medicines in prescribed portions and distributing or hand-feeding to animals for consumption;
- h) performing duties related to livestock reproduction, such as breeding, artificial insemination, and helping with animal births;
- i) maintaining and cleaning farm buildings, machinery, equipment, and structures;
- j) slaughtering and skinning animals and preparing them for market;

- k) storing and carrying out some processing of animal and dairy produce;
- l) promoting and marketing products, arranging the sale, purchase and transportation of livestock, produce and supplies and maintaining and evaluating records of farm activities and transactions; and
- m) training and supervising workers in animal care procedures, maintenance duties, and health and safety precautions and hiring and discharging workers and contractors.

**Examples:**

Cattle farmer	Shepherd
Dog breeder	Stockman/woman
Drover	Carabao farmer
Goat farmer	Deer farmer
Horse breeder	Cattle herder
Shearer	Skilled farm worker (livestock)
Sheep farmer	Other livestock farmers

**6122 DAIRY FARMER**

Workers in this unit group plan and carry out the necessary operations on dairy products and deliver or sell these on a regular basis to wholesale buyers, marketing organizations or at markets.

Their tasks include:

- a) determining the kinds and amounts dairy products to be produced;
- b) renting or investing in grazing land, buildings, equipment and machinery;
- c) milking, slaughtering, skinning and preparing of dairy products for market;
- d) storing and carrying out some basic processing of their produce;
- e) maintaining farm buildings, machinery and equipment; and
- f) delivering or marketing farm products.

**Examples:**

Dairy farmer  
Pasture in-charge

**6123 EGGS PRODUCERS**

Workers in this unit group plan and carry out the necessary operations for sale or delivery of eggs on a regular basis to wholesale buyers, marketing organizations or at markets.

Their tasks include:

- a) determining the kinds and amounts of eggs to be produced;
- b) renting or investing in buildings, equipment and machinery;
- c) maintaining farm buildings, machinery and equipment; and
- d) delivering or marketing farm products.

**6124 CHICKEN FARMER**

Workers in this unit group plan and carry out the necessary operations to breed, raise and tend chicken for sale or delivery of eggs, meat or feathers on a regular basis to wholesale buyers, marketing organizations or at markets.

Their tasks include:

- a) determining the kinds and amounts of chicken to be produced;

- b) purchasing and raising chicks,
- c) purchasing feeds and other supplies;
- d) renting or investing in buildings, equipment and machinery;
- e) breeding, raising and tending chicken, and collecting eggs;
- f) slaughtering, dressing and packing chicken for shipment;
- g) storing and carrying out some basic processing of their produce;
- h) maintaining farm buildings, machinery and equipment; and
- i) delivering or marketing farm products.

**Examples:**

Chicken meat producer

Chicken egg layer

**6125 DUCK RAISERS**

Workers in this unit group plan and carry out the necessary operations to breed, raise and tend ducks for sale or delivery of eggs, meat or feathers on a regular basis to wholesale buyers, marketing organizations or at markets.

Their tasks include:

- a) determining the kinds and amounts of ducks and eggs to be produced;
- b) purchasing and raising chicks;
- c) purchasing feeds and other supplies;
- d) renting or investing in buildings, equipment and machinery;
- e) breeding, raising and tending ducks, and collecting eggs;
- f) killing, dressing and packing ducks for shipment;
- g) storing and carrying out some basic processing of their produce;
- h) maintaining farm buildings, machinery and equipment; and
- i) delivering or marketing farm products.

**Examples:**

Duck meat producer

Duck egg layer

**6126 POULTRY PRODUCERS**

Workers in this unit group plan and carry out the necessary operations to breed, raise and tend poultry other than chicken and ducks for sale or delivery of eggs, meat or feathers on a regular basis to wholesale buyers, marketing organizations or at markets.

Their tasks include:

- a) determining the kinds and amounts of poultry other than chicken and ducks, and their eggs to be produced;
- b) purchasing and raising chicks;
- c) purchasing feeds and other supplies;
- d) renting or investing in farm buildings, equipment and machinery;
- e) breeding, raising and tending poultry other than chicken and ducks, and collecting eggs;
- f) slaughtering, dressing and packing poultry other than chicken and ducks for shipment;
- g) storing and carrying out some basic processing of their produce;
- h) maintaining farm buildings, machinery and equipment; and
- i) delivering or marketing farm products.

**Examples:**

Quail farmer  
Turkey farmer  
Geese farmer

Poultry breeder  
Poultry farmer  
Poultry tender

**6127 HOG RAISING PRODUCERS**

Workers in this unit group plan and carry out the necessary operations to breed, raise and tend hogs for meat and deliver or sell these on a regular basis to wholesale buyers, marketing organizations or at markets.

Their tasks include:

- a) determining the kinds and amounts of hogs to be produced;
- b) purchasing hogs, producing and purchasing fodder and other supplies;
- c) renting or investing in buildings, equipment and machinery;
- d) breeding, raising and tending hogs;
- e) slaughtering, skinning and preparing hogs for market;
- f) storing and carrying out some basic processing of their produce;
- g) maintaining farm buildings, machinery and equipment; and
- h) delivering or marketing farm products.

**6128 APIARISTS AND SERICULTURISTS**

Apiarists and sericulturists plan, organize and perform operations to breed, raise and tend insects such as honey bees, silkworms, and other species to produce honey, beeswax, silk and other products for sale or delivery to wholesale buyers, marketing organizations or at markets.

Their tasks include:

- a) monitoring market activity, planning and coordinating production accordingly, monitoring market activity and conditions, determining kinds and amounts of insect products to produce, planning and coordinating production accordingly;
- b) purchasing insects and growing or purchasing feed and other supplies;
- c) breeding, raising and tending insects and collecting their products;
- d) renting or investing in and maintaining and cleaning buildings, machinery, equipment, and structures;
- e) storing and carrying out some processing of produce;
- f) arranging the sale, purchase and transportation of stock, produce and supplies and maintaining and evaluating records of farming activities; and
- g) training and supervising workers in production procedures, maintenance duties, and health and safety precautions, and hiring and discharging workers and contractors.

**Examples:**

Apiary farmer (apiarist)  
Silkworm farmer (sericulturist)  
Butterfly breeder

**6129 ANIMAL PRODUCERS NOT ELSEWHERE CLASSIFIED**

This unit group covers market-oriented animal producers not classified elsewhere in Minor group 612, Animal producers. For instance, the group includes those engaged in breeding, raising and tending non-domesticated mammals, game and other birds (except poultry), snails, snakes and other reptiles, as well as various insects and animals used for laboratory tests, for sale or delivery on a regular basis to wholesale buyers, marketing organizations, zoos and circuses, or at markets.

Their tasks include:

- a) monitoring market activity and conditions, determining kinds and amounts of products to produce, planning and coordinating production accordingly;
- b) raising, feeding and tending animals;
- c) killing and skinning animals, and preparing animals or animal products for market;
- d) monitoring and examining animals to detect illness, injury, or disease, and to check physical condition such as rate of weight gain;
- e) performing duties related to animal reproduction, such as breeding, artificial insemination, and helping with animal births;
- f) renting or investing in and maintaining and cleaning buildings, machinery, equipment, and structures;
- g) slaughtering and skinning animals and preparing them for market;
- h) storing and carrying out some processing of produce;
- i) promoting and marketing products, arranging the sale, purchase and transportation of stock, produce and supplies and maintaining and evaluating records of activities and transactions; and
- j) training and supervising workers in animal care procedures, maintenance duties, and health and safety precautions.

**Examples:**

Crocodile farmer	Game bird breeder
Earthworm farmer (vermiculturist)	Ostrich farmer
Fur producer (non-domesticated animals)	Snail breeder

**613 6130 MIXED CROP AND ANIMAL PRODUCERS**

Mixed crop and animal producers plan, organize and perform farming operations to grow and harvest field, tree and various other crops, as well as to breed, raise and tend animals and to produce a variety of animal husbandry products, for sale or delivery to wholesale buyers, marketing organizations or at markets.

Their tasks include:

- a) monitoring market activity and conditions, determining kinds and amounts of crops to be grown and animals to be raised, and planning and coordinating production accordingly;
- b) purchasing seeds, fertilizer, and other supplies;
- c) performing operations such as land preparation, sowing, planting, cultivating and harvesting crops;
- d) producing or buying fodder and other food supplies;
- e) breeding, raising and tending animals;
- f) killing and skinning animals, and preparing animals or animal products for market;
- g) renting or investing in and maintaining and cleaning farm buildings, machinery, equipment, and structures;
- h) storing and carrying out some processing of produce;
- i) promoting and marketing products, arranging the sale, purchase and transportation of livestock, produce and supplies and maintaining and evaluating records of farm activities and transactions; and
- j) training and supervising workers in animal care procedures, maintenance duties, and health and safety precautions and hiring and discharging workers and contractors.



**Examples:**

Farmer (mixed farming)  
 Skilled farm worker (mixed farming)

**62 MARKET-ORIENTED SKILLED FORESTRY, FISHERY AND HUNTING WORKERS**

Market-oriented skilled forestry, fishery and hunting workers plan, organize and perform operations to cultivate, conserve and exploit natural and plantation forests, breed and raise fish, harvest and catch fish and hunt and trap animals, for sale or delivery on a regular basis to wholesale buyers, marketing organizations or at markets.

Tasks performed by workers in this sub-major groups usually include: renting or investing, equipment and machinery and purchasing supplies; planning and undertaking forestry, aquaculture, fishery and hunting operations; maintaining buildings, tanks, machinery, and other equipment; delivering or marketing products; supervising and training other workers.

**621 FORESTRY AND RELATED WORKERS**

Forestry and related workers plan, organize and perform operations to cultivate, conserve and exploit natural and plantation forests.

Tasks usually include: assessing sites for reforestation, selecting seedlings and planting trees using manual planting tools and establishing and caring for forest stands; young forest stands, trim, top and fell trees and saw them into logs; shaping rough wooden products from logs at felling site; stacking logs and loading them in chutes or floating them down rivers; keeping watch to detect forest fires, participating in fire fighting operations complete fire fighting reports and maintaining fire fighting equipment; controlling weeds and undergrowth in regenerating forest stands using manual tools and chemicals; operating and maintaining a skidder, bulldozer or other prime mover to pull a variety of scarification or site preparation equipment over areas to be regenerated; collecting seed cones, pruning trees, assisting in planting surveys and marking trees for subsequent operations; training and supervising other workers in forestry procedures, including forestry laborers and plant operators.

**6211 FOREST TREE PLANTERS**

Workers in this unit group plan and manage the necessary operations to cultivate trees for sale or delivery of forest products on a regular basis to wholesale buyers, marketing organizations or at markets.

Their tasks include:

- a) planting forest seeds or seedlings;
- b) maintaining and caring forest stands; and
- c) maintaining, establishing and caring of forestial tree farms for timber, for pulp and paper or for environmental use.

**Examples:**

Forest ranger  
 Forest technician  
 Watershed forester

**6212 CONCESSIONAIRES AND LOGGERS**

Workers in this minor group plan and manage the necessary operations to log trees for sale or delivery of forest products to wholesale buyers, marketing organizations or at markets at a sustainable basis.

Their tasks include:

- a) marking merchantable trees to be felled and estimating volume of timber;
- b) marking trees to be cut;
- c) trimming, topping and felling trees and sawing them into logs;
- d) scaling and rescaling of felled trees;
- e) cutting trees into logs;
- f) cutting logs into timber;
- g) loading and unloading out timbers, other semi-finished or finished forest products;
- h) replanting and replacing cut trees;
- i) processing logs into timber, plywood, veneer, pulp or paper and other forest products; and
- j) establishing and maintaining processing plants.

**Examples:**

Lumber grader	Rafter
Lumberjacks	Tree feller
Log marker	Tree marker
Log scaler	Timber inspector
Logger	

**6213 CHARCOAL MAKERS AND RELATED WORKERS**

Workers in this unit group plan and manage the necessary operations to convert wood into charcoal or to obtain crude turpentine from wood using traditional techniques.

Their tasks include:

- a) operating simple kiln to convert wood into charcoal by slow burning process;
- b) operating simple digester or still to obtain or distill crude wood turpentine; and
- c) performing other related tasks.

**Example:**

Charcoal maker

**6214 MINOR FOREST PRODUCT GATHERERS**

Workers in this unit group are directly concerned with gathering one or more of a variety of wild or semi-cultivated forest products such as rattan, bamboo, mushrooms, herbs, and other medicinally or commercially valuable plants, firewood, reeds and tree barks, ferns and orchids and other wild flowers and plants for domestication.

Their tasks include:

- a) locating and collecting of forest products;
- b) delivering and marketing products; and
- c) performing other related tasks.

**Examples:**

Firewood gatherer	Wild honey and beeswax gatherer
Rattan gatherer (with permit)	Wild orchids gatherer

**622 FISHERY WORKERS, HUNTERS AND TRAPPERS**

Fishery workers, hunters and trappers breed and raise fish, harvest and catch fish and hunt and trap animals, for sale or delivery on a regular basis to wholesale buyers, marketing organizations or at markets.

Tasks usually include: breeding, raising and cultivating fish, mussels, oysters and other forms of aquatic life as cash crops or for release into freshwater or saltwater; monitoring environments to ensure maintenance of optimum conditions for aquatic life; cleaning, freezing, icing or salting catch on- or offshore and preparing fish and other products for shipment; renting or investing in and maintaining buildings, tanks, machinery, fishing vessels and other equipment; preparing and repairing nets and other fishing gear and equipment; operating fishing vessels to, from and at fishing grounds; baiting, setting, operating and hauling in fishing gear; setting traps to catch mammals, birds or reptiles; delivering or marketing products; supervising and training other workers.

#### **6221 MILKFISH AND TILAPIA PRODUCERS**

Workers in this unit group breed and raise milkfish and tilapia for sale or delivery on a regular basis to buyers, marketing organizations or at markets.

Their tasks include:

- a) purchasing feeds and other supplies;
- b) renting or investing in fish farm facilities;
- c) breeding, raising and cultivating fish;
- d) harvesting, sorting, cleaning, freezing, icing fish for market;
- e) constructing and maintaining fish farm facilities; and
- f) delivering or marketing products.

##### **Examples:**

Bangus farm producer	Fish farmer
Tilapia farm producer	Oyster Farmer
Fish hatchery manager	Seafood Farmer

#### **6222 SEaweeds PRODUCERS**

Workers in this unit group cultivate seaweeds for sale or delivery on a regular basis to buyers, marketing organizations or at markets.

Their tasks include:

- a) purchasing supplies;
- b) renting or investing in farm facilities;
- c) cultivating and harvesting seaweeds;
- d) drying and bailing of seaweeds;
- e) constructing and maintaining farm facilities; and
- f) delivering or marketing products.

##### **Examples:**

Carageenan producers  
 Agar-agar producers  
 Fishing vessel skipper (coastal waters)

#### **6223 PRAWN PRODUCERS**

Workers in this unit group breed and raise prawns and shrimps for sale or delivery on a regular basis to buyers, marketing organizations or at markets.

Their tasks include:

- a) purchasing feeds and other supplies;
- b) renting or investing in prawn farm facilities;
- c) breeding, raising and cultivating prawns and shrimps;

- d) preparing prawns and shrimps for market;
- e) cleaning, sorting, freezing, or icing prawns and shrimps;
- f) constructing and maintaining prawn facilities; and
- g) delivering or marketing products.

**Example:**

Fishing master (deep sea)

**6224 OYSTERS AND MUSSELS PRODUCERS**

Workers in this unit group raise and cultivate oysters and mussels for sale or delivery on a regular basis to buyers, marketing organizations or at markets.

Their tasks include:

- a) purchasing feeds and other supplies;
- b) renting or investing in farm facilities;
- c) raising, cultivating and harvesting oysters and mussels;
- d) preparing oysters and mussels for market;
- e) cleaning, sorting, freezing or icing oysters and mussels;
- f) constructing and maintaining farm facilities; and
- g) delivering or marketing products.

**6225 OTHER AQUA PRODUCTS PRODUCERS**

Workers in this unit group breed and raise other aqua products other than fish, prawn and shrimps, oysters and mussels and seaweeds for sale or delivery on a regular basis to buyers, marketing organizations or at markets.

Their tasks include:

- a) purchasing feeds and other supplies;
- b) renting or investing fish farm/pond facilities;
- c) breeding, raising and cultivating aqua products other than fish, prawn and shrimps, oysters and mussels, and seaweeds and preparing them for market;
- d) cleaning, sorting, freezing, icing or salting other aqua products;
- e) constructing and maintaining fish farm/pond facilities; and
- f) delivering or marketing products.

**Examples:**

Frog raiser	Pearl cultivator
Fish hatchery/nursery farm operator	Skilled fish farm worker
Aquarium fish farm operator (goldfish, corals, etc.)	Skilled seafood farm worker
Algae cultivator	

**6226 INLAND AND COASTAL WATERS FISHERY WORKERS**

Inland and coastal waters fishery workers, alone or as members of fishing-vessel crews, catch fish or gather other forms of aquatic life in inland or coastal waters, for sale or delivery on a regular basis to wholesale buyers, marketing organizations or at markets.

Their tasks include:

- a) preparing and repairing nets and other fishing gear and equipment;
- b) selecting area for fishing, plotting courses and computing navigational positions using compass, charts and other aids;

- c) operating fishing vessels to, from and at fishing grounds;
- d) baiting, setting, operating and hauling in fishing gear by hand or using hoisting equipment;
- e) gathering various forms of aquatic life from shores and shallow waters;
- f) maintaining engine fishing gear and other on-board equipment;
- g) keeping records of transactions, fishing activities, weather and sea conditions and estimating costs and budgets;
- h) sorting, and storing catch in holds with salt and ice;
- i) direct fishing operations, and supervising fishing crew members.; and
- j) removing catches from fishing equipment, measuring them to ensure compliance with legal size and returning undesirable or illegal catches to the water.

**Examples:**

Coastal fishery skipper	Fisherman/woman (coastal waters)
Coastal waters workers	Fisherman/woman (inland waters)
Inland waters workers	

**6227 DEEP-SEA FISHERY WORKERS**

Deep-sea fishery workers, as skippers or members of fishing vessel crews, catch deep-sea fish, for sale or delivery to wholesale buyers, marketing organizations or at markets.

Their tasks include:

- a) preparing and repairing nets and other fishing gear and equipment;
- b) commanding and operating fishing vessels to from and at deep-sea fishing grounds;
- c) determining areas for fishing, plotting courses and computing navigational positions using compass, charts, tables and other aids;
- d) steering vessels and operating navigational instruments and electronic fishing aids;
- e) directing fishing operations and supervising crew activities;
- f) recording fishing progress, activities, weather and sea conditions on ship's log;
- g) baiting, setting and hauling in fishing gear;
- h) cleaning, freezing, icing or salting catch on or offshore; and
- i) selecting and training vessel crews

**Examples:**

Deep sea fisherman/woman  
Master fisherman  
Trawler skipper

**6228 HUNTERS AND TRAPPERS**

Hunters and trappers catch and kill mammals, birds or reptiles mainly for meat, skin, feathers and other products, for sale or delivery on a regular basis to wholesale buyers, marketing organizations or at markets.

Their tasks include:

- a) setting traps to catch mammals, birds or reptiles;
- b) killing trapped or free mammals, birds or reptiles with firearms or other weapons;
- c) skinning and otherwise treating killed mammals, birds or reptiles to obtain desired products for sale or delivery;
- d) delivering or selling trapped live mammals, birds or reptiles; and

- e) repairing and maintaining equipment.

**Examples:**

Animal keeper	Seal trapper
Trapper	Hunter
Fur trapper	Whale hunter

**6229 FISHERMEN NOT ELSEWHERE CLASSIFIED**

Workers in this unit group perform a variety of fishing tasks not elsewhere classified.

Their tasks include:

- a) gathering clams, oysters, crabs, lobster and other inland and coastal mollusks and crustaceans by digging, trapping, or by operation of special tonging or dredging devices;
- b) gathering sea mosses, turtle eggs or shells;
- c) diving to sea bed to gather corals or sponges or harvest pearl oysters; and
- d) catching and/or breeding fish and other sea creatures for aquariums and museums.

**Examples:**

Pearl diver	Fish catcher for aquarium
Oyster diver	Seamoss gatherer

**63 SUBSISTENCE FARMERS, FISHERS, HUNTER AND GATHERERS**

Subsistence farmers, fishers, hunters and gatherers grow and harvest field or tree and shrub crops, vegetables and fruit, gather wild fruits, medicinal and other plants, tend or hunt animals, catch fish and gather various forms of aquatic life in order to provide food, shelter and a minimum of cash income for themselves and their households.

Tasks performed by workers in this sub-major group usually include - preparing the soil; sowing, planting, tending and harvesting field crops; growing vegetables, fruit and other tree and shrub crops; gathering wild fruits, medicinal and other plants; breeding, tending and feeding animals and poultry mainly to obtain meat, eggs, milk, hair, skin or other products; hunting or trapping animals; catching fish and gathering other forms of aquatic life; fetching water and gathering firewood; storing produce for later use and carrying out some processing of produce; building and maintaining houses and other shelters; making tools, clothes and utensils for use by the household; selling or bartering some products at local markets.

**631 6310 SUBSISTENCE CROP FARMERS**

Subsistence crop farmers grow and harvest field or tree and shrub crops, vegetables and fruit, in order to provide food, shelter and a minimum of cash income for themselves and their households.

Their tasks include:

- a) preparing the soil, sowing, planting, tending and harvesting field crops;
- b) growing vegetables, fruit and other tree and shrub crops;
- c) fetching water and gathering firewood;
- d) storing for later use and carrying out some processing of produce;
- e) building and maintaining makeshift houses and other shelters for own use;
- f) making tools, clothes and utensils for use by the household; and
- g) selling some products at local markets.

**632 6320 SUBSISTENCE LIVESTOCK FARMERS**

Subsistence livestock farmers breed, raise and tend livestock in order to provide food, shelter and a minimum of cash income for themselves and their households.

Their tasks include:

- a) cultivating pastures, or managing grazing lands, and monitoring feed and water supplies needed to maintain condition of livestock;
- b) monitoring and examining animals to detect illness, injury, or disease, and to check physical condition;
- c) grooming and marking animals and shearing coats to collect hair or wool;
- d) herding or leading livestock to pastures, grazing land and water supplies;
- e) raising, tending, feeding and milking animals or draining blood from them;
- f) breeding animals and helping with animal births;
- g) slaughtering and skinning animals and preparing them and their products for consumption or sale;
- h) carrying out some processing of animal products;
- i) building and maintaining makeshift houses and other shelters for own use;
- j) making tools, clothes and utensils for use by the household;
- k) fetching water and gathering firewood; and
- l) buying, bartering and selling animals and some products.

**Examples:**

Subsistence cattle farmer

Subsistence slaughterers

**633 6330 SUBSISTENCE MIXED CROP AND LIVESTOCK FARMERS**

Subsistence mixed crop and livestock farmers grow and harvest field or tree and shrub crops, vegetables and fruit, gather wild fruits, medicinal and other plants, tend or hunt animals, and/or catch fish and gather various forms of aquatic life in order to provide food, shelter and a minimum of cash income for themselves and their households.

Their tasks include:

- a) preparing the soil, sowing, planting, tending and harvesting field crops;
- b) growing vegetables, fruit and other tree and shrub crops;
- c) gathering wild fruits, medicinal and other plants;
- d) breeding, tending and feeding animals and poultry mainly to obtain meat, eggs, milk, hair, skin or other products;
- e) fetching water and gathering firewood;
- f) storing produce for later use and carrying out some processing of produce;
- g) building and maintaining makeshift houses and other shelters for own use
- h) making tools, clothes and utensils for use by the household;
- i) selling some products at local markets; and
- j) backyard farming and livestock raising.

**634 6340 SUBSISTENCE FISHERS, HUNTERS, TRAPPERS AND GATHERERS**

Subsistence fishers, hunters, trappers and gatherers gather wild fruits, medicinal and other plants, hunt and trap animals, catch fish and gather various forms of aquatic life in order to provide food, shelter and a minimum of cash income for themselves and their households.

Their tasks include:

- a) gathering wild fruits, roots, medicinal and other plants;

- b) hunting or trapping animals mainly to obtain meat, milk, hair, skin or other products;
- c) fetching water and gathering firewood;
- d) catching fish and gathering other forms of aquatic life;
- e) storing or carrying out some processing of their produce;
- f) making tools, clothes and utensils for use by the household; and
- g) selling some products at local markets.

**Examples:**

Hunter-gatherer

Subsistence collector



## **MAJOR GROUP 7**

### **CRAFT AND RELATED TRADES WORKERS**

Craft and related trades workers apply specific knowledge and skills in the fields to construct and maintain buildings, form metal, erect metal structures, set machine tools, or make, fit, maintain and repair machinery, equipment or tools, carry out printing work produce or process foodstuffs, textiles, or wooden, metal and other equipment or tools, carry out printing work produce or process foodstuffs, textiles, or wooden, metal and other articles, including handicraft goods.

The work is carried out by hand and by hand-powered and other tools which are used to reduce the amount of physical effort and time required for specific tasks, as well as to improve the quality of the products. The tasks call for an understanding of all stages of the production process, the materials and tools used, and the nature and purpose of the final product. Most occupations in this major group require skills at the second ISCO skill level.

Tasks performed by craft and related trades workers usually include: constructing, maintaining and repairing buildings and other structures; casting, welding and shaping metal; installing and erecting heavy metal structures, tackle and related equipment; making machinery, tools, equipment, and other metal articles; setting for operators, or setting and operating various machine tools; fitting, maintaining and repairing industrial machinery, including engines and vehicles, as well as electrical and electronic instruments and other equipment; making precision instruments, jewellery, household and other precious-metal articles, pottery, glass and related products; producing handicrafts; executing printing work; and producing and processing foodstuffs and various articles made of wood, textiles, leather and related materials. Supervision of other workers may be included.

#### **71 BUILDING AND RELATED TRADES WORKERS, EXCLUDING ELECTRICIANS**

Building and related trades workers construct, maintain and repair buildings, erect and repair foundations, walls and structures of brick, stone and similar materials, shape and finish stone for building and other purposes, and extract and work solid minerals from underground or surface mines or quarries. The work is carried out by hand and by hand-powered and other tools which are used to reduce the amount of physical effort and time required for specific tasks, as well as to improve the quality of the products. The tasks call for an understanding of the work organization, the materials and tools used, and the nature and purpose of the final product.

Tasks performed by workers in this sub-major group include: constructing, maintaining and repairing buildings and other structures using traditional and/or modern building techniques; constructing and repairing foundations, walls and structures of brick, stone and similar materials; breaking quarried stone into slabs or blocks; cutting, shaping and finishing stone for building, ornamental, monumental and other purposes; erecting reinforced concrete frameworks and structures as well as finishing and repairing cement surfaces; cutting, shaping, assembling and maintaining wooden structures and fittings; and performing miscellaneous construction and building maintenance tasks.

##### **711 BUILDING FRAME AND RELATED TRADES WORKERS**

Building frame and related trades workers construct, maintain and repair buildings, erect and repair foundations, walls and structures of brick, stone and similar materials, shape and finish stone for building and other purposes, and perform miscellaneous construction and building maintenance tasks.

Tasks performed by workers in this minor group include: constructing, maintaining and repairing buildings and other structures by using traditional and/or modern building techniques; constructing and repairing foundations, walls and structures of brick, stone and similar materials; breaking quarried stone into slabs or blocks; cutting, shaping and finishing stone for building,

ornamental, monumental and other purposes; erecting reinforced concrete frameworks and structures as well as finishing and repairing cement surfaces; cutting, shaping, assembling and maintaining wooden structures and fittings; and performing miscellaneous construction and building maintenance tasks. Supervision of other workers may be included.

#### **7111 HOUSE BUILDERS**

House builders erect, maintain and repair houses and similar small buildings using either traditional or modern techniques and materials.

Their tasks include:

- a) preparing ground for erecting building or other structures;
- b) erecting structures to support roof, and building and covering walls with appropriate materials;
- c) fixing rafters to roof and covering with roofing material;
- d) levelling floor to make it smooth and serviceable;
- e) maintaining and repairing existing structures;
- f) arranging for specialized work such as bricklaying, painting, plumbing and electrical wiring to be done by subcontractors; and
- g) coordinating and supervising the activities of subcontractors, laborers and other workers.

##### **Examples:**

House Builder

Nipa house builder (sawali, straw)

#### **7112 BRICKLAYERS AND RELATED WORKERS**

Bricklayers and related workers lay bricks, pre-cut stones and other types of building blocks in mortar to construct and repair walls, partitions, arches and other structures.

Their tasks include:

- a) laying stone, brick and similar building blocks to construct or repair walls, partitions, fireplaces and other structures such as smokestacks, furnaces, converters, kilns and ovens, piers and abutments;
- b) laying footpaths, kerbs and pavements; and
- c) laying bricks or other masonry to build patios, garden walls and other decorative installations.

##### **Examples:**

Blocklayer

Firebrick layer

Chimney builder

Paver

Construction bricklayer

Refractory bricklayer

#### **7113 STONEMASONS, STONE CUTTERS, SPLITTERS AND CARVERS**

Stonemasons, stone cutters, splitters and carvers cut and shape hard and soft stone blocks and slabs for the construction and maintenance of stone structures and monumental masonry, and carve designs and figures in stone.

Their tasks include:

- a) driving wedges into quarried stone to break it into slabs or blocks;
- b) selecting and grading slabs and blocks of granite, marble, and other stone;
- c) cutting, shaping and finishing building and monumental stone such as granite or marble by using hand or hand-powered tools;
- d) making patterns and marking shapes on stone for subsequent sawing, planing, drilling and other dressing and cutting operations;

- e) cutting and carving characters, figures or designs on stone blocks used for monuments or memorials;
- f) setting stone in the erection of monuments and memorials; and
- g) repairing and replacing stonework on old buildings, churches and monuments.

**Examples:**

Construction stonemason	Mason, monument
Cutter, mosaic	Splitter, stone
Granite Cutter	Stone carver
Lathe operator (stone)	Stone cutter
Mason (general)	Stonemason
Mason leadman	Stone Polisher (hand or hand-powered tools)

**7114 CONCRETE PLACERS, CONCRETE FINISHERS AND RELATED WORKERS**

Concrete placers, concrete finishers and related workers erect reinforced concrete frameworks and structures, make forms for molding concrete, reinforce concrete surfaces, cement openings in walls or casings for wells, finish and repair cement surfaces and carry out terrazzo work.

Their tasks include:

- a) constructing and repairing reinforced concrete floors, walls, tanks, silos and other concrete structures;
- b) making shuttering or assembling prefabricated forms for molding concrete;
- c) cementing openings in walls or casings for wells;
- d) finishing and smoothing surfaces of concrete structures; and
- e) applying a durable, smooth surfacing composed of cement, sand pigment and marble particles to floors, known as a terrazzo finish.

**Examples:**

Cement finisher	Gas or oil well cementer
Concrete finisher, general	Reinforced concrete (general)
Concrete placer	Terrazzo worker
Concrete shutterer	

**7115 CARPENTERS AND JOINERS**

Carpenters and joiners cut, shape, assemble, erect, maintain and repair various types of structures and fittings made from wood and other materials.

Their tasks include:

- a) making, altering and repairing structural and other woodwork at a work-bench and on a construction site;
- b) constructing, erecting and installing heavy-framed wooden structures on building sites;
- c) fitting, assembling and altering internal and external fixtures of buildings, such as walls, doors, door and window frames, facings and paneling;
- d) making, repairing and fitting scenic equipment for theatrical performances, motion picture or television productions; and
- e) constructing, assembling, altering and repairing wooden fixtures and fittings in train coaches, aircraft, ships, boats, floats, and other vehicles.

**Examples:**

Carpenter, finish	Joiner
Carpenter, general	Shipwright (wood)
Carpenter, rough	Wood and sash maker

**7119 BUILDING FRAME AND RELATED TRADES WORKERS NOT ELSEWHERE CLASSIFIED**

This unit group covers building frame and related trades workers not classified elsewhere in Minor group 711, Building frame and related trades workers. For instance the group includes steeplejacks, scaffolders and demolition workers.

Their tasks would include:

- a) climbing and performing miscellaneous construction and building maintenance work on tall structures such as towers, chimneys and spires;
- b) erecting temporary metal or wooden scaffolding on building sites; and
- c) demolishing buildings and other structures.

**Examples:**

Building maintenance man	Steeplejack
Scaffolder	Building wrecker
Skilled demolition worker	

**712 BUILDING FINISHERS AND RELATED TRADES WORKERS**

Building finishers and related trades workers cover, apply or install, maintain and repair roofs, floors, walls, insulation systems, glass in windows or other frames, as well as plumbing, piping and electrical systems in buildings and other structures.

Tasks performed usually include: covering roof frameworks with one or more kinds of material; installing parquet and other kinds of flooring or covering floors and walls with tiles or mosaic panels; applying plaster to walls and ceilings; applying insulating material to walls, floors and ceilings; cutting, fitting and setting glass in windows and similar openings; and installing plumbing and pipeline systems; installing electrical wiring and related equipment. Supervision of other workers may be included.

**7121 ROOFERS**

Roofers build and repair roofs on all types of buildings using one or more kinds of materials.

Their tasks include:

- a) studying drawings, specifications and construction sites to determine materials required;
- b) covering roof frameworks with slate and pre-fabricated tiles to cover pitched roofs;
- c) laying a waterproof shield and fixing metallic or synthetic materials to a building's frame;
- d) sizing and cutting roofing materials to fit around edges corners and protuberances such as chimney;
- e) using natural materials such as thatching to provide roof coverings; and
- f) creating temporary structures such as scaffolding and ladders.

**Examples:**

Asphalt roofer	Slate roofer
Composition roofer	Thatcher roofer
Metal roofer	Tile roofer
Roof fixer	

**7122 FLOOR LAYERS AND TILE SETTERS**

Floor layers and tile setters install, maintain and repair flooring, and cover floors, walls and other surfaces with tiles or mosaic panels for decorative or other purposes.

Their tasks include:

- a) preparing floor areas for covering with a variety of materials;
- b) assembling carpet, tiles or other materials and laying them on floors according to design and other specifications;
- c) preparing wall areas for covering with tiles or other materials for decorative or other purposes such as acoustic insulation; and
- d) setting tiles and constructing and laying mosaic panels to walls, floors and other surfaces.

**Examples:**

Carpet layer	Setter, marble
Floor layer	Setter, tile (general)
Setter, mosaic	Tile layer (composition)
Parquetry worker	Wall and floor tiler

**7123 PLASTERERS**

Plasterers install, maintain and repair plasterboard in buildings, and apply decorative and protective coverings of plaster, cement and similar material to the interiors and exteriors of structures.

Their tasks include:

- a) applying one or more coats of plaster to interior walls and ceilings of buildings to produce finished surface;
- b) measuring, marking and installing ornamental plaster panels, and casting and trimming ornamental plaster cornices;
- c) applying protective and decorative covering of cement, plaster and similar materials to exterior building surfaces; and
- d) making and installing decorative plaster fixtures of fibrous plaster.

**Examples:**

Fibrous Plasterer	Solid Plasterer
Ornamental Plasterer	Stucco Plasterer
Plasterer, general	

**7124 INSULATION WORKERS**

Insulation workers apply and repair insulating materials to buildings, boilers, pipes or refrigeration and air-conditioning equipment.

Their tasks include:

- a) cutting insulation material by size and shape;
- b) applying slabs and sheets of insulating or sound-absorbing materials to walls, floors and ceilings of buildings;
- c) blow and pack insulating or sound-absorbing materials into cavities between walls, floors and ceilings of buildings with power-driven machines;
- d) examining plans, specifications and work sites to determine the type, quality and quantity of insulation material required;
- e) applying insulating materials to exposed surfaces of equipment such as boilers, pipes and tanks; and
- f) insulating refrigeration and air-conditioning equipment.

**Examples:**

Boiler and pipe insulation worker	Insulator
Insulation installer	Refrigeration and air-conditioning
Insulation worker, accoustical	equipment insulation worker
Insulator worker (Aeronautical)	

**7125 GLAZIERS**

Glaziers measure, cut, finish, fit and install flat glass and mirrors.

Their tasks include:

- a) selecting the type of glass to be used, cutting to right size and shape and installing in windows, doors, showers and partitions of buildings;
- b) installing glass and mirrors in skylights, display cases, interior walls and ceilings;
- c) installing or replacing windscreens in vehicles or boats; and
- d) creating decorative glass features such as glass walls, staircases, balustrades and stained-glass windows.

**Examples:**

Autoglazier	Patent roofing glazier
Building glazier	Plate-glass glazier
Construction glazier	Roofing glazier
Glazier	Vehicle glazier
Leaded-glass glazier	

**7126 PLUMBERS AND PIPE FITTERS**

Plumbers and pipe fitters assemble, install, repair and maintain pipe systems, fittings and fixtures for water, gas, drainage, sewerage systems, and hydraulic and pneumatic equipment.

Their tasks include:

- a) measuring, cutting, threading, bending, jointing, assembling, installing, maintaining and repairing pipes, fittings and fixtures of drainage, heating, water supply and sewerage systems;
- b) installing gas appliances, dishwashers and water heaters, sinks and toilets using hand and power tools;
- c) laying clay, concrete or cast-iron pipes in ditches to form sewers, drains or water mains, or for other purposes; and
- d) inspecting, examining and testing installed systems and pipes, using pressure gauge, hydrostatic testing, observation or other methods.

**Examples:**

Aircraft fitter (pipe and tube)	Piping charge hand
Fitter, pipe	Piping inspector
Gas pipe fitter	Plumber
Marine pipe fitter	Ventilation pipe fitter
Pipe layer	

**7127 AIR CONDITIONING AND REFRIGERATION MECHANICS**

Air conditioning and refrigeration mechanics assemble, install, maintain and repair air conditioning and refrigeration systems and equipment.

Their tasks include:

- a) interpreting blueprints, drawings or other specifications;

- b) assembling, installing and repairing components for air conditioning and refrigeration systems;
- c) connecting piping and equipment by bolting, riveting, welding or brazing; and
- d) testing systems, diagnosing faults and performing routine maintenance or servicing.

**Examples:**

Air conditioning equipment mechanic	Refrigeration mechanic
Air conditioning plant installer	Refrigeration plant installer
Air conditioning plant mechanic	Refrigeration plant mechanic
Air duct worker	

**713 PAINTERS, BUILDING STRUCTURE CLEANERS AND RELATED TRADES WORKERS**

Painters, building structure cleaners and related trades workers prepare surfaces and apply paint and similar materials to buildings and other structures, vehicles or various manufactured articles. They cover interior walls and ceilings with wallpaper, clean chimneys and exterior surfaces of buildings and other structures.

Tasks performed usually include: preparing surfaces and applying paint and similar materials to buildings and other structures; applying paint or varnish to vehicles or various manufactured articles, usually with a hand-spraying device; covering interior walls and ceilings with wallpaper, silk or other fabrics; cleaning chimneys; and cleaning exterior surfaces of buildings and other structures. Supervision of other workers may be included.

**7131 PAINTERS AND RELATED WORKERS**

Painters and related workers prepare surfaces of buildings and other structures for painting, apply protective and decorative coats of paint or similar materials, or cover interior walls and ceilings of buildings with wallpaper or other finishes.

Their tasks include:

- a) cleaning and preparing walls and other surfaces of buildings for painting or wallpapering;
- b) selecting and preparing paints to required colors by mixing pigments and additives;
- c) applying or spraying paint, varnish, and similar materials to surfaces, fixtures and fittings of buildings;
- d) measuring and hanging wallpaper or other fabrics on interior walls and ceilings; and
- e) applying paints, varnishes and stains to surfaces using brushes, rollers and sprays.

**Examples:**

Building painter	Painter
Construction painter	Structural steel and ship painter
Decorative painter	Wall paperhanger
House painter	

**7132 SPRAY PAINTERS AND VARNISHERS**

Spray painters and varnishers operate spray painting and varnishing equipment to apply protective coatings to manufactured items or structures.

Their tasks include:

- a) preparing surfaces to be coated using a variety of methods to remove grease, dirt and rust;

- b) painting cars, buses, trucks and other vehicles, and applying varnish and other protective coatings; and
- c) applying paint as well as protective coatings of enamel or varnish on metal, wooden and other manufactured products, usually with a hand-spraying device.

**Examples:**

Aircraft painter	Paint sprayer, varnishers
Automotive painter	Spray-painter, except construction
Furniture painter (spray)	Upholstery painter
Manufactured articles painter	Vehicle painter
Manufactured articles varnisher	Wood finisher, furniture

**7133 BUILDING STRUCTURE CLEANERS**

Building structure cleaners clean exterior surfaces of buildings and other structures, and remove soot from chimneys.

Their tasks include:

- a) cleaning exterior surfaces of stone, brick, metal or similar materials by means of chemicals, or a jet of steam or sand applied under high pressure;
- b) removing soot from flues, chimneys and connecting pipes; and
- c) removing asbestos, mold and fire damaged surfaces from buildings.

**Examples:**

Chimney sweep  
Cleaner, building exteriors  
Sandblasters, building exteriors

**72 METAL, MACHINERY AND RELATED TRADES WORKERS**

Metal, machinery and related trades workers cast, weld, forge and, by other methods, form metal, erect, maintain and repair heavy metal structures, engage in machine-tool setting as well as in fitting, maintaining and repairing machinery, including engines, vehicles, or produce tools and various non-precious-metal articles.

The work is carried out by hand and by hand-powered and other tools which are used to reduce the amount of physical effort and time required for specific tasks, as well as to improve the quality of the products. The tasks call for an understanding of the work organization, the materials and tools used, and the nature and purpose of the final product.

Tasks performed by workers in this sub-major group usually include: making molds and cores for casting metal; casting, welding and shaping metal; installing, erecting, maintaining and repairing heavy metal structures, tackle and related equipment; forging and forming steel and other non-precious metals to make and repair machinery, tools, equipment and other articles; setting for operators or setting and operating various machine tools; and fitting, maintaining and repairing industrial machinery, including engines and vehicles. Supervision of other workers may be included.

**721 SHEET AND STRUCTURAL METAL WORKERS, MOLDERS AND WELDERS, AND RELATED WORKERS**

Sheet and structural metal workers, molders and welders, and related workers, make molds and cores for casting metal, weld and cut metal parts, make and repair articles of sheet metal, and install, erect, maintain and repair heavy metal structures, tackle, cable-cars and related equipment.



Tasks performed usually include: making molds and cores for casting metal; casting, welding and shaping metal parts; making and repairing articles of sheet metal such as sheet steel, copper, tin, or brass; and installing, erecting, maintaining and repairing heavy metal structures, as well as tackle, cable cars and related equipment.

### 7211 METAL MOLDERS AND COREMAKERS

Metal molders and coremakers make molds and cores for casting metal.

Their tasks include:

- a) making molds by hand or using auxiliary machines on a bench for small metal castings, on the foundry floor, or in a pit for large castings;
- b) making cores for use in metal molds;
- c) cleaning and smoothing molds, core boxes, and repairing surface imperfections;
- d) moving and positioning work pieces such as mold sections, patterns, and bottom boards, using cranes, or signaling others to move work pieces;
- e) positioning patterns inside mold sections and clamping sections together;
- f) cutting spouts, runner holes and sprue holes into molds; and
- g) lifting upper mold sections from lower sections and remove molded patterns.

#### Examples:

Bench molder	Machine coremaker
Filler metal molder	Machine molder
Floor and fit molder	Metal castings molder
Hand coremaker	

### 7212 WELDERS AND FLAME CUTTERS

Welders and flame cutters weld and cut metal parts using gas flame, electric arc and other sources of heat to melt and cut, or to melt and fuse metal.

Their tasks include:

- a) welding metal parts using gas flame, or an electric arc, thermite compound or other methods;
- b) operating resistance-welding machines;
- c) using blowtorch to make and repair lead linings, pipes, floors and other lead fixtures;
- d) brazing metal parts together;
- e) cutting metal pieces using gas flame or an electric arc;
- f) joining metal parts by hand soldering;
- g) monitoring the fitting, burning, and welding processes to avoid overheating of parts or warping, shrinking, distortion, or expansion of material; and
- h) examining work pieces for defects and measuring work pieces with straight edges or templates to ensure conformance with specifications.

#### Examples:

Body welder	Orbital welder
Brazer	Pipe welder
Electric arc welder (machine)	Resistance welder
Electric welder	Shielded metal arc welder
Flame cutter	Thermite welder
Gas tungsten arc welder	Welder
Gas welder	

**7213 SHEET METAL WORKERS**

Sheet metal workers make, install and repair articles and parts of articles made out of sheet metal such as sheet steel, copper, tin, brass, aluminum, zinc or galvanised iron.

Their tasks include:

- a) marking sheet metal for cutting and shaping;
- b) making and repairing household utensils and other articles in tin, copper and light alloys, or ornamental articles and fittings;
- c) making and repairing boilers, tanks, vats and similar containers;
- d) installing and repairing sheet-metal parts of vehicles and aircraft;
- e) converting blueprints into shop drawings to be followed in the construction and assembly of sheet metal products;
- f) determining project requirements, including scope, assembly sequences, and required methods and materials, according to blueprints, drawings, and written or verbal instructions; and
- g) inspecting product quality and installation to ensure conformance to specifications.

**Examples:**

Auto body repairman	Sheet metal worker, aircraft
Automotive body builder	Sheet metal worker, general
Boilersmith	Sheet metal worker, ornamental
Coppersmith	Sheet metal worker, vehicle
Plate metal worker	Tinsmith
Sheet metal marker	

**7214 STRUCTURAL METAL PREPARERS AND ERECTORS**

Structural metal preparers and erectors assemble, erect and dismantle structural metal frames of buildings and other structures.

Their tasks include:

- a) marking metal framework as a guide when drilling, cutting, and shaping them for use in buildings, ships and other structures;
- b) drilling, cutting and shaping structural steel in a workshop;
- c) erecting steel framework for buildings, bridges and other constructions;
- d) assembling and erecting the framework and other metal parts of ships' structures;
- e) shaping and fitting structural-steel plates of ships under construction or repair; and
- f) riveting structural-metal members by hand, machine or pneumatic riveter.

**Examples:**

Constructional steel erector	Riveter, hand
Erector, structural metal	Riveter, machine
Iron works fabricator	Riveter, pneumatic
Metal shipwright	Ship plater
Preparer, structural metal	Steelman
Reinforcing iron worker	Structural metal maker
Riveter	Structural steel worker

**7215 RIGGERS AND CABLE SPLICERS**

Riggers and cable splicers assemble rigging gear to move and position equipment and structural components, or install and maintain cables, ropes and wires on construction sites, buildings or other structures.

Their tasks include:

- a) estimating the size, shape and weight of objects to be moved and deciding on the type of equipment to move them;
- b) installing and repairing cables, ropes, wires, pulleys and other tackle;
- c) joining, repairing and fitting attachments to wires, ropes and cables;
- d) working as member of crew erecting and repairing derricks for drilling water, gas and oil-wells;
- e) lifting and mounting scenery, lighting and other equipment in theatres and on film sets; and
- f) installing and maintaining communication towers, aerial cableways, funicular railways, ski lifts and similar infrastructure.

**Examples:**

Aircraft rigger	Rigger, oil-drilling
Cable splicer	Rigger, ship
Rigger	Rope and cable splicer (general)
Rigger, gas-drilling	Suspension bridge cable worker
Rigger, hoisting equipment, construction	Theatrical rigger
Rigger, hoisting equipment, general	Tower rigger

**722 BLACKSMITHS, TOOLMAKERS AND RELATED TRADES WORKERS**

Blacksmiths, toolmakers and related trades workers, hammer and forge bars, rods or ingots of iron, steel and other metals to make and repair various kinds of tools, equipment and other articles, set machine tools for operators or set and operate various machine tools, and polish and sharpen surfaces.

Tasks performed usually include: hammering and forging iron, steel and other metals to make and repair various kinds of tools, equipment and other articles; setting machine tools for operators or setting and operating various machine tools working to fine tolerances; and polishing and sharpening metal surfaces and tools.

**7221 BLACKSMITHS, HAMMERSMITHS AND FORGING PRESS WORKERS**

Blacksmiths, hammersmiths and forging press workers hammer and forge bars, rods, ingots and plates of iron, steel or other metals, and draw wire to make and repair various kinds of tools, metal articles, pieces of equipment, and agricultural and related implements.

Their tasks include:

- a) heating metal in forge furnace and manufacturing and repairing articles by drawing, bending;
- b) cutting, hammering metal on an anvil, punching, shearing, joining and hardening or tempering;
- c) shaping heated metal into forgings on power hammer equipped with open dies;
- d) operating closed-die drop hammer to forge metal articles;
- e) operating a power-press machine equipped with closed dies to forge metal articles;
- f) drawing wire;
- g) reading work orders or blueprints to determine specified tolerances and sequences of operations for machine setup; and

- h) measuring and inspecting machine parts to ensure conformance to product specifications.

**Examples:**

Blacksmith	Hammer-smith
Drop-hammer worker	Hand metal former
Forging press worker	Hand wire drawer

**7222 TOOLMAKERS AND RELATED WORKERS**

Toolmakers and related workers make and repair custom made and specialized tools, sports guns, locks, dies, patterns machinery components and other metal articles using hand and machine tools to work metal to fine tolerances.

Their tasks include:

- a) reading and interpreting engineering drawings and specifications of tools, dies, prototypes or models;
- b) preparing templates and sketches, and determining work processes;
- c) visualizing and computing dimensions, sizes, shapes, and tolerances of assemblies, based on specifications;
- d) positioning, securing and measuring metal stock or castings to lay out for machining;
- e) setting up, operating and maintaining conventional and computer numerically controlled machine tools to cut, turn, mill, plane, drill, bore, grind or otherwise shape workpiece to prescribed dimensions and finish;
- f) fitting and assembling parts to make and repair jigs, fixtures and gauges;
- g) repairing and modifying sports guns and other small arms;
- h) making, fitting, assembling, repairing and installing lock parts and locks;
- i) making and repairing metal patterns for preparation of foundry molds;
- j) laying out lines and reference points on metal stock to guide other workers who cut, turn, mill, grind or otherwise shape metal; and
- k) verifying dimensions, alignments, and clearances of finished parts for conformance to specifications, using precision measuring instruments and testing completed items for proper operation.

**Examples:**

Die maker	Metal marker
Foundry worker	Metal pattern maker
Gauge maker	Plastic pattern maker
Gunsmith	Toolmaker
Jig maker	Toolmaker foreman
Locksmith	

**7223 METAL WORKING MACHINE TOOL SETTERS AND OPERATORS**

Metal working machine tool setters and operators set and/or operate, various machine tools working to fine tolerances.

Their tasks include:

- a) setting one or more types of machine tool for production of metal articles in standardized series;
- b) operating and monitoring metalworking machines, such as lathes, milling, planing, boring, drilling, grinding or honing machines, including multi-purpose numerically controlled metalworking machines;
- c) performing similar tasks when machining plastics and other metal substitutes;
- d) observing machine operations to detect work piece defects or machine malfunctions, adjusting machines as necessary;

- e) inspecting work pieces for defects, and measuring work pieces to determine accuracy of machine operation, using rules, templates, or other measuring instruments; and
- f) changing worn machine accessories, such as cutting tools and brushes, using hand tools.

**Examples:**

Boring machine-setter operator	Planning-machine setter-operator
Honing-machine setter-operator	Precision- grinding-machine setter-operator
Lathe setter-operator	Setter-operator, drilling
Machine tool setter-operator	machine/metalworking
Metalworking-machine setter-operator (general)	Rivet production machine operator
Milling machine setter-operator	Casting machine operator
Numerical control machine setter-operator	Tool production machine operator

**7224 METAL POLISHERS, WHEEL GRINDERS AND TOOL SHARPENERS**

Metal polishers, wheel grinders and tool sharpeners polish and grind metal surfaces and sharpen tools.

Their tasks include:

- a) operating fixed or portable buffing and polishing machines;
- b) sharpening cutting tools and instruments using grinding wheels or mechanically operated grinding machines;
- c) repairing, adjusting and sharpening saw blades and metal teeth of cylinders in textile carding machines;
- d) dressing grinding wheels, according to specifications;
- e) monitoring machine operations to determine whether adjustments are necessary; stop machines when problems occur;
- f) inspecting, feeling, and measuring work pieces to ensure that surfaces and dimensions meet specifications; and
- g) selecting and mounting grinding wheels on machines, according to specifications, using hand tools and applying knowledge of abrasives and grinding procedures.

**Examples:**

Buffing machine operator	Saw sharpener
Card grinder	Sharpener, cutting instrument
Metal finisher	Textile card grinder
Metal polisher	Tool and cutter grinder
Metal-wheel grinder	Tool grinder, machine tool
Saw repairer	Tool sharpener

**723 MACHINERY MECHANICS AND REPAIRERS**

Machinery mechanics and repairers fit, install, maintain and repair engines, vehicles, agricultural or industrial machinery and similar mechanical equipment.

Tasks performed usually include: fitting, installing, maintaining and repairing engines, vehicles, agricultural or industrial machinery and similar mechanical equipment.

**7231 MOTOR VEHICLE MECHANICS AND REPAIRERS**

Motor vehicle mechanics and repairers fit, install, maintain, service and repair engines and the mechanical and related equipment of passenger cars, delivery trucks, motorcycles and other motor vehicles.

Their tasks include:

- a) detecting and diagnosing faults in engines and parts;
- b) fitting, examining, testing and servicing motor vehicle and motorcycle engines;
- c) replacing engine components or complete engines;
- d) fitting, examining, adjusting, dismantling, rebuilding and replacing defective parts of motor vehicles;
- e) installing or adjusting motors and brakes, and adjusting steering or other parts of motor vehicles;
- f) installing, adjusting, servicing and replacing mechatronics components of motor vehicles;
- g) performing scheduled maintenance services, such as oil changes, lubrications and engine tune-ups, to achieve smoother running of vehicles and ensure compliance with pollution regulations; and
- h) reassembling engines and parts after being repaired.

**Examples:**

Automobile mechanic	Motor truck mechanic
Automotive brakes systems service technician	Motor vehicle mechanic
Automotive mechanic (light duty)	Motor vehicle repairer
Automotive/train mechanic	Motor vehicle service technician
Camber mechanic	Motorcycle mechanic
Chief mechanic/technician	Repairman, motor vehicle
Diesel engine mechanic	Small engine mechanic
Garage mechanic	Train engine fitter
Internal combustion engine fitter-assembler	Train engine repairer
	Motorized rickshaw mechanic

**7232 AIRCRAFT ENGINE MECHANICS AND REPAIRERS**

Aircraft engine repairers and mechanics fit, service, repair and overhaul aircraft engines and assemblies, such as airframes, hydraulic, and pneumatic systems.

Their tasks include:

- a) fitting, examining, testing and servicing aircraft engines;
- b) replacing engine components or complete engines;
- c) examining and inspecting airframes and aircraft components, including landing gear, hydraulic systems, and deicers to detect wear, cracks, breaks, leaks, or other problems;
- d) maintaining, repairing, overhauling, modifying and testing aircraft structural, mechanical and hydraulic systems;
- e) reading and interpreting manuals, service bulletins, and other specifications to determine the feasibility and method of repairing or replacing malfunctioning or damaged components;
- f) maintaining, repairing, and rebuilding aircraft structures, functional components, and parts such as wings and fuselage, rigging, hydraulic units, oxygen systems, fuel systems, electrical systems, gaskets, and seals;
- g) inspecting completed work to certify that maintenance meets standards and the aircraft is ready for operation;
- h) maintaining repair logs, documenting all preventive and corrective aircraft maintenance;

- i) installing and testing electrical and electronic components, assemblies, and systems in aircraft; and
- j) connecting components to assemblies such as radio systems, instruments, magnetos, inverters, and in-flight refueling systems.

**Examples:**

Aeromechanic	Aircraft production/maintenance assistant
Aircraft engine fitter	Aircraft service technician
Aircraft maintenance supervisor	Aviation maintenance technician
Aircraft mechanic	Helicopter mechanic
Aircraft restorer	Jet engine mechanic
Airframe and power plant mechanic	Pneudraulic systems mechanic (aircraft)
Airframe fitter	Powerplant mechanic (aircraft)
Airmotive & equipment mechanic	Rocket engine component mechanic

**7233 AGRICULTURAL AND INDUSTRIAL MACHINERY MECHANICS AND REPAIRERS**

Agricultural and industrial machinery mechanics and repairers fit, install, examine, service and repair engines, agricultural and industrial machinery and mechanical equipment, except motor vehicle, aircraft and electric motors.

Their tasks include:

- a) fitting, installing, examining, servicing and repairing engines, machinery and mechanical equipment;
- b) oiling and greasing stationary engines and machinery;
- c) inspecting and testing new machinery and mechanical equipment for conformity with standards and specifications;
- d) disassembling machinery and equipment to remove parts and make repairs;
- e) examining parts for defects such as breakage and excessive wear;
- f) operating newly repaired machinery and equipment to verify the adequacy of repairs; and
- g) recording repairs and maintenance performed.

**Examples:**

Agricultural machinery fitter	Mechanical products tester
Agricultural machinery mechanic	Metalworking machine-tool fitter
Construction machinery mechanic	Metalworking machine-tool mechanic
Diesel engine mechanic (except motor vehicle)	Mining machinery fitter
Earth-moving equipment fitter	Mining machinery mechanic
Engine marine fitter	Office machinery fitter
Farm machinery mechanic	Oiler
Farm tractor mechanic	Plant maintenance mechanic
Greaser	Power plant mechanic
Industrial equipment fitter	Printing machinery fitter
Industrial plant mechanic	Printing machinery mechanic
Industrial sewing machine mechanic	Reciprocating steam-engine mechanic
Loomfixers	Ship fitter
Lubrication man	Stationary engine fitter
Machinery erector and installer	Stationary engine greaser
Machinery mechanic (general)	Stationary engine repairer
Marine craft mechanic	Textile machinery fitter
Marine machinery mechanic	Turbine fitter (except aircraft and marine)
Mechanic, heavy equipment	Turbine mechanic (except aircraft and marine)
Mechanic, hydraulic	Woodworking machinery fitter
Mechanical products inspector	Woodworking machinery mechanic

**7234 BICYCLE AND RELATED REPAIRERS**

Bicycle and related repairers fit, maintain, service and repair the mechanical and related equipment of bicycles, rickshaws, baby carriages, wheelchairs and similar non-motorized transport equipment.

Their tasks include:

- a) examining, servicing and repairing bicycles and other non-motorized transport equipment;
- b) cleaning and lubricating bearings and other moving parts;
- c) replacing and repairing components and accessories, such as brakes, driving chain mechanism, wheels, handle bars etc.;
- d) changing tires and controlling air pressure;
- e) spray painting frames; and
- f) assembling new bicycles, wheelchairs and similar non-motorized equipment.

**Examples:**

Bicycle mechanic  
Bicycle repairer

Perambulator repairer  
Wheelchair repairer

**73 HANDICRAFT AND PRINTING WORKERS**

Handicraft and printing workers make and repair precision instruments, musical instruments, various articles such as jewellery, precious metalware, ceramics, porcelain ware and glassware, as well as handicrafts made of wood or textile, leather or related materials, or they perform printing or book-binding tasks.

The work is carried out by hand and by hand-powered and other tools which are used to reduce the amount of physical effort and time required for specific tasks, as well as to improve the quality of the products. The tasks call for an understanding of the work organization, the materials and tools used, and the nature and purpose of the final product.

Tasks performed by workers in this sub-major group usually include: making and repairing nautical, meteorological, optical and other precision instruments and equipment; making and repairing musical instruments; making jewellery and precious metalware; making pottery, porcelain ware, ceramics and glassware; painting and decorating various articles; producing handicraft articles in wood or textile, leather and related materials; and performing printing or book-binding tasks. Supervision of other workers may be included.

**731 HANDICRAFT WORKERS**

Handicraft workers combine artistic and manual skills to design, make, repair, adjust, maintain and decorate precision instruments, musical instruments, jewellery and other precious-metals, pottery and porcelain ware. They apply traditional and/or recently developed techniques to carve, mold, assemble, weave and decorate various glass, ceramics, textile, straw, stone, wood and leather articles.

Tasks performed usually include: making, calibrating, repairing, maintaining and installing musical and precision instruments; fabricating, adjusting, repairing, or appraising jewellery, ceremonial or religious items, gold, silver, other precious metals, or gems; cutting, filing, polishing and setting precious and semiprecious stones including gems and diamonds and engraving designs on jewellery and precious metal articles; preparing pottery, porcelain ware, sanitary ware, bricks, tiles and abrasive wheels by hand or by machine; blowing, molding, pressing, cutting, trimming, grinding and polishing glass, shaping molten glass according to patterns; decorating articles made of wood, metal, textiles, glass, ceramics and other materials, and planning, laying out and painting



letters, figures, monograms and designs to make signs; applying traditional techniques like seasoning, impregnation to prepare wood, straw, rattan, reeds, stone, clay, shells, and other materials, and carving, molding, assembling, weaving, or painting and decorating various articles for personal or household use, or for decorative purposes; preparing materials to make wicker furniture, brushes and brooms and weaving various kinds of baskets; and applying traditional techniques and patterns to produce woven fabrics, knitted, embroidered and other garments and household articles.

### **7311 PRECISION-INSTRUMENT MAKERS AND REPAIRERS**

Precision-instrument makers and repairers make, calibrate, repair, maintain, adjust and install mechanical watches, clocks, nautical, meteorological, optical, orthopedic and other precision instruments and equipment and set them for correct performance.

Their tasks include:

- a) repairing, cleaning, and adjusting mechanisms of timing instruments, such as watches and clocks;
- b) adjusting timing regulators, using calipers, watch-rate recorders, and tweezers;
- c) cleaning, rinsing, and drying timepiece parts, using solutions and ultrasonic or mechanical watch-cleaning machines;
- d) testing timepiece accuracy and performance, using meters and other electronic instruments;
- e) testing accuracy of meters, gauges, indicators, or other recording or controlling instruments to locate defective components and for conformance to standards;
- f) calibrating instruments or scales, using hand tools, computer, or electronic devices;
- g) inspecting components, connections, and drive mechanisms to detect defects;
- h) assembling instruments and devices, such as barometers, control valves, gyroscopes, hygrometers, speedometers, tachometers, and thermostats;
- i) testing, calibrating, and adjusting electronic, mercurial, aneroid, and other types of meteorological instruments for compliance with printed specifications and schematic diagrams, using voltmeters, oscilloscopes, tube testers, and other test instruments;
- j) adjusting and repairing masts, supporting structures, clearance lights, control panels, control cabling and wiring, and other electrical and mechanical devices;
- k) repairing and setting optical instruments such as microscopes, telescopes, theodolites, sextants; and
- l) checking whether assembled units conform to specifications and ensuring stipulated performance and sensitivity by standard tests.

#### **Examples:**

Dental prosthesis maker	Orthopedic appliance repairer
Dental prosthesis repairer	Precision instrument maker
Maker and repairer, instrument/meteorological	Precision instrument repairer
Maker and repairer, instrument/surgical	Precision-instrument assembler
Optical instrument maker	Surgical instrument maker
Optical instrument repairer	Watch and clock assembler
Orthopedic appliance maker	Watch and clock repairer

### **7312 MUSICAL INSTRUMENT MAKERS AND TUNERS**

Musical-instrument makers and tuners make, assemble, repair, adjust, restore musical instruments and tune them to the required pitch with hand or power tools. They usually specialize in one type of instrument, such as string instruments, brass instruments pianos, reed instruments or percussion instruments.

Their tasks include:

- a) fabricating and assembling musical instruments and instrument parts of wood, ebonite, metal, leather and other materials;
- b) repairing or replacing musical instrument parts and components, such as strings, bridges, felts, and keys, using hand and power tools;
- c) playing and inspecting instruments to evaluate their sound quality and to locate any defects;
- d) adjusting string tensions to achieve proper tone or pitch of stringed instruments;
- e) adjusting lips, reeds, or toe hole of organ pipes, using hand tools, to regulate airflow and loudness of sound;
- f) tuning and servicing pipe organs by adjusting pitch of organ A pipes to conform with pitch of tuning fork and adjusting pitch of other pipes with references to pitch of tuned pipes;
- g) installing new drumheads in percussion instruments;
- h) tuning accordions by aurally comparing pitch of reeds with master reeds and filing reeds to obtain standard pitch;
- i) aligning pads and keys on reed or wind instruments;
- j) tuning percussion instruments to required pitch by tightening or loosening cords holding leather pieces fixed atop or at both ends of instrument; and
- k) assembling and installing new pipe organs and pianos in buildings.

**Examples:**

Accordion maker	Metal wind instrument maker
Instrument/musical maker (brass)	Musical instrument tuner
Instrument/musical maker (string)	Organ builder
Instrument/musical maker (woodwind)	Piano maker

### **7313 JEWELLERY AND PRECIOUS METAL WORKERS**

Jewellery and precious metal workers design, fabricate, adjust, repair, or appraise jewellery, ceremonial or religious items, gold, silver, other precious metals, or gems. They cut, file, polish and set precious and semiprecious stones including gems and diamonds and engrave designs on jewellery and precious metal articles. They cut and polish diamonds for industrial purposes.

Their tasks include:

- a) casting jewellery and other non-ferrous metal articles by hand;
- b) creating new jewellery designs and modifying existing designs, using computers as necessary;
- c) cutting designs in molds or other materials to be used as models in the fabrication of metal and jewellery products;
- d) altering existing jewellery mountings in order to reposition jewels or to adjust mountings;
- e) repairing, reshaping and restyling old jewellery or precious metal ware following designs or instructions;
- f) making complete jewellery articles such as rings, necklaces, bangles, brooches and bracelets from materials such as gold, silver, platinum, and precious or semiprecious stones;
- g) examining gem surfaces and internal structures, using polariscopes, refractometers, microscopes, and other optical instruments, to differentiate between stones, to identify rare specimens, or to detect flaws, defects, or peculiarities affecting gem values;
- h) cutting and polishing gems and setting them in jewellery articles;
- i) engraving or embossing letters, designs or decorative lines on jewellery and precious metal ware;

- j) grinding, drilling and finishing jewel bearings for use in precision instruments such as compasses and chronometers; and
- k) examining assembled or finished products to ensure conformance to specifications, using magnifying glasses or precision measuring instruments.

**Examples:**

Gem cutter/faceter	Jewelry finishers, by hand and machine
Gem setter	Jewelry maker (goldsmith, silversmith)
Goldsmith	Jewelry polisher
Jeweller (general)	Jewelry repairer
Jewelry caster (hand)	Precious metal leaf maker
Jewelry caster (machine)	Precious metal roller
Jewelry engraver	Silversmith

**7314 POTTERS AND RELATED WORKERS**

Potters and related workers prepare pottery, porcelain ware, sanitary ware, bricks, tiles and abrasive wheels by hand or by machine.

Their tasks include:

- a) making articles of pottery and porcelain;
- b) making clay or plaster of Paris molds;
- c) reading technical drawings to know customer's requirements;
- d) forming articles on potter's wheel by pressing thumbs into centers of revolving clay to form hollows, and press on the inside and outside of emerging clay cylinders with hands and fingers, gradually raising and shaping clay to desired forms and sizes;
- e) adjusting wheel speeds according to the feel of the clay as pieces enlarge and walls become thinner;
- f) operating jigger machines to form ceramic ware, such as bowls, cups, plates, and saucers;
- g) adjusting and setting controls of pug mill that mixes, extrudes, cuts, and deposits clay charges in or over molds as specified;
- h) smoothening surfaces of finished pieces, using rubber scrapers and wet sponges;
- i) forming abrasive wheels by molding and pressing an abrasive mixture by hand or by machine;
- j) examining finished ware for defects, verifying accuracy of shapes and sizes of objects, using calipers and templates; and
- k) preparing work for sale or exhibition, and maintaining relationships with retail, pottery, art, and resource networks that can facilitate sale or exhibition of work.

**Examples:**

Abrasive wheel molder	Pottery and porcelain die-presser
Brick and tile molder	Pottery and porcelain jiggerman
Clay extruding-press operator	Pottery and porcelain maker
Decorators/lazers	Pottery and porcelain modeller
Potter, general	Pottery and porcelain presser (hand)
Pottery and porcelain caster (hand)	Pottery and porcelain thrower

**7315 GLASS MAKERS, CUTTERS, GRINDERS AND FINISHERS**

Glass makers, cutters, grinders and finishers blow, mold, press, cut, trim, grind and polish glass, shape molten glass according to patterns.

Their tasks include:

- a) heating glass to pliable stage, using gas flames or ovens, and rotating glass to heat it uniformly;
- b) blowing and bending glass tubing into specified shapes to form scientific apparatus like flasks, retorts, pipettes;
- c) grinding and polishing glass objects or parts to correct defects or to prepare surfaces for further finishing and smoothening and polishing rough edges, using belt sander or polishing wheels;
- d) examining glass stock and finished products and marking or discarding items with defects such as spots, stains, scars, snags, chips, scratches, or unacceptable shapes or finishes;
- e) reading work orders to determine dimensions, cutting locations, and quantities to cut;
- f) observing gauges, computer printouts and video monitors to verify specified processing conditions and make adjustments as necessary ;
- g) positioning pattern or drawing on glass, measuring dimensions, and marking cutting lines, using glass cutting tools and cutting glass along marked outlines or around pattern;
- h) setting up, operating and adjusting computerized or robotic glass cutting equipment;
- i) inspecting, weighing, and measuring products to verify conformance to specifications, using instruments such as micrometers, calipers, magnifiers, and rulers;
- j) regulating oven temperatures according to glass types to be processed;
- k) transferring pattern for individual stained glass parts from full size drawing to pattern paper, using stylus to trace drawings;
- l) spraying silver solution on glass to provide mirrored surface, using spray gun; and
- m) laying out cutting and grinding optical and other glass to specified dimensions and weight for molding into lens blanks and for use as watch crystals.

**Examples:**

Glass blower	Glass finisher
Glass cutter	Glass lens molder
Glass cutter (optical)	Glass scientific blower
Glass edge grinder	Glass tube bender

**7316 SIGN WRITERS, DECORATIVE PAINTERS, ENGRAVERS AND ETCHERS**

Sign writers, decorative painters, engravers and etchers decorate articles made of wood, metal, textiles, glass, ceramics and other materials. They plan, lay out and paint letters, figures, monograms and designs to make signs and engrave and etch ornamental and floral designs on glass and other articles.

Their tasks include:

- a) painting decorative free-hand designs on objects, such as pottery, glass, cigarette cases, lampshades;
- b) transferring from paper transfers decorative or ornamental designs on articles;
- c) integrating and developing visual elements, such as line, space, mass, color, and perspective, in order to produce desired effects such as the illustration of ideas, emotions, or moods;
- d) laying out and painting in one or more languages letters, figures, monograms and designs to make signs;
- e) sketching or tracing design or lettering onto work piece or pattern material to prepare pattern or stencil;
- f) designing pattern or lettering to paint work pieces, such as signs, glassware,

- pottery, or zinc plates;
- g) using software and routing equipment to produce 3D Carved images for application onto larger signage as well as engraved and inlaid signs;
  - h) designing and producing normal flat cut lettering or lettering that is shadowed with applied vinyl or lettering that is ready cut for application;
  - i) writing, painting, or printing signs or show cards used for display or other purposes;
  - j) cutting out letters and signs for display purposes from wallboard or cardboard, by hand or machines, such as electrically powered jigsaw or bandsaw;
  - k) examining sketches, diagrams, samples, blueprints, or photographs to decide how designs are to be etched, cut, or engraved onto work pieces;
  - l) measuring and computing dimensions of lettering, designs, or patterns to be engraved;
  - m) engraving and printing patterns, ornamental designs, etchings, trademarks, figures or lettering onto flat or curved surfaces of a wide variety of metal, glass, plastic, or ceramic items; and
  - n) etching decorative designs, calibration markings and other figures on glass articles.

**Examples:**

Brush painter	Glass enameller
Ceramics decorator	Glass engraver
Ceramics dipper	Glass etcher
Ceramics painter	Glass painter
Ceramics spray painter	Glass sandblaster
Engraver, linoleum block, hand	Hand dipper
Engraver, metal printing die, hand	Metal engraving etcher
Engraver, metal printing plate, hand	Mirror silverer
Engraver, metal printing roller, (hand/machine)	Photoengraver
Engraver, printing	Retoucher, printing plate
Engraver, printing/lithographic stone	Sign-maker
Engraver, rubber and wood (hand)	Signwriter

**7317 HANDICRAFT WORKERS IN WOOD, BASKETRY AND RELATED MATERIALS**

Handicraft workers in wood, basketry, and related materials apply traditional techniques like seasoning, impregnation to prepare wood, straw, rattan, reeds, stone, clay, shells, and other materials, and carve, mold, assemble, weave, or paint and decorate various articles for personal or household use, or for decorative purposes. Basketry weavers, brush makers and related workers select and prepare materials like bristles, nylon, fiber, bass, whisker and wire to make wicker furniture, brushes and brooms and weave various kinds of baskets.

Their tasks include:

- a) preparing wood, straw, rattan, reeds, stone, shells, or similar materials;
- b) carving floral and artistic designs on wooden surfaces for decorative purposes;
- c) painting free hand decorative designs on glass and pottery or porcelain ware;
- d) carving, assembling, weaving, painting and decorating various articles for personal or household use such as salad bowls, serving-spoons, cutting-boards, trays, vases, jugs, baskets, straw hats, straw mats and similar objects;
- e) carving, assembling, weaving and painting various decorative articles such as statues and other sculptures, chess pieces, jewellery, and similar objects;
- f) making wicker furniture from peeled and softened rattan, reeds, rushes, willow branches and similar materials;
- g) making various kinds of baskets by interlacing osier, rattan, reeds, rushes or

similar materials;

- h) forming bottom of basket by interlacing strips of rattan, wood veneer or other material with framework of rods of material such as willow;
- i) inserting rods around edge of bottom between woven sections of bottom and bending them upright to serve as framework for sides;
- j) selecting and preparing brush materials, such as bristles, nylon, fibers and wire, and setting them in brush base; and
- k) selecting and preparing materials, such as broom corn, bass, whisker and fiber, and fastening them to broom handles;

**Examples:**

Basket maker	Handicraft worker, reed weaving
Basketry weaver	Handicraft worker, stone articles
Broom maker (hand)	Handicraft worker, wooden articles
Brush maker (hand)	Paper box maker (hand)
Cottage industry worker (wood)	Rattan binder
Handicraft designer	Wicker furniture maker
Handicraft model maker	Wood carver
Handicraft worker, paper	

**7318 HANDICRAFT WORKERS IN TEXTILE, LEATHER AND RELATED MATERIALS**

Their tasks include:

- a) spinning and dyeing with natural dyestuffs, wool, cotton and other fibers;
- b) lace-making and weaving, knitting, or embroidering various garments and articles for household use;
- c) preparing and dyeing hides with natural dyestuffs and making traditional footwear or handbags, belts and other accessories;
- d) spinning and winding yarn by hand;
- e) drawing warp threads into loom by hand;
- f) weaving plain or figured cloth, tapestry, lace, carpet or other fabrics on hand looms;
- g) making carpets by using a knotting technique;
- h) knitting garments and other articles on hand-operated machine or by hand;
- i) crocheting or making braid by hand;
- j) making nets by hand;
- k) grading and classifying natural textile fibers;
- l) washing wool fibers;
- m) cleaning and fluffing textile fibers; and
- n) forming fibers into sliver, combing them, combining sliver into sliver laps or forming sliver into rove.

**Examples:**

Carpet weaver (hand)	Fiber/textiles drawer
Cloth weaver (hand)	Fiber/textiles rover
Cloth weaver (Jacquard loom)	Hand braidmaker
Fabric examiner	Hand crocheter
Fabric repairer	Handicraft worker, carpets
Fiber aide	Handicraft worker, leather
Fiber blender	Handicraft worker, textiles
Fiber carder	Hand-operated machine knitter
Fiber classer	Knitter
Fiber grader	Net maker (hand)
Fiber lapper	Tapestry maker (hand)

Fiber mixer	Thread and yarn spinner
Fiber picker	Threader, loom (hand)
Fiber preparer	Weaver
Fiber/textiles comber	Wool scourer

### 7319 HANDICRAFT WORKERS NOT ELSEWHERE CLASSIFIED

This unit group covers handicraft workers who perform traditional handicrafts not classified elsewhere. For instance, the group includes traditional handicraft workers in non-precious metals and stone.

#### Examples:

Candle making  
Metal toymaker  
Soap making

### 732 PRINTING TRADES WORKERS

Printing trades workers compose and set type prior to printing, set up and operate printing presses, bind and finish printed products, and prepare stencils and operate screen printing equipment.

Tasks performed usually include: operating graphic cameras and other photographic equipment to reproduce camera-ready copy onto films, plates and digital output devices; operating computer screen-based equipment for scanning, color separation and correction, retouching and other processes used to transfer copy to film and produce film for plate, cylinder and digital output productions; setting up, operating and monitoring machines used in typesetting, photographing copy, printing and cutting, folding, collating and binding printed material; performing routine finishing operations and machine maintenance; and preparing stencils and operating screen printing equipment.

### 7321 PRE-PRESS TECHNICIANS

Pre-press technicians proof, format, set and compose text and graphics into a form suitable for use in various printing processes and representation in other visual media.

Their tasks include:

- a) operating graphic cameras and other photographic equipment to reproduce camera-ready copy onto films, plates and digital output devices;
- b) using computer applications to generate images, text, layouts and impositions for print and other visual media displays;
- c) operating plate making equipment to reproduce images from film to printing plates, digital output devices and presses;
- d) operating computer screen-based equipment for scanning, color separation, color correction, masking, creative design, combining, imposing, retouching, and other processes used to transfer copy to film and produce film for plate, digital output and cylinder productions;
- e) carrying out digital and chemical proofing from digital systems, and negative and positive films;
- f) evaluating printed proofs, checking and correcting them for quality; and
- g) preparing and exposing carbon tissue for laying on cylinders by transfer method, and developing images.

#### Examples:

Blueprint machine operator	Photo-type-setting machine operator
Compositor, cold type/hot metal	Plate maker (printing)

Desktop publishing operator	Plate mounter (screen printing)
Digitizer	Platen press operator
Electronic pre-press technician	Scanner (data)
Hand compositor	Screen maker
Imposer	Type-casting machine operator
Linotype operator	Typesetter
Monotype keyboard operator	

**7322 PRINTERS**

Printers set up and operate digital, letterpress, lithographic, flexographic, gravure, newspaper and other printing presses.

Their tasks include:

- a) setting, adjusting and monitoring substrate-feed mechanisms, delivery mechanisms, inking systems and other printing machine functions;
- b) mixing ink and solvents to standard, and regulating paper and ink supply during print runs;
- c) monitoring, evaluating and determining press to check print quality standards against proofs and detect malfunctions;
- d) producing a variety of printed products using relief, lithographic, flexographic and gravure printing presses, and in-line finishing systems;
- e) preparing plates, blankets and impression cylinders on small offset lithographic printing presses;
- f) loading paper into feeding mechanisms;
- g) monitoring machine operations and quality of printing;
- h) maintaining, adjusting, repairing and cleaning machines; and
- i) producing digital print images, and transferring and outputting images.

**Examples:**

Cylinder pressman	Press roller maker
Developer, black and white	Printer, block
Developer, color	Printing machine operator
Digital press operator	Printing quality inspector
Direct lithographic pressman	Printing scheduler
Feeder operator (printing)	Repro-cameraman
Flexographic press operator	Reproduction machine operator
Gravure press operator	Rotary pressman
Large sheet-fed press operator	Rotary printing press operator
Letter Press-pressman	Rotogravure pressman
Offset Press (web fed)	Screen printer
Offset Pressman	Screen printing press operator
Offset Pressman (sheet fed)	Silk-screen printer
Offset printing press operator	Silk-screen stencil cutter
Paper cutting machine operator	Small press operator
Photograph enlarger	Stripper, black and white
Photographic equipment repairer	Stripper, colored
Photographic film and paper maker	Textile printer
Platen pressman	Wallpaper printer
Press operator printing/cylinder	Web press operator

**7323 PRINT FINISHING AND BINDING WORKERS**

Print finishing and binding workers bind books and other publications, and finish printed products by hand or machine.



Their tasks include:

- a) setting up and supervising the operation of automatic binding and finishing equipment;
- b) binding full, half and limp-bound books, and repairing bindings;
- c) folding, collating and sewing signatures by machine and hand;
- d) operating paper guillotines for pre-press and post-press paper cutting and trimming, and programming electronically operated units;
- e) operating systems to insert printed material into newspapers, magazines and envelopes;
- f) embellishing printed products automatically and manually; and
- g) operating photographic and electronic reproduction devices.

**Examples:**

Book embosser (hand and machine)	Gatherer operator
Bookbinder (hand and machine)	Multibinder operator
Collator/tabulator	Perfect binder operator
Cutter operator	Plastic laminator
Foil Stamp operator	Saddle stitch operator
Folder operator	Small machine bindery worker

## 74 ELECTRICAL AND ELECTRONICS TRADES WORKERS

Electrical and electronics trades workers install, fit and maintain electrical wiring systems and machinery and other electrical apparatus, electrical transmission and supply lines and cables, and electronic and telecommunications equipment and systems.

The work is carried out by hand and by hand-powered and other tools which are used to reduce the amount of physical effort and time required for specific tasks, as well as to improve the quality of the products. The tasks call for an understanding of the work organization, the materials and tools used, and the nature and purpose of the final product.

Tasks performed usually include: installing, maintaining, fitting and adjusting electrical and electronic wiring systems, machinery and equipment; examining blueprints, wiring diagrams and specifications to determine sequences and methods of operation; inspecting and testing electrical and electronic systems, equipment, cables and machinery to identify hazards, defects, and the need for adjustment or repair; installing maintaining and repairing electrical and telecommunications transmission lines; joining electrical, telecommunications and data cables; and maintaining, troubleshooting, fitting, adjusting, testing and repairing electronic equipment such as commercial and office machines and electronic instruments and control systems, computers, telecommunications and data transmission equipment.

### 741 ELECTRICAL EQUIPMENT INSTALLERS AND REPAIRERS

Electrical equipment installers and repairers install, fit and maintain electrical wiring systems and related equipment, electrical machinery and other electrical apparatus and electrical transmission and supply lines and cables.

Tasks performed usually include: installing, maintaining, fitting and adjusting electrical wiring systems, machinery and equipment; examining blueprints, wiring diagrams and specifications to determine sequences and methods of operation; inspecting and testing electrical systems, equipment, cables and machinery to identify hazards, defects, and the need for adjustment or repair; and installing maintaining and repairing electrical transmission lines; joining electrical cables.

**7411 BUILDING AND RELATED ELECTRICIANS**

Building and related electricians install, maintain and repair electrical wiring systems and related equipment and fixtures.

Their tasks include:

- a) installing, maintaining and repairing electrical wiring systems and related equipment in various buildings such as schools, hospitals, commercial establishments, residential buildings and other structures;
- b) examining blueprints, wiring diagrams and specifications to determine sequences and methods of operation;
- c) planning layout and installation of electrical wiring, equipment and fixtures, based on job specifications and relevant standards;
- d) inspecting electrical systems, equipment, and components to identify hazards, defects, and the need for adjustment or repair;
- e) selecting, cutting and connecting wire and cable to terminals and connectors;
- f) measuring and laying out installation reference points;
- g) positioning and installing electrical switchboards; and
- h) testing continuity of circuit.

**Examples:**

Building electrician	General electrician
Electrical inspector	Industrial electrician
Electrical repairman	Maintenance electrician
Electrician, building wiring	Stage and studio electrician

**7412 ELECTRICAL MECHANICS AND FITTERS**

Electrical mechanics and fitters fit, adjust, install and repair electrical machinery and other electrical apparatus and equipment in buildings, factories, workshops, or other places.

Their tasks include:

- a) fitting, adjusting and repairing various kinds of electrical machinery and motors, generators, switchgear and control apparatus, instruments, or electrical parts of elevators and related equipment;
- b) fitting, adjusting and repairing electrical parts in domestic appliances, industrial machines and other appliances;
- c) inspecting and testing manufactured electrical products;
- d) installing, testing, connecting, commissioning, maintaining and modifying electrical equipment, wiring and control systems;
- e) designing, installing, maintaining, servicing and repairing electric and hydraulic passenger and freight lifts, escalators, moving walkways and other lift equipment;
- f) connecting electrical systems to power supply; and
- g) replacing and repairing defective parts.

**Examples:**

Aircraft electrician	Electrical products inspector
Armature builder	Electrical products tester
Automotive equipment inspector	Electrical switchgear & control apparatus fitter
Electric machine rewinder	Electrical technician
Electric meter repairman	Electrical transformer fitter
Electric motor and generator fitter	Instrumentation repairman
Electric motor repairman	Lift mechanic
Electrical elevator fitter	

Electrical fitter (general)	Plant electrician
Electrical generator fitter	Ship electrician
Electrical instrument fitter	Transformer repairman
Electrical mechanic	Transport electrician
Electrical motor fitter	Vehicle electrician

#### **7413 ELECTRICAL LINE INSTALLERS AND REPAIRERS**

Electrical line installers and repairers install, repair and join electrical transmission and supply cables and related equipment.

Their tasks include:

- a) installing and repairing overhead and underground electrical power and electrical traction lines;
- b) making joints in overhead and underground cables;
- c) adhering to safety practices and procedures, such as checking equipment regularly and erecting barriers around work areas;
- d) opening switches or attaching grounding devices to remove electrical hazards from disturbed or fallen lines or to facilitate repairs;
- e) climbing poles or using truck-mounted buckets to access equipment; and
- f) identifying defective sectionalizing devices, circuit breakers, fuses, voltage regulators, transformers, switches, relays, or wiring, using wiring diagrams and electrical-testing instruments.

##### **Examples:**

Cable and line installer	Electrical line installer
Cable pulling	Lineman
Cable television lineman	Lineman/electric power
Electric cable jointer	Lineman/telephone/telegraph/cable TV
Electric power lineman	Ride maintenance mechanic
Electric traction lineman	Transmission technician

#### **742 ELECTRONICS AND TELECOMMUNICATIONS INSTALLERS AND REPAIRERS**

Electronics and telecommunications installers and repairers fit, maintain, adjust and repair electronic equipment such as commercial and office machines and electronic instruments and control systems and install, repair and maintain telecommunications equipment, data transmission equipment, cables, antennae and repair, fit and maintain computers.

Tasks performed usually include: examining and testing machines, equipment, instruments and control systems to diagnose faults; adjusting, repairing, and replacing worn and defective parts and wiring, and maintaining machines, equipment and instruments; installing electronic instruments and control systems; fitting and adjusting electronic equipment; maintaining, troubleshooting, fitting, adjusting, testing and repairing computers, data transmission equipment and computer peripherals; installing, maintaining, repairing, and diagnosing malfunctions of microwave, telemetry, multiplexing, satellite and other radio and electromagnetic wave communications systems; providing technical advice and information, and monitoring the performance of complex telecommunications networks and equipment; installing, joining and repairing cabling for computer, radio, telephone and television transmission; and installing, maintaining and repairing antennae used in communications.

#### **7421 ELECTRONICS MECHANICS AND SERVICERS**

Electronics mechanics and servicers fit, maintain, adjust and repair electronic equipment such as commercial and office machines and electronic instruments and control systems.

Their tasks include:

- a) examining and testing machines, instruments, components, other equipment, instruments and control systems to identify faults;
- b) adjusting, repairing, and replacing worn and defective parts and wiring, and maintaining machines, equipment and instruments;
- c) reassembling, test operating and adjusting equipment;
- d) installing electronic instruments and control systems;
- e) coordinating work with that of engineers, technicians, and other maintenance personnel;
- f) interpreting test data to diagnose malfunctions and systemic performance problems;
- g) installing, adjusting, repairing or replacing electrical and electronic components, assemblies, and systems using hand tools, power tools, or soldering irons;
- h) connecting components to assemblies such as radio systems, instruments, magnetos, inverters, and in-flight refueling systems; and
- i) keeping records of maintenance and repair work.

**Examples:**

Adding machine technician	Office equipment technician
Aircraft maintenance engineer (avionics)	Office machines mechanic
Audio electronics service/repairman	Photocopy machine technician
Automated teller machines mechanic	Radio mechanic
Avionics technician	Reprographic equipment technician
Electric typewriter technician	Standard manual typewriter technician
Electronic equipment servicer	Television mechanic
Electronics business machines technicians	Video electronics (VHS, VCD, DVD) service/repairman
Erector, radioaerial	

**7422 INFORMATION AND COMMUNICATIONS TECHNOLOGY INSTALLERS AND SERVICERS**

Information and communications technology (ICT) installers and servicers install, repair and maintain telecommunications equipment, data transmission equipment, cables, antennae and conduits and repair, fit and maintain computers.

Their tasks include:

- a) maintaining, troubleshooting, testing and repairing computers, data transmission equipment and computer peripherals;
- b) fitting and adjusting computer hardware;
- c) installing, maintaining, repairing, and diagnosing malfunctions of microwave, telemetry, multiplexing, satellite and other radio and electromagnetic wave communications systems;
- d) providing technical advice and information, and monitoring the performance of complex telecommunications networks and equipment;
- e) installing and repairing cabling for computer, radio, telephone and television transmission;
- f) joining telecommunications and data cables and sealing sheathes; and
- g) installing, maintaining and repairing antennae used in communications.

**Examples:**

Central office equipment installer	PABX technician
Communication rigger	Radar equipment fitter
Communications technician	Radio equipment installer
Computer equipment fitter	Radio fitter
Computer service/repairman	Switchman (Central office equipment)

Data and telecommunications cabler	technician)
Electronic computer equipment fitter	Telecommunication equipment installer
Electronic products inspector	Telecommunication equipment repairer
Electronic products tester	Telecommunications technician
Electronic signaling system fitter	Telegraph installer
Electronics fitter (general)	Telegraph repairman
Electronics/computer equipment fitter	Telephone installer and repairman
Electronics/telecommunications equipment fitter	Telephone mechanic
Hardware technician	Television fitter
Medical equipment fitter	Telecommunications line worker

## **75 FOOD PROCESSING, WOOD WORKING, GARMENT AND OTHER CRAFT AND RELATED TRADES WORKERS**

Food processing, wood working, garment and other craft and related trades workers treat and process agricultural and fisheries raw materials into food and other products, and produce and repair goods made of wood, textiles, fur, leather, or other materials.

The work is carried out by hand and by hand-powered and other tools which are used to reduce the amount of physical effort and time required for specific tasks, as well as to improve the quality of the products. The tasks call for an understanding of the work organization, the materials and tools used, and the nature and purpose of the final product.

Tasks performed by workers in this sub-major group usually include: treating and processing meat, fish, grain, fruit, vegetables and related materials into food stuffs, and tobacco into tobacco products; tasting and grading food products and beverages; treating and processing natural fibers, skins and hides; making and repairing furniture and other goods made of wood; preparing hides, skins and pelts for further use; and making and repairing textiles, garments, hats, shoes and related products. Supervision of other workers may be included.

### **751 FOOD PROCESSING AND RELATED TRADES WORKERS**

Food processing and related trades workers slaughter animals, treat and prepare them and related food items for human and animal consumptions, make various kinds of bread, cakes and other flour products, process and preserve fruit, vegetables and related foods, taste and grade various food products and beverages, or prepare tobacco and make tobacco products.

Tasks performed usually include: slaughtering animals; treating meat and fish and preparing them and related food items; making various kinds of bread, cakes and other flour products; processing and preserving fruit, vegetables and related foods; tasting and grading various food products and beverages; and preparing tobacco and making tobacco products. Supervision of workers may be included.

#### **7511 BUTCHERS, FISHMONGERS AND RELATED FOOD PREPARERS**

Butchers, fishmongers and related food preparers slaughter animals, clean, cut and dress meat and fish, remove bones and prepare related food items or preserve meat, fish and other foods and food products by drying, salting or smoking.

Their tasks include:

- a) slaughtering animals;
- b) flaying and trimming carcasses;
- c) boning, cutting and dressing meat and fish for sale or further processing;
- d) preparing ingredients and making sausages and similar products using chopping,

- mixing and shaping machines;
- e) curing meat, fish and other foods;
- f) operating smokehouses or ovens to smoke meat, fish and other foodstuffs;
- g) cooking or in other ways preparing meat, fish and related food items for sale ;
- h) selling meat or fish to customers, including wrapping, weighing and labelling products, and receiving payment.

**Examples:**

Butcher (Abattoir)	Fishmonger
Butcher (general)	Food preparer
Butcher (Hotel and Restaurant)	Meat cutter
Fish filleter	Slaughterer
Fish processing worker	

**7512 BAKERS, PASTRY-COOKS AND CONFECTIONERY MAKERS**

Bakers, pastry-cooks and confectionery makers make various kinds of bread, cakes, and other flour products, as well as handmade chocolate and sugar confectionery.

Their tasks include:

- a) making bread, cakes, biscuits, pastries, pies and other flour products;
- b) making handmade confectionery from mixtures of sugar, chocolate and other ingredients using hand tools and some machines;
- c) combining measured ingredients in bowls of mixing, blending, or cooking machinery;
- d) checking the quality of raw materials to ensure that standards and specifications are met;
- e) applying glazes, icings, or other toppings to baked goods, using spatulas or brushes;
- f) checking the cleanliness of equipment and operation of premises before production runs to ensure compliance with occupational health and safety regulations;
- g) monitoring oven temperatures and product appearance to determine baking times; and
- h) coordinating the forming, loading, baking, unloading, de-panning and cooling of batches of bread, rolls, pastry and confectionary products.

**Examples:**

Baker (general)	Macaroni maker
Bread baker	Native cakes/ <i>kakanin</i> makers
Cake decorator	Noodle makers
Chocolate maker	Oven/fryer man
Confectioner	Pastry maker
Confectionery maker	Pastry-cook

**7513 DAIRY PRODUCTS MAKERS**

Dairy products makers process butter and various types of cheese, cream or other dairy products.

Their tasks include:

- a) boiling or pasteurizing milk to achieve specified butter fat content;
- b) separating cream from milk and churning cream into butter;
- c) dumping measured amounts of starter and other ingredients into milk;
- d) curdling milk, heating curd until it reaches desired firmness, draining curd and placing cheese into molds to press it into shape;

- e) salting cheese and piercing or smearing cheese with cultured wash to develop mold growth;
- f) placing and turning cheese blocks on shelves to cure cheese;
- g) monitoring product quality before packaging by inspecting, taking samples and adjusting treatment conditions when necessary; and
- h) recording amounts of ingredients used, test results, and time cycles.

**Examples:**

Butter maker	Ice cream maker
Cheese maker	Milk collector
Dairy product maker	Milker

**7514 FRUIT, VEGETABLE AND RELATED PRESERVERS**

Fruit, vegetable and related preservers process or preserve fruit, nuts and related foods in various ways including cooking, drying, salting, or juice or oil extraction.

Their tasks include:

- a) extracting juices from various fruits;
- b) extracting oils from oil-bearing seeds, nuts or fruits;
- c) cooking, salting or drying fruit, vegetables and related foods;
- d) mixing and adding ingredients such as pectin, sugar, spices and vinegar to assist preservation and enhance texture, appearance and flavor; and
- e) transferring preserved foods to sterile jars, bottles or other containers.

**Examples:**

Chutney maker	Meat smoker
Fish smoker	Oil expeller
Food pickler	Salted egg maker
Food preserver	Sausage maker
Fruit preserver	Syrup man
Jam maker	Vegetable preserver

**7515 FOOD AND BEVERAGE TASTERS AND GRADERS**

Food and beverage tasters and graders inspect, taste and grade various types of agricultural products, food and beverages.

Their tasks include:

- a) inspecting, testing, tasting and smelling agricultural products, food and beverages at various stages of processing;
- b) determining quality, acceptability to consumer tastes and approximate value of products and grading them into appropriate classes;
- c) discarding inferior products;
- d) recording the grade and/or identification numbers on tags, receiving, or sales sheets; and
- e) weighing and measuring products.

**Examples:**

Brewmaster	Tea taster
Coffee taster	Wine taster
Food grader	Fruit grader
Food taster	Vegetable grader
Liquor taster	

**7516 TOBACCO PREPARERS AND TOBACCO PRODUCTS MAKERS**

Tobacco preparers and tobacco products makers prepare tobacco leaves and make various tobacco products.

Their tasks include:

- a) grading cured tobacco leaves by type, quality and locality where grown;
- b) mixing tobacco leaves according to formula to obtain a blend of distinct flavor;
- c) tending vacuum container which moistens tobacco for further processing;
- d) removing midribs and stalks from tobacco leaves and shredding tobacco; and
- e) making cigars, cigarettes, snuff and other tobacco products by hand or with simple machines.

**Examples:**

Cigar/cigarettes maker	Tobacco preparer
Snuff maker	Tobacco stripper (hand)
Tobacco blender	Tobacco stripper (machine)
Tobacco conditioner operator	Tobacco/cigar grader
Tobacco cutting machine operator	

**752 WOOD TREATERS, CABINET-MAKERS AND RELATED TRADES WORKERS**

Wood treaters, cabinet-makers and related trades workers preserve and treat wood; produce waferboards, particleboards, hardboards, insulation boards, plywood, veneers and similar wood products; and make, decorate and repair wooden furniture, vehicles and other wooden products. They use specialized hand tools and set-up, operate and tend wood processing and woodworking equipment, machines and machine tools.

Tasks performed usually include: operating and tending treating and other equipment to dry lumber and other wood products, and to treat chemically and impregnate wood products with preservatives; operating woodworking machines to cut, shape and form parts and components; studying plans, verifying dimensions of articles to be made, fitting parts together to form complete units and checking the quality and fit of pieces to ensure adherence to specifications; setting and adjusting various kinds of machines for operation by others; setting-up, programming, operating and monitoring several types of woodworking machines to fabricate, repair or refinish wooden parts for furniture, fixtures and other wood products; and reading and interpreting specifications or following verbal instructions.

**7521 WOOD TREATERS**

Wood treaters operate and tend wood treatment processing equipment and machines to remove bark from logs, produce wood chips, season, preserve and treat wood, and produce waferboards, particleboards, hardboards, insulation boards, plywood, veneers and similar wood products.

Their tasks include:

- a) operating and tending kilns, treating tanks and other equipment to dry lumber, prepare and season wood and other wood products, and to treat chemically and impregnate wood products with preservatives;
- b) monitoring equipment operation, gauges, and panel lights in order to detect deviations from standards and to ensure that processes are operating according to specifications;
- c) assisting in maintaining processing equipment and machines as required;
- d) cleaning, lubricating and adjusting equipment;
- e) transporting materials and products to and from work areas, manually or using carts, handtrucks, or hoists; and



- f) completing and maintaining production reports.

**Examples:**

Dry kiln operator	Wood seasoning worker
Lumber kiln operator	Wood treater
Veneer dryer tender	Wood treating worker
Wood seasoner	Wood painting machine operator

**7522 CABINET-MAKERS AND RELATED WORKERS**

Cabinet-makers and related workers make, decorate and repair wooden furniture, carts and other vehicles, wheels, parts, fittings, patterns, models and other wooden products using woodworking machines, machine tools and specialized hand tools.

Their tasks include:

- operating woodworking machines, such as power saws, jointers, mortisers and shapers, and using hand tools to cut, shape and form parts and components;
- studying plans, verifying dimensions of articles to be made, or preparing specifications and checking the quality and fit of pieces in order to ensure adherence to specifications;
- trimming joints and fitting parts and subassemblies together to form complete units using glue and clamps, and reinforcing joints using nails, screws or other fasteners;
- making, restyling and repairing various wooden articles, such as cabinets, furniture, vehicles, scale models, sports equipment and other parts or products;
- decorating furniture and fixtures by inlaying wood, applying veneer and carving designs; and
- finishing surfaces of wooden articles or furniture.

**Examples:**

Cabinet/furniture-maker	Smoking-pipe maker
Cartwright	Veneer applier
Coach body builder	Wheel-wright
Cooper	Wood patternmaker
Marquetry inlayer	Wooden furniture finisher
Mill-wright	Wooden model maker

**7523 WOODWORKING MACHINE TOOL SETTERS AND OPERATORS**

Woodworking machine tool setters and operators set-up or operate and monitor automatic or semi-automatic woodworking machines, such as precision sawing, shaping, planning, boring, turning and woodcarving machines to fabricate or repair wooden parts for furniture, fixtures and other wooden products.

Their tasks include:

- setting-up, programming, operating and monitoring several types of woodworking machines for sawing, shaping, boring, drilling, planing, pressing, turning, sanding or carving to fabricate or repair wooden parts for furniture, fixtures and other wooden products;
- operating preset special-purpose woodworking machines to fabricate wooden products such as coat hangers, mop handles, clothes pins and other products;
- selecting knives, saws, blades, cutter heads, cams, bits, or belts according to workpiece, machine functions and product specifications;
- installing and adjusting blades, cutterheads, boring-bits and sanding-belts, and using hand tools and rules;
- setting and adjusting various kinds of woodworking machines for operation by

- others; and
- f) reading and interpreting specifications or following verbal instructions.

**Examples:**

Carving machine operator (wood)	Wood-planing machine setter-operator
Furniture production machine operator	Wood-shaping machine setter-operator
Precision woodworking sawyer	Wood-spindle-carving machine setter-operator
Wood lathe setter-operator	operator
Wood products machine operator	Woodworking lathe operator
Wood routing machine setter-operator	Woodworking machine setter-operator
Wood turner	

### 753 GARMENT AND RELATED TRADES WORKERS

Garment and related trades workers fit, alter and repair tailored clothing; design, and make textile and fur garments, leather or fur products; repair, renovate and decorate garments, gloves and other products of textile; create patterns for garments; install, repair and replace upholstery of furniture, fixtures, orthopaedic appliances and furnishings of automobiles; trim, scrape, tan, buff and dye animal hides, pelts or skins; modify and repair footwear and leather articles.

Tasks performed usually include: fitting, altering, repairing tailored clothing; designing and making made-to-measure clothing, from textile fabrics, light leather and other material, or make hats or wigs; make garment style changes; creating precision master patterns for production of garments, other textile, and leather or fur products; sewing together, joining, darning, repairing, renovating and decorating garments, gloves and other products of textile, fur, light leather and other materials and fabricating and assembling sails, awnings and tarpaulins; installing, repairing and replacing upholstery of furniture, fixtures, orthopaedic appliances; seats, panels, and other furnishings of automobiles, railway coaches, aircraft, ships and similar items; trimming, scraping, cleaning, tanning, buffing and dyeing animal hides, pelts or skins to produce leather stock and finished furs for making garments and other products; and making, modifying and repairing standard, custom or orthopaedic footwear and natural or synthetic leather articles.

#### 7531 TAILORS, DRESSMAKERS, FURRIERS AND HATTERS

Tailors, dressmakers, furriers and hatters fabricate, fit, alter and repair tailored or hand-made clothing; They produce made-to-measure clothing such as suits, overcoats, and dresses from textile fabrics, light leather, fur and other material, or make hats or wigs according to customer's and clothing manufacturer's specifications.

Their tasks include:

- a) making overcoats, suits, skirts, shirts, blouses, lingerie, corsetry, hats, wigs and similar garments often to clients' individual requirements;
- b) selecting textile fabrics, leather or fur pelts matching the desired size, color, texture, and quality of the garment; cutting to shape them to garment pattern and arranging them on pattern according to the design of the garment;
- c) making garment style changes, such as tapering trouser legs, narrowing lapels, and adding or removing padding;
- d) selecting and modifying commercial patterns to customers' and clothing manufacturers' specifications and fit;
- e) fitting, altering and repairing tailored clothing, dresses, coats and other made-to-measure garments according to customers' requests;
- f) making and caring for costumes used in theatrical, television and motion picture productions;
- g) folding, twisting, and draping material, such as satin or silk, or sewing ribbon or cloth in the form of artificial flowers or bows around crown and brim to shape and decorate hats;

- h) sewing, and fastening together materials and hair strands to make wigs;
- i) blending shades of hair to give natural appearance to wigs and arranging woven hair in specified position and sewing hair together to form hairpiece;
- j) making, altering, restyling and repairing fur garments and other fur articles; and
- k) reclaiming furs or skins from old coats, gluing fabric to interior of fur coats and trimming fur garments.

**Examples:**

Dressmaker	Stage wardrobe mistress
Furrier	Studio wardrobe mistress
Hatter	Tailor
Milliner	Trimmer
Patternmaker	Fur grader
Seamstress	

**7532 GARMENT AND RELATED PATTERNAKERS AND CUTTERS**

Textile, leather and related patternmakers and cutters create precision master patterns for production of garments, other textile, and leather or fur products. They mark, cut, shape and trim textile, light leather and other materials according to blueprints or specifications in the manufacture of garments, hats and caps, gloves and miscellaneous products.

Their tasks include:

- a) creating a master pattern for each size within a range of garment sizes, using charts, drafting instruments, computers, and/or grading devices;
- b) creating the “blueprint” or pattern pieces for a particular apparel design with the aid of a computer;
- c) calculating dimensions of patterns according to sizes, considering stretching of material;
- d) drawing details on outlined parts to indicate where parts are to be joined, as well as the positions of pleats, pockets, buttonholes on garments, decorative stitching on shoe parts or eyelets on canvas products using computers or drafting instruments;
- e) positioning templates or measuring materials to locate specified points of cuts or to obtain maximum yields and mark fabric accordingly;
- f) laying out master pattern on fabric and cutting sample pattern;
- g) testing patterns by making and fitting sample garments;
- h) placing patterns on top of layers of fabric and cutting fabric following patterns, using electric or manual knives, cutters or computer numerically controlled cutting devices;
- i) cutting fabric or fur pelts to make parts for garments and other fur articles;
- j) trimming excess material or cutting threads off finished products, such as cutting loose ends of a finished product;
- k) positioning leather on cutting bed of machine, maximizing usage according to skin grain, skin flaws and skin stretch; and
- l) performing pattern-making, marking and cutting tasks in the manufacture of other products such as soft furnishings and canvas goods.

**Examples:**

Fur pattern-maker	Hat and cap-pattern maker
Garment cutter	Leather cutter
Garment marker	Leather patternmaker
Garment patternmaker	Textile cutter
Glove cutter	Textile patternmaker

**7533 SEWING, EMBROIDERY AND RELATED WORKERS**

Sewing, embroidery and related workers sew together, repair, renovate and decorate garments, gloves and other products of textile, fur, light leather and other materials and fabricate tents sails, awnings and tarpaulins. They work mainly by hand using a needle and thread but may perform some tasks using a sewing machine.

Their tasks include:

- a) repairing defective or damaged portion of cloth or garment by hand, using matching thread and needle;
- b) removing stitches from garments to be altered, using rippers or razor blades;
- c) selecting thread according to specifications or color of parts or dyeing thread to match color and shade of cloth to be darned;
- d) patching holes, sewing tears and ripped seams, or darning defects in items, using needles and thread;
- e) pulling knots to the wrong sides of garments, using hooks;
- f) trimming ends with scissors to make mended portion look uniform with pattern of cloth;
- g) sewing ornamental designs by hand over stamped, printed or stencilled patterns on fabric using needle and colored thread;
- h) embroidering ornamental designs on cloth by hand or machine using needle and colored threads;
- i) softening leather or shoe material with water to prepare it for sewing;
- j) sewing or gluing decorative trimmings to articles, such as hats, caps, or millinery;
- k) hand sewing umbrella covers to frames, tacking cover to ribs along seams and sewing corners to tip of rib and sewing ties to outside of cover to hold umbrella when folded; and
- l) fabricating and assembling thick cloth, canvas and like materials into sails, awning, tarpaulins and tents.

**Examples:**

Alterer	Hand sewer, leather
Doll toy maker	Hi-speed sewer
Embroiderer (Multi-head machine)	Machine sewer
Fur sewer (hand)	Maker, umbrella
Garments sewer	Reviser (textile and garments)
Hand embroiderer	Stitcher
Hand sewer	Stuffed toymaker

**7534 UPHOLSTERERS AND RELATED WORKERS**

Upholsterers and related workers install, repair and replace upholstery of furniture, fixtures, orthopaedic appliances; seats, panels, convertible and vinyl tops and other furnishings of automobiles, railway coaches, aircraft, ships and similar items with fabric, leather, rexine or other upholstery material. They also make and repair cushions, quilts and mattresses.

Their tasks include:

- a) discussing upholstery fabric, color, and style with customers and providing cost estimate for upholstering furniture or other items;
- b) making upholstery patterns from sketches, customer descriptions or blueprints;
- c) laying out, measuring and cutting upholstery materials following patterns, templates, sketches, or design specifications;
- d) installing, arranging and securing springs, padding and covering material to furniture frames;

- e) sewing upholstery materials by hand to seam cushions and joining sections of covering materials;
- f) sewing rips or tears in material, or creating tufting, using needle and thread;
- g) tacking, gluing or sewing ornamental trims, buckles, braids, buttons and other accessories to covers or frames on upholstered items;
- h) laying out, cutting, fabricating and installing upholstery in aircrafts, motor vehicles, railway cars, boats and ships;
- i) repairing raw hide covering of artificial limbs;
- j) renovating antique furniture using a variety of tools including ripping chisels, magnetic hammers and long needles;
- k) collaborating with interior designers to decorate rooms and coordinate furnishing fabrics; and
- l) making quilts, cushions and mattresses.

**Examples:**

Mattress maker

Upholsterer, furniture and automotive

Orthopaedic upholsterer

Upholsterer, vehicle

Upholsterer

**7535 PELT DRESSERS, TANNERS AND FELLMONGERS**

Pelt dressers, tanners and fellmongers trim, scrape, clean, tan, buff and dye animal hides, pelts or skins to produce leather stock and finished furs for making garments and other products.

Their tasks include:

- a) sorting and grading pelts, hides and skins according to color, shading, size and density;
- b) scraping particles of flesh, fat, or protective tissue from skins or pelts to clean and soften them;
- c) removing hair from skin or hides soaked in lime water;
- d) preparing hides by curing them with salt;
- e) removing long, coarse hair from pelts and trimming underlying hair to even length;
- f) tanning and dressing pelts to improve luster and beauty or restore natural appearance of pelts;
- g) preparing bark and myrobalan liquor for treating hides or skins;
- h) treating hides and skins in tanning solution to convert them into leather;
- i) tinting or dyeing furs to enhance natural shades of fur;
- j) removing wrinkles and setting grains on wet hide or skin;
- k) dressing and applying dyes and stains to leather;
- l) stretching and smoothing dressed pelts; and
- m) seasoning leather by applying chemical solution or oil evenly on surface by hand brush and allowing it to dry in open air.

**Examples:**

Fellmonger

Leather currier

Hide and skin grader

Leather dyer

Hide dehairer

Leather stainer

Hide flesher

Pelt grader

Hide splitter

Tanner

**7536 SHOEMAKERS AND RELATED WORKERS**

Shoemakers and related workers make, modify and repair standard, custom or orthopaedic footwear and natural or synthetic leather articles, such as luggage, handbags and belts, (except for leather garments, hats and gloves), or participate in the manufacture of shoes and related goods. They decorate, reinforce or finish shoes, luggage, handbags and belts.

Their tasks include:

- a) making, modifying and repairing standard footwear to meet individual requirements;
- b) making, modifying and repairing orthopaedic or therapeutic footwear according to doctors' prescriptions, or modifying existing footwear for people with foot problems and special needs;
- c) repairing belts, luggage, purses and similar products;
- d) taking plaster casts of deformed legs or foot to prepare drawings;
- e) preparing inserts, heel pads, and lifts from casts of customers' feet;
- f) studying drawings and other specifications to make footwear according to customer's needs;
- g) studying work orders and/or shoe part tags to obtain information about workloads, specifications, and the types of materials to be used;
- h) checking the texture, color, and strength of leather to ensure that it is adequate for a particular purpose;
- i) cutting out, shaping and padding parts for making leather articles;
- j) sewing rips or patching holes to repair articles, such as purses, belts, shoes, and luggage;
- k) removing and examining shoes, shoe parts, and designs to verify conformance to specifications such as proper embedding of stitches in channels;
- l) attaching accessories or ornamentation to decorate or protect products; and
- m) making and repairing articles such as saddles and harnesses for animals, luggage, handbags, brief-cases, leather bags, belts and other accessories.

**Examples:**

Clicker cutter (machine)	Saddler
Cobbler	Shoe cutter (hand)
Laster	Shoe finisher
Leather goods assembler	Shoe sewer (machine)
Leather goods maker (general)	Shoemaker
Leather sewer (hand/machine)	Shoes and bag repairer
Orthopedic footwear maker	Sole fitter
Pattern-maker, footwear	Uppers preparer
Saddle and harness maker	

**754 OTHER CRAFT AND RELATED WORKERS**

Other craft and related workers work under the surface of water, using underwater breathing apparatus; position, assemble, and detonate explosives; inspect and test, raw materials, manufactured components and products; remove unwanted organisms to prevent damage to crops and buildings and other structures. This group includes other trade and craft occupations not classified elsewhere in major group 7, Craft and related trades workers.

Tasks performed usually include: ensuring safety precautions; performing various underwater tasks, loading explosives into blast holes; mixing chemicals according to instructions; and operating and monitoring equipment for spraying pests and weeds.

**7541 UNDERWATER DIVERS**

Underwater divers work under the surface of water, using underwater breathing apparatus to inspect, install, repair, and remove equipment and structures, conduct tests or experiments, rig explosives, photograph structures or marine life or find and recover missing items and persons.

Their tasks include:

- a) taking safety precautions, such as monitoring dive lengths and depths, and registering with authorities before diving expeditions begin;
- b) checking and maintaining diving equipment such as helmets, masks, air tanks, diving suits, harnesses and gauges;
- c) descending into water with the aid of diver helpers, using scuba gear or diving suits;
- d) working under water to lay and repair bridges, piers and harbor-wall foundations;
- e) inspecting for suspected damage and making minor repairs to ships' hulls and underwater installations;
- f) reporting on condition of wrecked ships;
- g) removing underwater obstructions;
- h) drilling holes for underwater blasting;
- i) performing various underwater tasks connected with salvage work or recovering dead bodies;
- j) communicating with workers on the surface while underwater, using signal lines or telephones;
- k) obtaining information about diving tasks and environmental conditions.

**Examples:**

Salvage frogman

Underwater worker

**7542 SHOTFIRERS AND BLASTERS**

Shotfirers and blasters, position, assemble, and detonate explosives at mining, quarrying and demolition sites.

Their tasks include:

- a) ensuring workplace safety and explosives handling, storage and transport procedures and regulations are followed;
- b) planning and giving instructions for the lay out, depth and diameter of blast holes;
- c) checking depth and cleanliness of blast holes;
- d) determining quantity and type of explosives to be used;
- e) loading explosives into blast holes;
- f) assembling, or directing other workers to assemble, primer charges using detonators and explosive cartridges, and attaching electrical wires, fuses and detonating cords to primers;
- g) connecting wires, fuses and detonator cords into series, testing electrical circuits and repairing malfunctions, and connecting series to blasting machines;
- h) covering charges, filling blast holes with rock dust, sand and other materials, and tamping material to compact charges;
- i) ensuring all explosives are detonated, and reporting and attending to misfires;
- j) declaring blast areas safe before and after detonation of explosives; and
- k) compiling and maintaining records about usage of explosives in compliance with laws and regulations.

**Examples:**

Blaster

Powder man

Mine shot firer

Quarry shot firer

Powder monkey

**7543 PRODUCT GRADERS AND TESTERS (EXCEPT FOODS AND BEVERAGES)**

Product graders and testers (except foods and beverages) inspect, test, sort, sample, and weigh raw materials, manufactured components and non-comestible goods produced or sold, to ensure compliance with quality standards and to identify defects, wear, and deviations from specifications, and to grade and classify them according to their quality.

Their tasks include:

- a) inspecting and testing products, parts and materials for conformity with specifications and standards;
- b) grading and classifying natural textile fibers for spinning and winding;
- c) discarding or rejecting products, materials, and equipment not meeting specifications;
- d) analyzing and interpreting blueprints, data, manuals, and other materials to determine specifications, inspection and testing procedures;
- e) notifying supervisors and other personnel of production problems, and assisting in identifying and correcting these problems;
- f) recording inspection or test data, such as weights, temperatures, grades, or moisture content, and quantities inspected or graded;
- g) marking items with details such as grade and acceptance or rejection status;
- h) measuring dimensions of products using instruments such as rulers, calipers, gauges, or micrometers; and
- i) analyzing test data and making computations as necessary to determine test results.

**Examples:**

Product grader

Quality inspector

Wool classer

**7544 FUMIGATORS AND OTHER PEST AND WEED CONTROLLERS**

Fumigators and other pest and weed controllers use chemicals to remove harmful insects, small animals, wild plants and other unwanted organisms to prevent damage to crops and to buildings and other structures and their surroundings and to prevent health risks.

Their tasks include:

- a) operating and monitoring equipment for spraying pests and weeds;
- b) mixing chemicals according to instructions;
- c) covering areas to specified depths with pesticides, applying knowledge of weather conditions, droplet sizes, elevation-to-distance ratios, and obstructions;
- d) spraying or releasing chemical solutions or toxic gases and setting traps to kill pests and vermin, such as mice, termites, and roaches;
- e) lifting, pushing, and swinging nozzles, hoses, and tubes in order to direct spray over designated areas;
- f) filling sprayer tanks with water and chemicals; and
- g) cleaning and servicing machinery to ensure operating efficiency.



**Examples:**

Fumigator  
Pest controller  
Weed controller

**7549 CRAFT AND RELATED WORKERS NOT ELSEWHERE CLASSIFIED**

This group covers craft and trade occupations not classified elsewhere in major group 7, Craft and related trades workers. For instance, the group includes those who mold, slice, grind and polish optical lenses.

Their tasks would include:

- a) heating, molding and pressing optical glass to make lens blanks; and
- b) grinding and polishing lens blanks.

**Examples:**

Crafts and trade helper  
Optical lens finisher  
Optical lens molder

## MAJOR GROUP 8

### PLANT AND MACHINE OPERATORS AND ASSEMBLERS

Plant and machine operators and assemblers operate and monitor industrial and agricultural machinery and equipment on the spot or by remote control, drive and operate trains, motor vehicles and mobile machinery and equipment, or assemble products from component parts according to strict specifications and procedures.

The work mainly calls for experience with and an understanding of industrial and agricultural machinery and equipment as well as an ability to cope with machine-paced operations and to adapt to technological innovations. Most occupations in this major group require skills at the second ISCO skill level. Tasks performed by plant and machine operators and assemblers usually include: operating and monitoring mining or other industrial machinery and equipment for processing metal, minerals, glass, ceramics, wood, paper, or chemicals; operating and monitoring machinery and equipment used to produce articles made of metal, minerals, chemicals, rubber, plastics, wood, paper, textiles, fur, or leather, and which process foodstuffs and related products; driving and operating trains and motor vehicles; driving, operating and monitoring mobile industrial and agricultural machinery and equipment; assembling products from component parts according to strict specifications and procedures. Supervision of other workers may be included.

#### 81 STATIONARY PLANT AND MACHINE OPERATORS

Stationary plant and machine operators operate and monitor, on the spot or by remote control, industrial plant and machinery and equipment that are stationary, or for which mobility is not an integral part of operation. The work mainly calls for experience with and an understanding of the industrial plant, machinery or equipment being operated and monitored. Ability to cope with machine-paced operations and to adapt to innovations in machinery and equipment is often required.

Tasks performed by workers in this sub-major group usually include: setting up, operating and monitoring a variety stationary plant and machinery; detecting malfunctions and taking corrective action; examining outputs for defects and conformity to specifications and adjusting machine settings accordingly; performing maintenance, repairs and cleaning; recording data and maintaining production records. Supervision of other workers may be included.

##### 811 MINING AND MINERAL PROCESSING PLANT OPERATORS

Mining and mineral processing plant operators operate and monitor plant and machinery which extract rock and minerals from the earth, process minerals and stone, drill wells and bores, and manufacture and finish cement and stone products.

Tasks performed usually include: setting up, operating and monitoring a variety of mining and mineral processing plant and machinery such as drilling rigs and auxiliary machines and equipment, continuous mining machinery, and cutting, crushing, grinding, pumping and mixing plant and machinery; operating washing, separating, extracting and combining equipment to remove waste and recover minerals; operating plant and machinery to make cement, concrete, artificial stone, and precast concrete and stone products; monitoring the performance of a variety of plant and machinery, detecting malfunctions and taking corrective action; performing plant and machinery maintenance, repairs and cleaning; and maintaining production records.

##### 8111 MINERS AND QUARRIERS

Miners and quarriers operate plant, machinery and hand tools to extract rock, minerals and non-metallic deposits from underground and surface mines and quarries.

Their tasks include:

- a) positioning, operating and monitoring the performance of a variety of

- underground and surface mining equipment including continuous mining, cutting and channelling plant;
- b) setting up and operating drilling equipment in underground and surface mines and quarries;
- c) operating machinery and using tools to remove loosened rock, ore, coal and other deposits;
- d) preparing, fitting and installing supports in underground workings including rock bolts;
- e) operating machinery to open new shafts, drives, air vents and rises;
- f) operating auxiliary plant such as pumps to expel air, water and mud;
- g) performing minor maintenance and repairs and lubricating and cleaning plant, machines and tools;
- h) completing records detailing operations completed during shifts; and
- i) collecting mineral samples for laboratory analysis.

**Examples:**

Bogger operator	Drilling machine operator (mine and quarry)
Continuous miner operator	Mine
Continuous mining machine operator	Mining plant operator
Dragline operator (mining)	Prime miner operator
Dredgeman (mining)	Quarrier
Driller (mining)	Roof bolter (mining)

**8112 MINERAL AND STONE PROCESSING PLANT OPERATORS**

Mineral and stone processing plant operators operate and monitor machinery and equipment for processing rocks, minerals and stone to recover refined products for immediate use or further processing.

Their tasks include:

- a) setting up and operating stationary plant and machinery which grind, crush, cut, saw and slice rocks, minerals and stones according to the specifications for the job;
- b) positioning blocks and slabs of stone onto machines for sawing, cutting and further working;
- c) monitoring and maintaining the flow of unprocessed rocks, minerals and stones from conveyors into machines;
- d) operating washing, separating, leaching, precipitating, filtering, extracting and combining equipment to remove waste material and recover minerals;
- e) combining mineral ores with solvents to facilitate further processing;
- f) separating metal and mineral concentrates from ore and alluvial deposits by thickening, flotation, gravity separation, filtration, and or magnetic and electrostatic separation;
- g) observing meters, gauges and control panels, and adjusting valves and controls to ensure the safe and efficient operation of equipment, and detecting malfunctions, and assisting with plant and machinery maintenance and repair;
- h) examining processed materials visually or with hands to ensure compliance with established standards and job specifications, and may collect samples for testing in laboratories;
- i) recording information about processing completed during shifts, such as quantities, types and dimensions of materials produced; and
- j) sorting, stacking and moving processed minerals and stone for packaging, further processing or shipping.

**Examples:**

Carving stone machine operator	Precipitator
Coal washer	Splitting stone machine operator
Crushing/mineral ore machine operator	Stone cutting or processing machine operator
Cutting machine operator, mine	Stone processing machine operator
Flotation minerals worker	Stone processing plant operator
Grinding/chemical and related process machine operator	Stone treater
Milling/minerals machine operator	Tender jig machines operator
Minerals floating worker	

**8113 WELL DRILLERS AND BORERS AND RELATED WORKERS**

Well drillers and borers and related workers position, assemble and operate drilling machinery and related equipment to sink wells, extract ore, liquids and gases or for a variety of other purposes.

Their tasks include:

- a) dismantling, moving and assembling drilling rigs and auxiliary equipment;
- b) assembling and dismantling pipes, casings and drill heads, and replacing dysfunctional equipment;
- c) operating controls to lower and raise drill pipes and casings in and out of wells, regulate pressure in the well and control the speed of tools;
- d) preparing drilling fluid and checking the operation of pumps to ensure adequate circulation of fluid in drill pipe and well;
- e) monitoring gauges and other indicators and listening to equipment to detect malfunctions and unusual well conditions, and determining the need to change drilling or equipment;
- f) maintaining, adjusting, repairing and cleaning drilling rigs, hoisting and other machinery;
- g) maintaining records of drilling and servicing operations;
- h) operating machines and tools to extract dust, cuttings and lost and broken drilling equipment from holes and wells;
- i) closing and sealing wells no longer in use; and
- j) may supervise and train crew members.

**Examples:**

Artesian well driller	Gas/oil well rotary driller
Boring equipment/wells operator	Gas/oil well puller
Bore sinker	Jumbo operator
Cable driller (gas/oil well)	Powertong operator
Core driller	Toolpusher
Derrickman	Tourpusher
Derrick/oil and gas well operator	Well borer
Developmental driller	Well cable tools driller
Directional driller	Well driller
Dredgeman	Well testing crew
Drilling equipments/wells operator	Driller (oil or gas well)
Drilling rig operator	Drilling plant operator

**8114 CEMENT, STONE AND OTHER MINERAL PRODUCTS MACHINE OPERATORS**

Cement, stone and other mineral products machine operators operate and monitor machines for manufacturing and finishing precast concrete, bitumen, and stone products, and making cast stone for building purposes.

Their tasks include:

- a) operating extrusion, moulding, mixing, pumping, compacting, grinding and cutting machinery to manufacture and finish precast concrete and stone products;
- b) operating plant to produce cement, lime and clinker, including loading and unloading ingredients and operating continuous feed equipment such as pumps and conveyors;
- c) operating plant and machines which weigh and mix sand, gravel, cement, water and other ingredients to make concrete;
- d) operating plant and machinery which assembles and fills molds with concrete and artificial stone mixtures, removes castings from molds and finishes surfaces of precast products;
- e) cutting, grinding, drilling, sandblasting and polishing concrete products and stone blocks, slabs and products to the specifications for the job;
- f) checking production plans and specifications to determine and select materials, ingredients, procedures, components, settings and adjustments for extrusion, molding, mixing and compacting machines;
- g) monitoring plant and machines during operation by observing instruments such as temperature and pressure gauges, and adjusting controls and reporting malfunctions as necessary;
- h) collecting and examining samples of mixtures and finished products for conformity to specifications and adjusting machine settings accordingly;
- i) checking and maintaining production records, including information about quantities, dimensions and types of materials and goods produced; and
- j) arranging and assisting with plant and machinery maintenance and repair.

**Examples:**

Cast concrete product maker	Concrete-mixing-plant operator
Cast-concrete products machine operator	Mineral ore processing plant operator
Cast-stone products machine operator	Mixer operator
Cement production plant operator	Stone polishing machine operator
Concrete production machine operator	Concrete finishing machine operator
Concrete-mixer operator	Machine Operator (cast stone production)

## 812 METAL PROCESSING AND FINISHING PLANT OPERATORS

Metal processing and finishing plant operators operate and monitor single function process control machinery and equipment to control the conversion, processing and finishing of mineral ores and metals.

Tasks performed usually include: setting up, preparing and adjusting metal and ore processing and finishing machinery; coordinating and monitoring the operation of a particular aspect of metal processing production and finishing; verifying equipment for malfunctions, monitoring gauges, carrying out routine operating tests and arranging for maintenance; checking, testing and analyzing sample products; recording data and writing production logs.

### 8121 METAL PROCESSING PLANT OPERATORS

Metal processing plant operators, operate, monitor, adjust and maintain, single process machinery and equipment to process and convert mineral ores and refine, harden, roll and extrude metals.

Their tasks include:

- a) setting up, preparing and adjusting mineral ore and metal processing machinery to carry out one step in the overall mineral ore or metal processing operation;

- b) operating single-function machinery to grind, separate, filter, mix, treat, cast, roll, refine or otherwise process metals and mineral ores;
- c) observing gauges, meters, computer printouts, video monitors and products to ensure correct operation of machine and verify specified processing conditions;
- d) adjusting equipment, valves, pumps, controls and process equipment;
- e) controlling the preparation, measuring and feeding of raw materials and processing agents into plant;
- f) controlling process start-up and shut-down, troubleshooting and monitoring outside process equipment;
- g) verifying equipment for malfunctions, carrying out routine operating tests and arranging for maintenance; and
- h) analyzing sample products, performing tests, recording data and writing production logs.

**Examples:**

Aluminum cutting machine operator	Non-ferrous metal converting and refining furnaceman
Annealer	
Case-hardener	Ore furnace operator
Converting/non-ferrous metal extruder operator	Ore smelting blast furnaceman
Drawing/wire machine operator	Refining/steel furnace operator (open hearth furnace)
Hardener	Seamless pipe and tube drawer
Hardening/metal furnace operator	Smelting/metal furnace operator (blast furnace)
Heat-treating/metal furnace operator	
Ladle pourer	Steel converting Bessemer furnaceman
Machine tool operator	Steel converting oxygen furnaceman
Machine wire drawer	Steel metal furnace (open hearth furnaceman)
Metal drawer machine operator	
Metal extruder operator	Steel refining electric arc furnaceman
Metal extrusion plant operator	Steel roller
Metal heat treating operator	Temperer

**8122 METAL FINISHING, PLATING AND COATING MACHINE OPERATORS**

Metal finishing, plating and coating machine operators operate and monitor equipment which finishes, plates and coats metal articles or parts, in order to give them improved resistance to corrosion and abrasion, for decorative purposes, or to impart electrical or magnetic properties.

Their tasks include:

- a) operating and monitoring equipment which cleans metal articles in preparation for electroplating, galvanizing, enamelling or similar processes;
- b) operating and monitoring electroplating equipment;
- c) operating and monitoring hot-dip equipment used to coat iron and steel products;
- d) operating and monitoring machines which automatically coat wire with non ferrous metal;
- e) operating and monitoring equipment used to spray molten metal or other substances on metal products to provide a protective or decorative coating or to build up worn or damaged surfaces;
- f) operating and monitoring equipment used to impart a rust-resistant finish to metal articles by treating them with chemicals and heating them;
- g) checking proper thickness of plating using micrometers, callipers or other devices recording data and writing production logs; and
- h) preparing and mixing metalizing solutions according to formulas or specifications.

**Examples:**

Metal coating machine operator  
Metal finishing machine operator  
Metal plating machine operator

Polishing metal machine operator  
Metal painting machine operator

**813 CHEMICAL AND PHOTOGRAPHIC PRODUCTS PLANT AND MACHINE OPERATORS**

Chemical and photographic products plant and machine operators operate and monitor machines which process a variety of chemicals and other ingredients to produce pharmaceuticals, toiletries, explosives and photographic or other chemical products.

Tasks performed usually include: operating and monitoring machines and equipment which blend, mix, package and otherwise process chemicals and chemical products to give them the desired properties for further industrial production, or to make finished products. Supervision of other workers may be included.

**8131 CHEMICAL PRODUCTS PLANT AND MACHINE OPERATORS**

Chemical products plant and machine operators monitor and operate units and machinery to blend, mix, process and package a wide range of chemical products.

Their tasks include:

- a) setting up, starting, controlling, adjusting and stopping machines and plant;
- b) monitoring reaction processes and transfers of products in conformance with safety procedures;
- c) monitoring meters, gauges and electronic instrumentation on one or more chemical or formulation units, such as mixers, kettles, blenders, dryers, tableting, encapsulation, granulation and coating machines;
- d) measuring, weighing and loading chemical ingredients following formulation cards;
- e) taking samples and performing routine chemical and physical tests of products and recording production data; and
- f) cleaning and performing minor repairs to machines and plant.

**Examples:**

Ammunition products machine operator	Converter operator (chemical processes)
Candle production machine operator	Detergent products machine operator
Chemical and related processes kiln operator	Explosive products machine operator
Chemical heat treating operator	Halogen gas production machine operator
Crushing, grinding and chemical-mixing machinery operator	Pharmaceutical and toiletry products machine operators

**8132 PHOTOGRAPHIC PRODUCTS MACHINE OPERATORS**

Photographic products machine operators operate and monitor equipment which makes photographic film and paper, and which processes exposed photographic film and makes prints.

Their tasks include:

- a) operating and monitoring equipment which makes photographic film and paper;
- b) operating, monitoring and testing photographic processing and printing equipment, and maintaining operational standards;
- c) preparing exposed film for different processing batches in dark rooms and dark chambers;
- d) inspecting images, films, prints and adjusting settings on print-making

- equipment to produce required color, brightness, contrast, number, size and type of prints;
- e) adjusting settings and running automatic developing equipment;
- f) operating equipment to transfer film to video tape or other electronic media;
- g) performing photographic processing related tasks; and
- h) operating automatic equipment (in retail establishments) to develop color negatives, prints and slides;

**Examples:**

Darkroom technician	Photographic film printer
Developing/photography machine operator	Photographic processor
Enlarging/photography machine operator	Photographic-film machine operator
Film/color developer	Printing/photography (black and white) machine operator
Photograph printer	Printing/photography (color) machine operator

**814 RUBBER, PLASTIC AND PAPER PRODUCTS MACHINE OPERATORS**

Rubber, plastic and paper products machine operators operate and monitor machines which knead and blend rubber and rubber compounds, and plastics or produce different paper products from paper, paperboard, cardboard and similar materials.

Tasks performed usually include: operating and monitoring machines which knead and blend rubber and rubber compounds, and produce various components and products from natural and synthetic rubber and plastics; operating and monitoring machines which produce various paper products; examining outputs for defects and conformity to specifications and adjusting machine settings accordingly.

**8141 RUBBER PRODUCTS MACHINE OPERATORS**

Rubber products machine operators operate and monitor machines which knead and blend rubber and rubber compounds, and produce various components and products from natural and synthetic rubber, such as molded footwear, domestic articles, insulating materials, industrial accessories, or tires.

Their tasks include:

- a) operating and monitoring machines which knead, mix and blend rubber and rubber compounds for further processing;
- b) operating and monitoring machines which produce sheets of rubber or rubberized fabric by a rolling process;
- c) operating and monitoring machines which extrude compounded rubber or shape vulcanized rubber by moulding;
- d) operating and monitoring machines which build up tires on a form, vulcanize tires and mould or rebuild used tires;
- e) examining outputs for defects and conformity to specifications; and
- f) locating defects and repairing worn and faulty tires by vulcanizing or other processes.

**Examples:**

Extruding/rubber machine operator	Rubber products machine operator
Latex worker	Tire maker
Rubber calendar operator	Tire production machine operator
Rubber milling machine operator	Tire repairer
Rubber moulder	Vulcanize



**8142 PLASTIC PRODUCTS MACHINE OPERATORS**

Plastic products machine operators operate and monitor machines which knead and blend compounds to obtain plastic materials and which make various plastic components and articles.

Their tasks include:

- a) operating and monitoring machines which knead and blend compounds to obtain plastic materials;
- b) operating and monitoring machines which shape plastic materials by moulding, extrusion, blowing, cutting and other means;
- c) operating and monitoring machines which laminate plastics and plastic impregnated materials or produce fiberglass;
- d) encasing uncoated wire, cord, cable and optic fiber in plastic;
- e) examining outputs for defects and conformity to specifications;
- f) recycling waste plastic materials; and
- g) making artificial eyes and contact lens discs, making and repairing spectacle frames and plastic parts of orthopaedic appliances.

**Examples:**

Laminated press operator (plastics)	Plastic extrusion machine operator
Machine cellophane bag maker	Plastic products machine operator
Molding machine operator (plastics)	Optic fiber drawer
Plastics boat builder	Plastic moulder
Plastics bottle blowing machine operator	Plastic product fabricator
Plastic cabling machine operator	

**8143 PAPER PRODUCTS MACHINE OPERATORS**

Paper products machine operators operate and monitor machines which produce boxes, envelopes, bags and other goods from paper, paperboard, cardboard and similar materials.

Their tasks include:

- a) operating and monitoring machines which glue paper to cardboard, cut it to the required length or cut and crease cardboard or paperboard to form box blanks;
- b) operating and monitoring pressing machines which form drinking cups or other containers from paper, paperboard or cardboard; and
- c) operating and monitoring machines which cut, fold and glue paper to make envelopes and paper bags, or which form bags from other similar materials.

**Examples:**

Machine operator (cardboard products)	Paper box maker machine operator
Machine operator (envelope and paper bag production)	Paper mache moulder
Machine operator (paper box production)	Paper machine moulder
Paper box cutting- and creasing-press operator	Paper products machine operator
	Papermaking machine operator (back/wet end)
	Supercalender operator

**815 TEXTILE, FUR AND LEATHER PRODUCTS MACHINE OPERATORS**

Textile, fur and leather products machine operators operate and monitor various types of machines which prepare, process and treat fibers, yarn, thread, leather, fur; produce, modify and repair footwear, garments and manufacture or dry clean textiles or fur and light leather articles.

Tasks include operating and monitoring weaving and knitting machines which process yarn or thread into woven, non-woven and knitted products; operating and monitoring machines which prepare fibers, and spin, double, twist and wind yarn and thread from natural textile fibers; operating and monitoring sewing machines to make, repair, darn and renovate textile, fur, synthetic or leather garments or embroider ornamental designs on garments or other materials; operating and monitoring machines which bleach, shrink, dye, and otherwise treat fibers, yarn, cloth or dry clean garments, fur, rugs, carpets; operating and monitoring various machines which prepare leather or treat fur or wool-bearing pelts; operating and monitoring machines which produce, modify and repair standard, custom or orthopaedic footwear and leather articles, such as luggage, brief cases, handbags.

#### **8151 FIBRE PREPARING, SPINNING AND WINDING MACHINE OPERATORS**

Fiber preparing, spinning and winding machine operators operate and monitor machines which prepare fibers, and spin, double, twist and wind yarn and thread from natural textile fibers. They twist two or more strands of yarn to prepare single stronger, smoother, uniform and heavier strands and treat textiles to make them stiff and water resistant.

Their tasks include:

- a) operating and monitoring machines for tearing woolen rags into fiber;
- b) operating and monitoring machines for cleaning and turning woolen yarn waste into fluffed wool;
- c) operating and monitoring machines which combine textile fibers into uniform blends;
- d) operating and monitoring machines which clean and fluff textile fibers, transform them into sliver, comb them into sliver for first drawing, combine slivers into sliver lap or sliver laps into ribbon lap;
- e) operating draw frame machine) having number of drawing sets, each set combining several slivers into one of nearly same weight and thickness as any of original sliver;
- f) operating and monitoring machines which spin thread and yarn from roving, wind two or more threads onto bobbin, twist two or more strands of yarn or thread into single strands of yarn to increase strength, smoothness and/or uniformity of yarn, or wind yarn or thread from one package to another;
- g) operating and monitoring spinning frame that draws out and twists roving or sliver into yarn;
- h) operating and monitoring machines for drawing slivers received from drawing machine into loosely twisted strands;
- i) preparing sizing for use in stiffening and finishing cloth and yarn by mixing ingredients such as starch, tallow, resins, soaps and water and boiling mixture for specified time in steam;
- j) treating textiles with chemicals to make them water resistant;
- k) cleaning rollers and cylinders of carding machines to remove wool waste; and
- l) operating and resurfacing metal drawing rolls of various spinning, combing and lapping machines with new rubber or leather covers.

#### **Examples:**

Doubler (yarn)	Spinning/thread and yarn machine operator
Fiber preparing machine operator	Twisting/thread and yarn machine operator
Ring spinner	Winding/thread and yarn machine operator
Spinning machine operator	Textile fibre combing machine operator

**8152 WEAVING AND KNITTING MACHINE OPERATORS**

Weaving and knitting machine operators set up, operate and monitor weaving and knitting machines which process yarn or thread into woven, non-woven and knitted products such as cloth, lace, carpets, rope, industrial fabric, hosiery and knitted garments or to quilt and embroider fabric.

Their tasks include:

- a) setting up and operating batteries of automatic, link-type knitting machines to knit garments of specified pattern and design;
- b) threading yarn, thread, and fabric through guides, needles, and rollers of machines for weaving, knitting, or other processing;
- c) tending automatic looms that simultaneously weave pile yarn, filling yarn, and warp yarn material to produce carpets and rugs with various colored designs;
- d) operating and monitoring loom on which yarn or twist is intersected and knotted at regular intervals to form mesh;
- e) operating and monitoring large automatic multi-needle machines to embroider material or to sew lengths of several layers of material to make yard goods, quilts or mattress coverings;
- f) tending circular knitting machines with automatic pattern controls that knit seamless hose;
- g) operating and monitoring knitting machines to knit hosiery to shape of foot and leg;
- h) operating and monitoring machine for knitting heel and toes of socks into ribs or tops cut from circular fabric;
- i) operating and monitoring machine which seams openings in toes of socks;
- j) operating and monitoring crocheter machine to knit lace, trimming etc. of desired pattern or design;
- k) examining looms to determine causes of loom stoppage, such as warp filling, harness breaks, or mechanical defects;
- l) repairing or replacing worn or defective needles and other components; and
- m) cleaning, oiling, and lubricating machines, using air hoses, cleaning solutions, rags, oil cans, and/or grease guns.

**Examples:**

Beam warper	Knitting setter (machine)
Combing textile fibers machine operator	Lace weaver (machine)
Jacquard card cutter	Loom threader (machine)
Jacquard design copyist	Machine crocheter
Jacquard weaver	Weaving machine operator
Knitting machine operator (general)	

**8153 SEWING MACHINE OPERATORS**

Sewing machine operators operate and monitor sewing machines to make, repair, darn and renovate textile, fur, synthetic or leather garments or embroider ornamental designs on garments or other materials. They operate button hole making and eyelet holing machines to cut holes, stitch around holes, stitch buttons and fix eyelets to garments.

Their tasks include:

- a) operating or tending sewing machines to perform garment sewing operations, such as joining, reinforcing, seaming or decorating garments or garment parts;
- b) attaching buttons, hooks, zippers, fasteners, or other accessories to fabric, using feeding hoppers or clamp holders;
- c) tending semiautomatic sewing machines with multiple-sewing heads controlled by pattern chain that embroiders various designs on garments;

- d) operating machines, such as single or double needle serging and flat-bed felling machines, to automatically join, reinforce, or decorate material or articles;
- e) operating fur sewing machines to join fur pelt strips to required size and shape and join pelts into garment sections or shells;
- f) operating stitching machines to sew leather parts together for leather garments, handbags, gloves;
- g) monitoring machine operation to detect problems such as defective stitching, breaks in thread, or machine malfunctions; and
- h) performing equipment maintenance tasks such as replacing needles.

**Examples:**

Embroidery machine operator  
Piping operator (garment)

Industrial sewing machine operator  
Sewing machine operator

**8154 BLEACHING, DYEING AND FABRIC CLEANING MACHINE OPERATORS**

Bleaching, dyeing and fabric cleaning machine operators operate and monitor machines that bleach, shrink, dye, and otherwise treat fibers, yarn or cloth.

Their tasks include:

- a) starting and controlling machines and equipment to bleach, dye, or otherwise process and finish fabric, yarn, thread, and/or other textile goods;
- b) tending machines that shrink woven or knitted cloth to predetermined size or strengthen the weave by interlocking the fibers;
- c) tending a variety of automatic machines that comb and polish furs;
- d) operating and monitoring machines that treat silk to give it body and weight;
- e) operating and monitoring machines that impregnate textiles with chemicals to render them waterproof;
- f) dyeing articles to change or restore their colors;
- g) operating and monitoring machines that stretch, or impart luster, or other type of finish to textiles;
- h) tending and regulating equipment that fumigates and removes foreign matter from furs;
- i) operating machines that comb, dry and polish furs, clean, sterilize and fluff feathers and blankets;
- j) keying in processing instructions to program electronic equipment;
- k) observing display screens, control panels, equipment, and cloth entering or exiting processes to determine if equipment is operating correctly; and
- l) cleaning machine filters and lubricating equipment.

**Examples:**

Bleaching machine operator  
Curing machine operator  
Dyeing machine operator  
Evaporator operator  
Fabric bleaching machine operator  
Finishing machine operator  
Silk degummer  
Silk weighter  
Still turpentine operator

Textile bleacher  
Textile calendar operator  
Textile dyeing machine operator  
Textile fuller  
Textile shrinker  
Textile washer  
Wool carbonizer  
Yarn dyer

**8155 FUR AND LEATHER PREPARING MACHINE OPERATORS**

Fur and leather preparing machine operators operate and monitor various machines that prepare leather or treat fur or wool-bearing pelts. They trim, scrape, clean, tan, buff and dye animal hides, pelts or skins to produce leather stock and finished furs.

Their tasks include:

- a) operating and monitoring machines which remove flesh and fat from hides or pelts to clean and soften them prior to processing;
- b) operating and monitoring machines which remove long coarse hair from fur pelts, trim hair to even length and dye, stretch and smooth dressed pelts;
- c) operating and monitoring machines to remove epidermis hair roots, pigment cells and lime salts from grain side of skin;
- d) operating and monitoring machines to reduce thickness of hide or skin to uniform size;
- e) operating and monitoring machines to polish or roughen hides or skins to specified finish;
- f) operating and monitoring machines which separate residual wool from skins, or flesh and hair from hides;
- g) operating and monitoring machines in which hides are split edgeways to form two or more pieces or to give uniform thickness;
- h) operating and monitoring machines which treat hides and skins in solutions to convert them into leather;
- i) treating surface of leather with oil and operating glazing machine to give glossy finish to leather;
- j) operating and monitoring machines which apply dyes and stains to leather; and
- k) maintaining and repairing vats and other machinery.

**Examples:**

Dehairing/hide machine operator  
Staining/leather machine operator

Tanning machine operator

#### **8156 SHOEMAKING AND RELATED MACHINE OPERATORS**

Shoemaking and related machine operators operate and monitor machines which produce and repair standard or special footwear, handbags and other accessories, mainly made of leather.

Their tasks include:

- a) operating and monitoring machines which mark patterns and cut shoe parts;
- b) operating and monitoring machines which sew shoe parts together, or edge, polish, or apply ornaments and perform finishing tasks; and
- c) operating and monitoring machines which produce luggage, handbags, belts and other accessories, as well as other items such as saddles, collars or harnesses.

**Examples:**

Footwear production machine operator  
Leather production machine operator  
Shoemaking machine operator

#### **8157 LAUNDRY MACHINE OPERATORS**

Laundry machine operators operate laundry, dry cleaning, pressing and fabric treatment machines in laundries and dry-cleaning establishments.

Their tasks include:

- a) sorting articles for cleaning according to the type color, fabric and cleaning treatment required;
- b) placing sorted articles into receptacles and onto conveyor belts for moving to repair and cleaning areas;
- c) checking and removing stains from garments, and replacing buttons and making

- minor repairs;
- d) loading and unloading washing machines, driers and extractors;
- e) adding cleaning agents and starches to articles;
- f) smoothing articles and guiding them through cleaning and pressing machines;
- g) stopping and starting machines to untangle, straighten and remove articles;
- h) placing articles on shelves and hanging articles for delivery and collection; and
- i) packaging articles and preparing orders for dispatch.

**Examples:**

Dry-cleaning machine operator  
 Laundry machine operator  
 Laundry pressing machine operator

**8159 TEXTILE, FUR AND LEATHER PRODUCTS MACHINE OPERATORS NOT ELSEWHERE CLASSIFIED**

This unit group covers textile, fur and leather products machine operators not classified elsewhere in Minor group 815, Textile, fur and leather products machine operators. For instance, the group includes those engaged in operating and monitoring machines which make hats, tents, mattresses or miscellaneous articles such as braids or other trimmings.

Their tasks include:

- a) operating and monitoring machines which form and make hats out of textiles, fur or leather;
- b) operating and monitoring machines which make miscellaneous articles such as braids or other trimmings;
- c) operating and monitoring machines that fold cloth into measured length;
- d) operating and monitoring machines that wind thread, twine, or yarn into balls preparatory to shipping or further processing; and
- e) operating and monitoring machines to measure size of pieces of leather.

**Examples:**

Braid making machine operator	Fuel tender
Chemical bleacher operator	Fur fiber mixer (machine)
Chemical processing plant operator, n.e.c	Hat blocking machine operator
Coal-gas maker	Hat making machine operator
Coke burner	Radioactive materials chemical processer
Coke production plant operator	Synthetic fiber production plant operator
Felt hood former	Tent making machine operator
Fertilizer plant operator	Textile pattern making machine operator

**816 8160 FOOD AND RELATED PRODUCTS MACHINE OPERATORS**

Food and related machine operators set, operate and attend machinery used to slaughter animals, trim meat from carcasses; bake, freeze, heat, crush, mix, blend and otherwise process foodstuffs, beverages and tobacco leaves.

Task performed usually include: operating and monitoring machinery used to restrain, stun, slaughter animals and trim carcasses into standard meat and fish cuts; setting, operating and attending machinery and ovens to mix, bake and otherwise prepare bread and flour confectionery products; operating machinery to crush, mix, malt, cook and ferment grains and fruits to produce beer, wines, malt liquors, vinegar, yeast and related products; attending equipment to make jam, toffee, cheese, processed cheese, margarine, syrup, ice, pasta, ice-cream, sausages, chocolate, maize starch, edible fats and

dextrin; operating equipment to cool, heat, dry, roast, blanch, pasteurize, smoke, sterilize, freeze, evaporate and concentrate foodstuffs and liquids used in food processing; mixing, pulping, grinding, blending and separating foodstuffs and liquids with churning, pressing, sieving, grinding and filtering equipment; processing tobacco leaves by machine to make cigarettes, cigars, pipe and other tobacco products.

Their tasks include:

- a) operating and monitoring machinery used to restrain, stun, slaughter animals and trim carcasses into standard meat and fish cuts;
- b) setting, operating and attending machinery and ovens to mix, bake and otherwise prepare bread and flour confectionery products;
- c) operating machinery to crush, mix, malt, cook and ferment grains and fruits to produce beer, wines, malt liquors, vinegar, yeast and related products;
- d) attending equipment to make jam, toffee, cheese, processed cheese, margarine, syrup, ice, pasta, ice-cream, sausages, chocolate, maize starch, edible fats and dextrin;
- e) operating equipment to cool, heat, dry, roast, blanch, pasteurize, smoke, sterilize, freeze, evaporate and concentrate foodstuffs and liquids used in food processing;
- f) mixing, pulping, grinding, blending and separating foodstuffs and liquids with churning, pressing, sieving, grinding and filtering equipment; and
- g) processing tobacco leaves by machine to make cigarettes, cigars, pipe and other tobacco products.

**Examples:**

Bakery products machine operator	Milk processing machine operator
Bread production machine operator	Preserving cook, general
Chocolate production machine operator	Sterilizing machine operator (food)
Cigar and cigarettes production machine operator	Tobacco processing machine operator
Cigarette maker, machine	Tea processing machine operator
Dairy products machine operator	Coffee processing machine operator
Fish processing machine operator	Cocoa processing machine operator
Freezer, meat and fish	Brewers and wine machine operator
Meat processing machine operator	Other beverages machine operators
	Canning machine operator

## 817 WOOD PROCESSING AND PAPERMAKING PLANT OPERATORS

Wood processing and papermaking plant operators monitor, operate, and control automated lumber mill equipment sawing wood, cutting veneer and making plywood, and otherwise preparing wood for further use. Pulp mill machine operators operate and monitor various types of processing machinery and equipment to produce pulp.

Their tasks include:

- a) examining logs and rough lumber to determine size, condition, quality and other characteristics to decide best lumber cuts to carry out, or operating automated equipment to convey logs through laser scanners which determine the most productive and profitable cutting patterns;
- b) sorting, stacking and placing logs and wood billets onto conveyors and lathes from trucks for processing into chips, veneers and pulp;
- c) operating and monitoring screening equipment, bleaching equipment, digesters, mixing tanks, washers, and other pulp processing machinery and equipment to carry out one or more cellulose processing steps;
- d) observing equipment and machinery panel indicators, gauges, level indicators and other equipment instruments to detect machinery and equipment malfunctions and ensure

process steps are carried out according to specifications;

- e) operating and monitoring plywood core-laying machines and hot-plate plywood presses and machines which cut veneer; and
- f) transporting processed wood products, such as plywood, chipboard sheets and panels to work areas.

#### **8171 PULP AND PAPERMAKING PLANT OPERATORS**

Pulp and papermaking plant operators operate and monitor multi-function process control machinery and processing equipment to control the processing of wood, scrap pulp and other cellulose materials in the production of pulp.

Their tasks include:

- a) coordinating and monitoring the operation of screening equipment, washing equipment, digesters, mixing tanks and other pulp processing equipment from automated panel boards in central control room to control the processing of wood, scrap pulp, recyclable paper and other cellulose materials;
- b) operating and monitoring screening equipment, bleaching equipment, digesters, mixing tanks, washers and other pulp processing machinery and equipment to carry out one or more cellulose processing steps;
- c) controlling start-up and shut-down of process machinery and equipment, and observing equipment and machinery panel indicators, gauges, level indicators and other equipment instruments to detect machinery and equipment malfunctions and ensure process steps are carried out according to specifications;
- d) analyzing instrument readings and production test samples and making adjustments to pulp production process and equipment as required; and
- e) completing and maintaining production reports.

##### **Examples:**

Assembly-line/automated operator	Paper pulp plant operator
Beater operator (paper and pulp)	Papermaking plant operator
Cardboard lining machine operator	Pulp and paper assistant bleacher operator
Chipper/paper pulp operator	Pulp and paper digester operator
Digester operator	Pulp and paper grinderman/woman
Grinding machine operator (wood)	Pulp and paper refiner operator
Paper bag and envelope maker (machine)	Pulping control operator
Paper box maker (machine)	Pulping Technician
Paper box-cutting and creasing press operator	Repulper operator
	Supercalendar operator
	Thermo-mechanical pulp assistant operator

#### **8172 WOOD PROCESSING PLANT OPERATORS**

Wood processing plant operators monitor, operate, and control automated lumber mill equipment for sawing timber logs into rough lumber, cutting veneer, making plywood and particle board, and otherwise preparing wood for further use.

Their tasks include:

- a) examining logs and rough lumber to determine size, condition, quality and other characteristics to decide best lumber cuts to carry out, or operating automated equipment to convey logs through laser scanners which determine the most productive and profitable cutting patterns;
- b) operating and monitoring log in-feed and conveyor systems;
- c) operating and monitoring automated lumber mill equipment from control rooms or equipment consoles head saws, resaws and multiblade saws to saw



- logs, cants, flitches, slabs or wings and remove rough edges from sawn timber into dressed lumber of various sizes, and saw or split shingles and shakes;
- d) operating and monitoring plywood core-laying machines and hot-plate plywood presses and machines which cut veneer; and
- e) cleaning and lubricating sawmill equipment.

**Examples:**

Band-saw operator	Sawmill planer operator
Circular-saw operator	Sawmill sawyer (general)
Edge sawyer	Sawmill trimmer operator
Log cut-off operator	Treating wood machine operator
Painting machine operator (wood)	Veneer cutter
Plywood core laying operator	Wood grader
Plywood press-operator	Wood processing plant operator
Ripsaw operator	Wood-processing plant sawyer
Sawmill machine operator	

**818 OTHER STATIONARY PLANT AND MACHINE OPERATORS**

This unit group includes stationary plant and machine operators not classified elsewhere in sub-major group 81, Stationary plant and machine operators. The group includes, for instance, operators of machines which make silicon chips and splice cables and ropes.

Task performed usually include: monitoring kilns, furnaces and other machinery and equipment used in the manufacture of glass, ceramics, porcelain, tiles or bricks; operating machines to anneal, harden or decorate glass and ceramics; maintaining and operating stationary steam engines, boilers, turbines and auxiliary equipment; operating and monitoring machines which weigh, pack and label products, or fill containers with products;

**8181 GLASS AND CERAMICS PLANT OPERATORS**

Glass and ceramics plant operators operate and monitor kilns, furnaces and other machinery and equipment used in the manufacture of glass, ceramics, porcelain, tiles or bricks. They operate machines to anneal, harden or decorate glass and ceramics.

Their tasks include:

- a) operating and monitoring glass-making furnaces to make glass by melting and fusing pre-mixed ingredients;
- b) tending hot or cold-end spray equipment used to coat glassware with surface hardener;
- c) operating and maintaining machines that press or blow molten glass in molds to form or shape containers, such as bottles, jars and drinking glasses;
- d) operating hand press to mould glass into required shape;
- e) operating drawing kiln to process molten glass into continuous sheet of flat glass;
- f) operating and monitoring floating-glass production plant;
- g) operating and maintaining finishing machines to grind, drill, sand, bevel, decorate, wash or polish glass or glass products;
- h) setting and operating press machines to mould ceramic articles from moist clay;
- i) operating machines to mix clay with water to knead it into a suitable plastic condition or semi-liquid form for making ceramic products;
- j) operating and monitoring kilns which bake pottery, porcelain ware and bake bricks and tiles;
- k) operating and monitoring machines for making glaze or abrasives;
- l) operating and monitoring machines which extrude molten glass to form fiberglass filaments; and

- m) observing finished products to identify splits, cracks, breaks, color and other imperfections.

**Examples:**

Abrasives maker	Glass-blowing machine operator
Brick and tile kiln-operator	Glass-drawing machine operator
Ceramics kiln operator	Glass-making furnaceman
Ceramics plant operator	Glass-pressing machine operator
Clay mixer	Glaze maker
Clay slip maker	Mixing/clay & glass machine-operator
Fiberglass maker	Painting ceramic machine operator
Float-glass bath operator	Painting glass machine operator
Glass former	Plate-glass polisher
Glass kiln operator	Plate-glass rollerman
Glass mixer	Porcelain ware kiln operator
Glass plant operator	Pottery and porcelain kiln-operator
Glass production furnace operator	Ceramics painting machine operator
Glass temperer	Glass painting machine operator
Glass tube maker	Extruding clay press operator
Glass-annealing furnaceman	

**8182 STEAM ENGINE AND BOILER OPERATORS**

Steam engine and boiler operators maintain and operate various types of steam engines, boilers, turbines and auxiliary equipment to provide power and other utility services for commercial, industrial and institutional buildings, at work sites and aboard ships or self-propelled vessels.

Their tasks include:

- operating, cleaning, lubricating and monitoring steam engines, boilers and auxiliary equipment such as pumps, compressors and air-conditioning equipment to supply and maintain steam and power for buildings, marine vessels or pneumatic tools;
- analyzing and recording instrument readings, troubleshooting and performing minor repairs to prevent equipment or system failure;
- monitoring and inspecting performance of equipment for efficient operation and ensuring boiler water, chemical, and fuel levels are maintained at required levels;
- firing coal furnaces by hand or with stokers and gas or oil-fed boilers, using automatic gas feeds or oil pumps;
- testing boiler water quality or arrange for testing, adjusting and taking necessary corrective action, such as adding chemicals to prevent corrosion and harmful deposits;
- monitoring ship's engine, machinery and equipment indicators, recording variables and reporting abnormalities to ship engineer officer on watch; and
- operating and maintaining off-loading liquid pumps and valves.

**Examples:**

Boiler fireman	Ship oiler and greaser
Boiler operator	Ship's boiler operator
Boiler tender	Steam engine operator
Railway steam-engine fireman	Stoker
Ship fireman	Thermal plant operator

**8183 PACKING, BOTTLING AND LABELLING MACHINE OPERATORS**

Packing, bottling and labelling machine operators operate and monitor machines which weigh, pack and label various products, or fill different containers with products.

Their tasks include:

- a) operating and monitoring machines that weigh, wrap, seal and pack various products;
- b) operating and monitoring machines that fill and seal tubes, bottles, cans, boxes, bags and other containers with products, such as food, beverages, paints, oils and lotions; and
- c) operating and monitoring machines that, by gluing or other methods, label products, packages and various containers.

**Examples:**

Barista	Canning vegetable machine operator
Bottle filler	Fruit juice production machine operator
Bottling machine-operator	Labelling machine operator
Canning food machine operator	Packing machine operator
Canning fruit machine operator	Wrapping machine operator

**8189 STATIONARY PLANT AND MACHINE OPERATORS NOT ELSEWHERE CLASSIFIED**

This unit group includes stationary plant and machine operators not classified elsewhere in sub-major group 81, Stationary plant and machine operators. The group includes, for instance, operators of machines which make silicon chips and splice cables and ropes.

**Examples:**

Cable and rope splicing machine operator	Rides operator
Rides operator	Silicon chip production machine operator

**82 ASSEMBLERS**

Assemblers assemble prefabricated parts or components to form subassemblies, products and equipment, according to strictly laid down procedures. The products worked on may be moved from one worker to the next along assembly lines.

Tasks performed by workers in this sub-major group usually include: assembling components into various types of products and equipment, according to strictly laid down procedures.

**821 ASSEMBLERS**

Tasks performed usually include: assembling components into various types of products and equipment, according to strictly laid down procedures; reviewing work orders, specifications, diagrams and drawings to determine materials needed and assembly instructions; recording production and operational data on specified forms; inspecting and testing completed components and assemblies, wiring installations and circuits; rejecting faulty assemblies and components.

**8211 MECHANICAL MACHINERY ASSEMBLERS**

Mechanical machinery assemblers assemble, according to strictly laid down procedures, component parts of mechanical machinery such as engines, motor vehicles, turbines and aircraft.

Their tasks include:

- a) assembling and installing prefabricated parts or components to form subassemblies, mechanical machinery, engines and finished motor vehicles;
- b) reviewing work orders, specifications, diagrams and drawings to determine materials needed and assembly instructions;
- c) recording production and operational data on specified forms;
- d) inspecting and testing completed components and assemblies; and
- e) rejecting faulty assemblies and components;

**Examples:**

Aircraft assembler	Internal combustion engine fitter assembler
Assembly line operator (automated)	(except aircraft and marine)
Assembly-line worker (agricultural machinery)	Turbine assembler
Assembly-line worker (aircraft engine)	Vehicle assembler
Assembly-line worker (heavy machinery)	Machine-operator, drilling/metal
Engine assembler	Machine-operator, grinding/metal
Engine installer	Machine-operator, machine tool
Gearbox assembler	Motor vehicle engine assembler
	Aircraft engine assembler

## 8212 ELECTRICAL AND ELECTRONIC EQUIPMENT ASSEMBLERS

Electrical and electronic equipment assemblers assemble or modify, according to strictly laid down procedures, components of electrical, electro-mechanical and electronic equipment.

Their tasks include:

- a) assembling component parts and electrical and electronic systems and positioning, aligning and fastening units to assemblies, sub-assemblies, or frames using hand or power tools, soldering and micro-welding equipment.;
- b) reviewing work orders, specifications, diagrams and drawings to determine materials needed and assembly instructions;
- c) recording production and operational data on specified forms;
- d) operating wire-coiling machines to wind wire coils used in electrical equipment and components such as registers, transformers, armature wires, electric motors and generators; and
- e) inspecting and testing completed components and assemblies, wiring installations and circuits and rejecting faulty assembly components;

**Examples:**

Armature/coil assembler	Electromechanical equipment assembler
Auxiliary machine operator	Electronic equipment assembler
Coil winder (hand/machine)	Etcher (printed circuit board)
Computer assembler	Rubber assembler
Console operator	Surface mount technology machine operator
Electric line installation machine operator	Telephone assembler
Electrical equipment assembler	Television assembler
	Watch assembler

## 8219 ASSEMBLERS NOT ELSEWHERE CLASSIFIED

Assemblers not elsewhere classified assemble, according to strictly laid down procedures various products that do not include electronic, electrical, or mechanical components.

Their tasks include:

- a) assembling component parts and positioning, aligning and fastening units to assemblies, sub-assemblies, or frames using hand or power tools, soldering and micro-welding equipment;
- b) reviewing work orders, specifications, diagrams and drawings to determine materials needed and assembly instructions;
- c) recording production and operational data on specified forms;
- d) inspecting and testing components and completed assemblies; and
- e) rejecting faulty products.

**Examples:**

Ammunition assembler	Metal products (except mechanical) assembler
Box builder	assembler
Bicycle assembler	Paperboard products assembler
Composite products assembler	Pen and pencil assembler
Door assembler	Plastic products assembler
Eyeglass frame assembler	Plastic toy assembler
Furniture finisher, wood	Rubber products assembler
Jewellery assembler	Sun-blinds assembler
Knife assembler	Textile products assembler
Leather products assembler	Thermos bottle assembler
Luggage finisher	Wood products assembler

### 83 DRIVERS AND MOBILE PLANT OPERATORS

Drivers and mobile plant operators drive and tend trains and motor vehicles, or drive, operate and monitor industrial and agricultural machinery and equipment, or execute deck duties on board ship and other water-borne craft.

Tasks performed by workers in this sub-major group usually include: driving and tending trains and motor vehicles; driving, operating and monitoring mobile industrial and agricultural machinery and equipment; carrying out deck duties on board ship and other water-borne craft.

#### 831 LOCOMOTIVE ENGINE DRIVERS AND RELATED WORKERS

Locomotive engine drivers and related workers drive, or assist in driving, locomotive engines to transport passengers and freight, take charge of and safeguard railway freight trains during runs, control the movement of railway traffic by operating signals, switch rolling stock and make up trains in railway yards, make up trains for hauling in mines and control their movement.

Tasks performed usually include driving or assisting in driving railway engines, operating railway signals, switching rolling stock and making up trains in railway yards, making up trains in mines and controlling their movement.

##### 8311 LOCOMOTIVE ENGINE DRIVERS

Locomotive engine drivers drive, or assist in driving, locomotive engines to transport passengers and freight.

Their tasks include:

- a) driving or assisting in driving a steam, electric or diesel-electric locomotive engine;
- b) driving an underground or elevated passenger train;
- c) driving a locomotive to haul carriages underground or on the surface of a mine or quarry;

- d) watching for track hazards, observing signals and indicator gauges; and
- e) operating communications systems to communicate with train crews and traffic controllers to ensure safe operation and scheduling of trains.

**Examples:**

Elevated train driver	Train driver including Light Rail transit (LRT)
Engine/mine and quarry driver	and Metro rail transit (MRT)
Locomotive engine driver	Underground train driver
Railway engine driver	

**8312 RAILWAY BRAKE, SIGNAL AND SWITCH OPERATORS**

Railway brakemen, signallers and shunters take charge of and safeguard railway freight trains during runs, control the movement of railway traffic by operating signals, switch rolling stock and make up trains in railway yards, make up trains for hauling in mines and control their movement.

Their tasks include:

- a) taking charge of and safeguarding freight train during run;
- b) controlling flow of railway traffic over section of line by operating signals and switches from control panel or signal box;
- c) switching and coupling rolling stock in railway yards and sidings in accordance with orders about loading, unloading and make-up of trains;
- d) making up trains for hauling by locomotive or cable and directing their movement along haulage ways in a mine or quarry; and
- e) checking train systems and equipment such as air conditioning and heating systems, brakes and brake hoses prior to train run.

**Examples:**

Freight train railway brakeman	Railway signaller
Mine and quarry brakeman	Railway signalman
Railway braker	Railways operations/maintenance towerman
Railway shunter	Railways Transport Service Supervisors

**832 CAR, VAN AND MOTORCYCLE DRIVERS**

Car, van and motorcycle drivers drive and tend motor cycles, motorized tricycles, cars or vans to transport passengers, materials or goods.

Tasks performed usually include: driving and tending motor cycles, motorized tricycles, cars or vans in order to transport materials, goods or passengers.

**8321 MOTORCYCLE DRIVERS**

Motorcycle drivers drive and tend motor cycles or motorized tricycles equipped to transport materials, goods or passengers.

Their tasks include:

- a) driving and tending motor cycle or motorized tricycle to transport materials, goods and passengers;
- b) observing traffic rules and signals;
- c) cleaning and washing vehicle as well as performing maintenance and minor repairs;
- d) keeping a record of journeys; and
- e) delivering messages.

**Examples:**

Dispatch rider  
Motorcycle driver

Motorcyclist  
Tricycle driver

**8322 CAR, TAXI AND VAN DRIVERS**

Car, taxi and van drivers drive and tend motor cars and vans to transport passengers, mail or goods.

Their tasks include:

- a) driving and tending passenger, vans, cars or taxis;
- b) driving and tending cars, vans or small trucks to deliver mail or goods;
- c) assisting passengers with handling of luggage;
- d) collecting fares, payments for deliveries, or documents certifying deliveries;
- e) operating telecommunications equipment to report location and availability and follow directions of control center;
- f) determining most appropriate route;
- g) assisting physically challenged passengers; and
- h) operating equipment to facilitate the loading and unloading of physically challenged passengers.

**Examples:**

Ambulance driver  
Chauffeur/family driver  
Company driver  
Courier driver

Jeepney driver  
Taxi/FX driver  
Van driver  
Parking valet

**833 HEAVY TRUCK AND BUS DRIVERS**

Heavy truck and bus drivers drive and tend heavy trucks, lorries, buses or street tramcars to transport goods, liquids, heavy materials, mail or passengers.

Tasks performed usually include: driving and tending heavy trucks, lorries, buses or street tramcars in order to transport goods, liquids, heavy materials, mail or passengers.

**8331 BUS AND TRAM DRIVERS**

Bus and tram drivers drive and tend buses or street tramcars to transport passengers, mail or goods.

Their tasks include:

- a) driving and tending motor bus, trolley bus or motor coach to transport local or long mail or goods;
- b) driving and tending street tramcar transporting passengers;
- c) opening and closing doors before or after passengers board or alight;
- d) assisting passengers with luggage;
- e) controlling lighting, heating and ventilation on buses and trams;
- f) observing traffic to ensure safe progress; and
- g) collecting fares or verifying passenger has necessary ticket.

**Examples:**

Bus driver  
Motor coach driver  
School bus driver

Tram driver  
Truck driver

**8332 HEAVY TRUCK AND LORRY DRIVERS**

Heavy truck and lorry drivers drive and tend heavy motor vehicles to transport goods, liquids and heavy materials over short or long distances.

Their tasks include:

- a) driving and tending a heavy motor vehicle, such as a lorry with or without trailer or a dump-truck, to transport goods, liquids or heavy materials over short or long distances;
- b) determining the most appropriate routes;
- c) ensuring goods are stowed and securely covered, to prevent loss and damage;
- d) assisting with or carrying out loading or unloading operations, using various lifting or tipping devices;
- e) carrying out minor maintenance to vehicles, and arranges major maintenance and repairs; and
- f) estimating weights to comply with load limitations, and ensuring the safe distribution of weights.

**Examples:**

Concrete mixer driver  
Dump truck driver  
Fire truck driver  
Heavy truck driver

Road train driver  
Shuttle-car operator (mine)  
Trailer driver  
Garbage truck driver

**834 MOBILE PLANT OPERATORS**

Mobile plant operators drive, tend, operate and monitor special -purpose motorized, machinery or equipment used for clearing or preparing land; digging, moving, and spreading earth, rock and similar materials; and lifting or moving heavy objects.

Tasks performed usually include: preparing and positioning plant for operation; adjusting speed, height and depth of implements; driving and operating mobile plant; operating attachments to lift, swing and release trees, logs, earth and other heavy objects or materials; operating and monitoring lifting trucks and stationary or mobile cranes in construction, transportation and storage operations; servicing machinery and performing minor repairs.

**8341 MOBILE FARM AND FORESTRY PLANT OPERATORS**

Mobile farm and forestry plant operators drive, tend, operate and monitor one or more types of special purpose motorized, mobile machinery or equipment used in agricultural, horticultural and forestry operations.

Their tasks include:

- a) driving and tending tractor drawn or self-propelled special -purpose farm machinery to plough land and sow, fertilize, cultivate and harvest crops;
- b) driving and tending tractor-drawn or self-propelled special -purpose forestry machinery to clear land, plant, harvest and carry trees and timber or perform other forestry operations;
- c) preparing and positioning plant for operation;
- d) adjusting speed, height and depth of implements;
- e) operating plant to hold, lift and cut trees;
- f) operating attachments to lift, swing, release and sort trees and logs, and operating auxiliary plant such as chipping machines and log splitting machines;
- g) feeding felled trees into processors to strip limbs and cut into logs and loading logs onto stockpiles and into trucks; and
- h) servicing machinery and performing minor repairs.



**Examples:**

Harvester operator	Motorized forestry plant operator
Loader operator	Timber carrier driver
Logging plant operator	Tractor driver
Motorized farm equipment operator	Tree faller operator
Motorized farm plant operator	

**8342 EARTHMOVING AND RELATED PLANT OPERATORS**

Earthmoving and related plant operators operate machines to excavate, grade, level, smooth and compact earth or similar materials.

Their tasks include:

- a) operating and monitoring excavating machinery equipped with moveable shovel, grab-bucket or dragline bucket, to excavate and move earth, rock, sand, gravel or similar materials;
- b) operating and monitoring machinery for digging trenches for sewers, drainage, water, oil, gas or similar pipelines;
- c) operating and monitoring machinery equipped with concave steel blade to move, distribute and level earth, sand, snow and other materials;
- d) operating and monitoring equipment to remove sand, gravel and mud from bottom of body of water;
- e) operating and monitoring machines for hammering wooden, concrete or steel piles into ground;
- f) operating and monitoring power roller to compact and smooth layers of materials in making roads, pavements and similar work; and
- g) operating and monitoring machines which spread and smooth concrete or bituminous or tar preparations to construct roadways, roads or similar surfaces.

**Examples:**

Bulldozer operator	Snow groomer operator
Excavator operator	Road grader and scraper operator
Front-end loader operator	Road surface laying machinery operator
Hydraulic, back hoe, excavator operator	Road-roller operator
Mobile Plant operator	Tar spreading machine operator
Pay loader	Trench-digging machine operator
Pile-driver operator	Wheel loader operator
Sand pro operator	

**8343 CRANE, HOIST AND RELATED PLANT OPERATORS**

Crane, hoist and related plant operators operate and monitor stationary and mobile cranes and other hoisting equipment.

Their tasks include:

- a) operating and monitoring stationary or mobile cranes by raising and lowering jibs and booms, to lift, move, position or place equipment and materials;
- b) operating and monitoring equipment for hoisting, lowering or raising workers and materials on construction sites or in mines;
- c) operating and monitoring ski-lifts and similar equipment;
- d) operating and monitoring machinery used to haul ferry or barge with goods, passengers and vehicles across short stretches of water;
- e) operating and monitoring machinery to open and close bridge for the passage of road and water traffic;
- f) operating and monitoring cranes equipped with dredging attachments to dredge waterways and other areas; and

- g) operating cranes mounted on boats or barges to lift, move and place equipment and materials.

**Examples:**

Bridge or gantry crane operator	Mobile crane operator
Construction hoist operator	Opening bridge operator
Crawler crane operator	Rough terrain crane operator
Floating crane master (gov)	Stationary jib crane operator
Mine cageman	Truck mounted crane operator
Mine hoist operator	Winch operator

**8344 LIFTING TRUCK OPERATORS**

Lifting truck operators drive, operate and monitor lifting-truck or similar vehicle to transport, lift and stack pallets with goods.

Their tasks include:

- a) operating and monitoring lifting-truck and similar equipment to load and unload, transport, lift and stack goods and pallets in terminals, harbors, warehouses, factories and other establishments;
- b) positioning lifting devices under, over, or around loaded pallets, skids and boxes, and securing material or products for transport to designated areas;
- c) inspecting equipment to identify wear and damage;
- d) performing routine maintenance on vehicles and equipment; and
- e) keeping records of work undertaken and breakdowns of vehicles.

**Examples:**

Fork lift operator  
Lifting truck operator  
Tower crane operator

**835 SHIP'S DECK CREWS AND RELATED WORKERS**

Ship's deck crews and related workers carry out deck duties on board ship and similar duties on board other water-borne craft.

Tasks performed usually include: standing look-out watches at sea and when entering or leaving harbor or other narrow waters; steering ship according to instructions; handling ropes and wires, and operating mooring equipment; maintaining and, in some cases, operating ship's equipment, cargo gear, rigging, life-saving and fire fighting appliances; performing deck and hull cleaning, scraping, painting and other maintenance duties as required; breaking out, rigging and stowing cargo-handling gear, stationary rigging and running gear.

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- e) performing deck and hull cleaning, scraping, painting and other maintenance duties as required; and
- f) breaking out, rigging and stowing cargo-handling gear, stationary rigging and running gear.

**Examples:**

Able seaman  
Bargeman  
Boatman  
Boatswain  
Coxswain  
Dockman-diver  
Dockman-rigger  
Ferry hand  
Fourth mate  
Ordinary seaman

Pumpboat operator  
Reefer repairman  
Sailor  
Seaman  
Seaperson  
Second mate  
Ship's deck crew  
Third mate  
Tug hand  
Yacht crew

## MAJOR GROUP 9

### ELEMENTARY OCCUPATIONS

Elementary occupations involve the performance of simple and routine tasks which may require the use of hand-held tools and considerable physical effort. Most occupations in this major group require skills at the first ISCO skill level.

Tasks performed by workers in elementary occupations usually include: cleaning, restocking supplies and performing basic maintenance in apartments, houses, kitchens, hotels, offices and other buildings; washing cars and windows; helping in kitchens and performing simple tasks in food preparation; delivering messages or goods; carrying luggage and handling baggage and freight; stocking vending machines or reading and emptying meters; collecting and sorting refuse; sweeping streets and similar places; performing various simple farming, fishing, hunting or trapping tasks performing simple tasks connected with mining, construction and manufacturing including product-sorting; packing and unpacking produce by hand and filling shelves; providing various street services; pedalling or hand-guiding vehicles to transport passengers and goods; driving animal-drawn vehicles or machinery. Supervision of other workers may be included.

#### 91 CLEANERS AND HELPERS

Cleaners and helpers perform various tasks in private households, hotels, offices, hospitals and other establishments, as well as in aircraft, trains coaches, trams and similar vehicles, in order to keep the interiors and fixtures clean, and launder and press garments and textiles by hand.

Tasks performed by workers in this sub-major group usually include: sweeping or vacuum cleaning, washing and polishing floors, furniture and other objects; taking care of linen and bed-making; helping with preparation of meals and cleaning in kitchens; washing and cleaning cars and windows; pressing or laundering garments and textiles by hand.

##### 911 DOMESTIC, HOTEL AND OFFICE CLEANERS AND HELPERS

Domestic, hotel and office cleaners and helpers sweep, vacuum clean, wash, polish, take care of household linen, purchase household supplies; perform various tasks in order to keep clean and tidy the interiors and fixtures of hotels, offices and other establishments, as well as of aircraft, trains, buses and similar vehicles.

Tasks performed usually include: sweeping or vacuum cleaning, washing and polishing floors, furniture and other objects in hotels, offices and other establishments; making beds, supplying towels, soap and related items; helping with preparation of meals and washing dishes; cleaning, disinfecting and deodorising kitchens, bathrooms and toilets.

##### 9111 DOMESTIC CLEANERS AND HELPERS

Domestic cleaners and helpers sweep, vacuum clean, wash and polish, take care of household linen, purchase household supplies, prepare food, serve meals and perform various other domestic duties.

Their tasks include:

- a) sweeping, vacuum-cleaning, polishing and washing floors and furniture, or washing windows and other fixtures;
- b) washing, ironing and mending linen and other textiles;
- c) washing dishes;
- d) helping with preparation, cooking and serving of meals and refreshments;
- e) purchasing food and various other household supplies;

- f) cleaning, disinfecting and deodorising kitchens, bathrooms and toilets; and
- g) cleaning windows and other glass surfaces.

**Examples:**

Domestic cleaner/helper	Housemaid
Houseboy	Market aide
Household attendant	

**9112 CLEANERS AND HELPERS IN OFFICES, HOTELS AND OTHER ESTABLISHMENTS**

Cleaners and helpers in offices, hotels and other establishments perform various cleaning tasks in order to keep clean and tidy the interiors and fixtures of hotels, offices and other establishments, as well as of aircraft, trains, buses and similar vehicles.

Their tasks include:

- a) sweeping or vacuum-cleaning, washing and polishing floors, furniture and other fixtures in buildings, coaches, buses, trams, trains and aircraft;
- b) making beds, cleaning bathrooms, supplying towels, soap and related items;
- c) cleaning kitchens and generally helping with kitchen work, including dishwashing; and
- d) picking up rubbish, emptying garbage containers and taking contents to waste areas to removal.

**Examples:**

Cleaner, aircraft	Cleaning crew, restaurants & food chains
Cleaner, hotel	Lavatory attendant
Cleaner, office	Room attendant
Cleaner, trains & buses	

**912 VEHICLE, WINDOW, LAUNDRY AND OTHER HAND CLEANING WORKERS**

Vehicle, window, laundry and other hand cleaning workers clean windows, showcases or other surfaces of buildings or vehicles and press, launder or dry-clean linen and other textiles by hand.

Tasks usually include: cleaning, washing and polishing cars; washing windows or other glass surfaces with water or various solutions, drying and polishing them; laundering and pressing linen, clothing, fabrics and similar articles by hand in a laundry or other establishments; cleaning by hand and with chemical solutions clothing, fabrics leather goods and similar articles in dry-cleaning or other establishments.

**9121 HAND LAUNDERERS AND PRESSERS**

Hand launderers and pressers launder, press or dry-clean garments, linen and other textiles by hand.

Their tasks include:

- a) laundering and pressing linen, clothing, fabrics and similar articles by hand in a laundry or other establishment;
- b) cleaning, by hand and with chemical solutions, clothing, fabrics, leather goods and similar articles, in a dry-cleaning or other establishment;
- c) replacing buttons and making minor repairs; and
- d) placing articles on shelves and hanging articles for delivery and collection.

**Examples:**

Drycleaner, hand  
Launderer, hand

Presser, hand  
Spotter (dry cleaner)

**9122 VEHICLE CLEANERS**

Vehicle cleaners, wash, clean and polish vehicles.

Their tasks include:

- a) cleaning, washing and polishing cars and other vehicles, by hand or using hand-held power tools;
- b) vacuuming vehicle interiors and dry cleaning carpets and upholstery;
- c) applying cleaning agents to remove stains from vehicle exteriors and interiors;
- d) washing tires and wheel arches and blackening tires;
- e) washing and polishing vehicle windows; and
- f) emptying and cleaning compartments in vehicles.

**Examples:**

Car detailer  
Vehicle washer (hand)  
Wiper

**9123 WINDOW CLEANERS**

Window cleaners wash and polish windows and other glass fittings.

Their tasks include:

- a) washing windows or other glass surfaces with water or various solutions, drying and polishing them;
- b) using ladders, swinging scaffolds, bosun's chairs, hydraulic bucket trucks and other equipment to reach and clean windows in multi – storey buildings; and
- c) selecting appropriate cleaning or polishing implement.

**Example:**

Window cleaner

**9129 OTHER CLEANING WORKERS**

Other cleaning workers clean surface, materials and objects, such as carpets, walls, swimming pools and cooling towers, using specialized cleaning equipment and chemicals.

Their tasks include:

- a) cleaning carpets and upholstered furniture using cleaning machines an their attachments;
- b) selecting and applying cleaning agents to remove stains from carpets;
- c) treating carpets with soil-repellent chemicals and deodorants, and treating for pests;
- d) cleaning stone walls, metal surfaces and fascias using high pressure water cleaners and solvents; and
- e) applying chemicals and high pressure cleaning methods to remove micro-organisms from water and filtration systems and using wet vacuums and other suction equipment to remove scale, accumulated dirt and other deposits from swimming pools, cooling tower components and drains.

**Examples:**

Carpet cleaner  
Cooling tower cleaner  
Graffiti cleaner

Swimming pool cleaner  
Water blater

**92 AGRICULTURAL, FORESTRY AND FISHERY LABORERS**

Agricultural, forestry and fishery laborers perform simple and routine tasks in the production of crops and livestock, cultivation and maintenance of gardens and parks, exploitation and conservation of forests, and conduct of aquaculture and fisheries operations.

Tasks performed usually include: digging, raking and shovelling using hand tools; loading, unloading and stacking supplies, produce and other materials; watering, thinning, weeding and tending crops by hand or using hand tools; planting, harvesting picking and collecting produce by hand; feeding, watering, and cleaning animals and keeping their quarters clean; monitoring livestock, reporting on their condition; preparing and operating nets, lines and other fishing tackle and deck equipment; grading, sorting, bunching and packing produce into containers; performing minor repairs on fixtures, buildings equipment, vessels and fences.

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**9211 CROP FARM LABORERS**

Crop farm laborers perform simple and routine tasks in the production of crops such as fruit, nuts, grains and vegetables on farms.

Their tasks include:

- a) digging and shovelling to clear ditches or for other purposes;
- b) loading and unloading supplies, produce and other materials;
- c) raking, pitching and stacking straw, hay and similar material;
- d) watering, thinning, and weeding crops by hand or using hand tools;
- e) picking fruit, nuts, vegetables and other crops;
- f) planting and harvesting field crops, such as rice, by hand;
- g) grading, sorting, bunching and packing produce into containers; and
- h) performing minor repairs on fixtures, buildings and fences.

**Examples:**

Cane planter/Sakada  
Farm worker

Farmhands laborer  
Fruit/vegetable picker

**9212 LIVESTOCK FARM LABORERS**

Livestock farm laborers perform simple and routine tasks in farm production of animals, including poultry and insects.

Their tasks include:

- a) digging and shovelling to clear ditches or for other purposes;
- b) loading and unloading supplies, produce and other materials;
- c) feeding, watering, and cleaning animals and keeping their quarters clean;
- d) monitoring livestock and reporting on their condition;
- e) assisting with maintaining the health and welfare of livestock;
- f) assisting with herding, droving and separating livestock for milking, shearing, transportation or slaughter and between pastures;
- g) collecting eggs and placing in incubators;
- h) raking, pitching, stacking and storing hay, straw and other types of animal feed and bedding grading, sorting, packing produce into containers; and
- i) performing minor repairs on fixtures, buildings and fences.

**Example:**

Livestock farm laborer

**9213 MIXED CROP AND LIVESTOCK FARM LABORERS**

Mixed crop and livestock farm laborers perform simple and routine tasks in farm production of both crops and animals.

Their tasks include:

- a) digging and shovelling to clear ditches or for other purposes;
- b) loading and unloading supplies, produce and other materials;
- c) raking, pitching and stacking straw, hay and similar material;
- d) watering, thinning, and weeding crops by hand or using hand tools;
- e) picking fruit, nuts, vegetables and other crops and collecting eggs;
- f) planting and harvesting field crops, such as rice, by hand;
- g) feeding, watering, and cleaning animals and keeping their quarters clean;
- h) monitoring livestock, reporting on their condition;
- i) assisting with herding, droving and separating livestock for milking, shearing, transportation or slaughter and between pastures;
- j) grading, sorting, bunching and packing produce into containers; and
- k) performing minor repairs on fixtures, buildings and fences.

**Example:**

Farm laborer

**9214 GARDEN AND HORTICULTURAL LABORERS**

Garden and horticultural laborers perform simple and routine tasks in operations to cultivate and maintain trees, shrubs, flowers and other plants in parks and private gardens, to produce saplings, bulbs and seeds, or grow vegetables and flowers by intensive cultivation techniques.

Their tasks include:

- a) loading, unloading and moving supplies, produce and equipment;
- b) preparing garden sites and plots using hand tools and simple machines;
- c) assisting with planting and transplanting flowers, shrubs, trees and lawns;



- d) maintaining gardens by watering, weeding and mowing lawns;
- e) cleaning gardens and removing rubbish;
- f) assisting with propagating, planting and potting seeds, bulbs and cuttings;
- g) tending plants by hand watering and weeding;
- h) harvesting and packaging plants for sale and transport; and
- i) performing minor repairs on fixtures, buildings and fences.

**Examples:**

Garden laborer	Horticultural laborer
Gardener	Lawn mower
Greenkeeper	Nursery laborer

**9215 FORESTRY LABORERS**

Forestry laborers perform simple and routine tasks to cultivate and maintain natural and plantation forests, and logging, felling and sawing trees.

Their tasks include:

- a) digging holes for tree planting;
- b) stacking and loading logs and timber;
- c) clearing undergrowth in forest stands and thinning young plantations;
- d) maintaining look-out for fires in forests;
- e) removing major branches and tree tops, trimming branches and sawing trunks into logs;
- f) operating and maintaining manual and hand held machine saws to fell trees and cut felled trees and branches into logs;
- g) collecting seeds, and planting seedlings; and
- h) performing minor repairs and maintenance of forest roads, buildings, facilities, and equipment.

**Examples:**

<i>Kaingeros</i>	Tree trapper
Laborer, forestry	Trapping laborer
Tree planter	Hunting laborer

**9216 FISHERY AND AQUACULTURE LABORERS**

Fishery and aquaculture laborers perform simple and routine tasks to cultivate, catch and harvest fish and seafood in aquaculture and inland, coastal and deep sea fishing operations.

Their tasks include:

- a) cleaning the sea-bed and feeding fish and molluscs that are being cultivated;
- b) gathering seaweed, sea mosses, clams and other molluscs;
- c) preparing nets, lines and other fishing tackle and other deck equipment;
- d) operating fishing gear to catch fish and other marine life;
- e) cleaning, sorting and packing fish and seafood in ice and salt and stowing catch in hold;
- f) cleaning deck surfaces and fish hold; and
- g) handling mooring lines during docking.

**Examples:**

<i>Bantay Dagat</i>	Pond aide
Fishery caretaker	Prawn hatchery worker
Laborer/helper, fishery	

## 93 LABORERS IN MINING, CONSTRUCTION, MANUFACTURING AND TRANSPORT

Laborers in mining, construction, manufacturing and transport perform simple and routine manual tasks in mining, quarrying, civil engineering, building, manufacturing, transport and storage operations, and operate human powered and animal drawn vehicles and machinery.

Task performed by workers in this sub-major group usually include: digging holes and spreading excavated materials, sand, soil, and gravel using hand-held tools; sorting, loading, unloading, moving, stacking and storing materials, equipment, products, supplies, baggage and cargo by hand; cleaning machinery, equipment, tools and work sites; packing and unpacking material and products and filling containers and shelves with products by hand; operating human powered and animal drawn vehicles and machinery.

### 931 MINING AND CONSTRUCTION LABORERS

Mining and construction laborers perform simple and routine manual tasks in mining, quarrying, civil engineering and building operations.

Tasks usually include: digging and filling holes and trenches using hand held tools; shovelling and spreading excavated materials, sand, soil, and gravel; sorting, loading, unloading, stacking and storing tools, materials and equipment and transporting them around work sites; cleaning machinery, equipment, tools and work sites and removing obstructions.

#### 9311 MINING AND QUARRYING LABORERS

Mining and quarrying laborers perform routine tasks in mining and quarrying operations.

Their tasks include:

- a) assisting miners and quarriers in maintaining machinery, equipment, and mine and quarry installations;
- b) assembling and dismantling mining equipment;
- c) removing tunnel supports from disused workings in mines and quarries;
- d) removing dangerous projections from mine and quarry workings;
- e) removing waste and serviceable materials and equipment from work areas after extraction activities have been completed, and clearing rock and mineral spills;
- f) cleaning machinery, equipment, tools, roadways and haulage tracks; and
- g) sorting, loading, unloading, stacking and storing tools, materials and supplies used by other mine workers.

#### Examples:

Digging/ quarry laborer  
Gold panner

Mining laborer  
Pan handler

#### 9312 CIVIL ENGINEERING LABORERS

Civil engineering laborers perform routine tasks in connection with the building and maintenance of roads, railways, dams and other civil engineering projects.

Their tasks include:

- a) digging and filling holes and trenches using hand held tools;
- b) shovelling and spreading gravel and related materials;
- c) trimming and cutting rocks and concrete and bitumen surfaces using jack-hammers;
- d) loading and unloading construction materials, excavated material and equipment and transporting them around construction sites using wheelbarrows and hand trucks; and

- e) cleaning worksites and removing obstructions.

**Examples:**

Construction laborer  
Maintenance laborer  
Road service worker

**9313 BUILDING CONSTRUCTION LABORERS**

Building construction laborers perform routine tasks in connection with building construction and demolition work.

Their tasks include:

- a) cleaning used building bricks and doing other simple work on demolition sites;
- b) mixing pouring and spreading materials such as concrete, plaster and mortar digging and filling holes and trenches using hand held tools;
- c) spreading sand, soil, gravel and similar materials;
- d) loading and unloading construction materials, excavated material and equipment and transporting them around construction sites using wheelbarrows, hods and hand trucks; and
- e) cleaning work sites and removing obstructions.

**Examples:**

Bricklayer's assistant	Laborer, construction building
Hod carrier	Laborer, demolition

**932 MANUFACTURING LABORERS**

Manufacturing laborers perform a variety of manual tasks in manufacturing, assist the work of machine operators and assemblers, and undertake product-sorting and hand-assembling of components.

Tasks performed usually include: packing material and various products by hand; filling bottles, boxes, bags and other containers with products by hand; labelling products and containers by hand; conveying goods, material, equipment to work area; cleaning machinery, equipment and tools; carrying out manual sorting of products or components; carrying out simple hand-assembling of components.

**9321 HAND PACKERS**

Hand packers weigh, pack and label materials and products by hand.

Their tasks include:

- a) weighing, wrapping, sealing and packing material and various products by hand;
- b) filling bottles, cans, boxes, bags and other containers with products by hand; and
- c) labelling products, packages and various containers by hand.

**Examples:**

Food packer	Packer, hand
Labeller, hand	Wrapper, hand
Laborer, manufacturing (hand)	

**9329 MANUFACTURING LABORERS NOT ELSEWHERE CLASSIFIED**

Manufacturing laborers not elsewhere classified assist the work of machine operators and assemblers and perform a variety of manual tasks in manufacturing, excluding packing and labelling finished products.

Their tasks include:

- a) conveying goods, material, equipment, etc. to work area, removing finished pieces;
- b) loading and unloading vehicles, trucks and trolleys;
- c) clearing machine blockages, cleaning machinery, equipment and tools; and
- d) carrying out manual sorting of products or components.

**Examples:**

Bottle sorter

Stacker

Laborer, assembling

Technician helper

Production helper

**933 TRANSPORT AND STORAGE LABORERS**

Transport and storage laborers propel cycles and similar vehicles and drive animal-drawn vehicles to transport passengers or goods, drive animal-drawn machinery, handle freight and baggage and stock shelves.

Tasks performed usually include: propelling cycles and similar vehicles to transport passengers or goods, driving animal-drawn vehicles to transport passengers or goods, driving animal-drawn machinery, carrying out freight handling by hand, and stocking shelves and display areas in stores.

**9331 HAND AND PEDAL VEHICLE DRIVERS**

Hand and pedal vehicle drivers propel cycles and similar vehicles to transport passengers or goods.

Their tasks include:

- a) loading or unloading goods, or assisting passengers in getting on or off a vehicle;
- b) moving vehicle in the desired direction with due regard to other traffic and traffic regulations;
- c) inspecting vehicle components to identify wear and damage;
- d) maintaining vehicle, making minor repairs and installing replacement parts; and
- e) collecting fares or charges.

**Examples:**

Driver, cycle rickshaw

Puller, rickshaw

Driver, pedal vehicle

Pusher, cart

**9332 DRIVERS OF ANIMAL-DRAWN VEHICLES AND MACHINERY**

Drivers of animal-drawn vehicles and machinery drive animal-drawn vehicles to transport passengers or goods, as well as animal-drawn machinery usually in connection with farming.

Their tasks include:

- a) harnessing animals and hitching them to vehicles or machinery;
- b) loading or unloading goods, or assisting passengers in getting on or off a vehicle;
- c) driving animals in the desired direction with due regard to other traffic and traffic regulations;

- d) collecting fares or charges;
- e) driving animals to haul wagons in mines or quarries;
- f) driving animals hitched to farm or other machinery;
- g) driving working elephants;
- h) maintaining vehicle or machinery, making minor repairs and installing replacement parts; and
- i) grooming and feeding animals.

**Examples:**

Driver, animal train

Driver, animal-drawn vehicle/road

**9333 FREIGHT HANDLERS**

Freight handlers carry out tasks such as packing, carrying, loading and unloading furniture and other household items, or loading and unloading ship and aircraft cargoes and other freight, or carrying and stacking goods in various warehouses.

Their tasks include:

- a) carrying goods to be loaded on or unloaded from vans, trucks, wagons, ships, or aircraft;
- b) loading and unloading grain, coal, sand and similar goods by placing them on conveyor-belts, pipes, etc.;
- c) connecting hoses between main shore installation pipes and tanks of barges, tankers and other ships to load and unload petroleum, liquefied gases and other liquids;
- d) carrying and stacking goods in warehouses and similar establishments; and
- e) sorting cargo prior to loading and unloading.

**Examples:**

Boat loader

Stevedore

Docker

Truck helper

Handler, freight

Warehouse porter

Railway &amp; road vehicle loader

**9334 SHELF FILLERS**

Shelf fillers stock shelves and display areas and keep stock clean and in order in supermarkets and other retail and wholesale shops.

Their tasks include:

- a) placing goods neatly in bins and on racks, and stacking bulky goods on floors;
- b) filling shelves with goods ensuring goods with the earliest use-by dates are at the front of shelves;
- c) removing goods with past due use-by dates;
- d) maintaining shelf order by removing stock belonging in a different location;
- e) noting what has been sold and collecting goods needed from the stockroom;
- f) obtaining articles for customers from shelf or stockroom;
- g) directing customers to location of articles sought; and
- h) receiving, opening, unpacking, and inspecting for damage merchandise from manufacturer or distributor.

**Examples:**

Filler, stock

Handler, stock

Store helper

## 94 941 FOOD PREPARATION ASSISTANTS

Food preparation assistants prepare and cook to order a small variety of pre-cooked food or beverages, clear tables, clean kitchen areas and wash dishes.

Tasks performed by workers usually include: preparing simple or pre-prepared foods and beverages such as sandwiches, pizzas, fish and chips, salads, and coffee; washing, cutting, measuring and mixing foods for cooking; operating cooking equipment such as grills, microwaves and deep-fat fryers; cleaning kitchens, food preparation areas and service areas; cleaning cooking and general utensils used in kitchens and restaurants .

### 9411 FAST FOOD PREPARERS

Fast food preparers prepare and cook to order a limited range of foods or beverages that involve simple preparation processes and a small number of ingredients. They may take orders from customers and serve at counters or tables.

Their tasks include:

- a) preparing simple or pre-prepared foods and beverages such as sandwiches, hamburgers, pizzas, fish and chips, salads, and coffee;
- b) washing, cutting, measuring and mixing foods for cooking;
- c) operating large-volume single-process cooking equipment such as grills, deep-fat fryers or griddles;
- d) re-heating pre-prepared food, cleaning food preparation areas, cooking surfaces and utensils;
- e) taking and serving food and beverage orders in eating places that specialize in fast service and carry-out food;
- f) ordering and taking delivery of fast food ingredients;
- g) maintaining sanitation, health, and safety standards in work areas;
- h) operating large-volume cooking equipment such as grills, deep-fat fryers, or griddles; and
- i) verifying that prepared food meets requirements for quality and quantity.

#### Examples:

Fast-food cook  
Short order cook

### 9412 KITCHEN HELPERS

Kitchen helpers clear tables, clean kitchen areas, wash dishes, preparing ingredients and perform other duties to assist workers who prepare or serve food and beverages.

Their tasks include:

- a) cleaning kitchens, food preparation areas and service areas;
- b) assisting cooks and chefs in preparation of food by washing, peeling, chopping, cutting up, measuring and mixing ingredients;
- c) assembling dishes for service;
- d) unpacking and storing supplies in refrigerators, cupboards and other storage areas;
- e) washing dishes and cooking utensils and putting them away;
- f) checking, transferring, weighing and storing supplies in refrigerators, cupboards and other storage areas; and
- g) preparing, cooking, toasting and heating simple food items.

**Examples:**

Commis helper  
Hand dish washer  
Kitchen assistant  
Kitchen hand

Kitchen helper  
Kitchen porter  
Kitchen steward  
Pantry attendant

**95 STREET AND RELATED SALES AND SERVICE WORKERS**

Street and related sales and service workers provide sell goods, excluding food for immediate consumptions, and provide a variety of services on streets and in other public places such as stations.

Tasks include: buying or making various items for sale; loading and unloading items for sale and transporting them; obtaining the materials necessary to perform services; approaching people on the street to offer goods or services; cleaning and polishing shoes; cleaning and polishing car windows; running errands; assisting drivers to find a parking place and ensuring car is not damaged during driver's absence; handing out leaflets and free newspapers; receiving immediate payment.

**951 9510 STREET AND RELATED SERVICE WORKERS**

Street and related service workers provide a variety of services on streets and in other public places, including cleaning shoes, washing car windows, running errands, looking after property, and providing other on-the-spot street services.

Their tasks include:

- a) obtaining the materials necessary to perform services;
- b) approaching people on the street to offer services;
- c) cleaning and polishing shoes;
- d) cleaning and polishing car windows;
- e) running errands;
- f) assisting drivers to find a parking place and ensuring car is not damaged during driver's absence;
- g) handing out leaflets and free newspapers; and
- h) receiving immediate payment.

**Examples:**

Car washer  
Car window washer  
Car guard  
Errand boy

Free newspaper distributor  
Leaflet distributor  
Shoe polisher/cleaner

**952 9520 STREET VENDORS (excluding food)**

Street vendors (excluding food) sell a usually limited range of goods (excluding food for immediate consumption) in streets and public places such as stations, cinemas or theatres.

Their tasks include:

- a) buying or receiving items for sale, or making simple items;
- b) loading and unloading basket, tray, push-cart, bicycle, hand truck or other vehicle, to transport goods to the streets or public places such as stations or cinemas;
- c) displaying goods or calling out to attract customer's attention;
- d) approaching potential customers on street and offering goods for sale; and
- e) receiving immediate payment.

**Examples:**

Candy vendor (street)  
Cigarette ambulant vendor  
Hawker

Newspaper ambulant vendor  
Peddler  
Street/ambulant non-food vendor

**96 REFUSE WORKERS AND OTHER ELEMENTARY WORKERS**

Refuse workers and other elementary workers collect garbage from buildings, yards, streets and other public places or keep streets and other public places or perform odd jobs for private households or establishments.

Tasks include: collecting, loading and unloading garbage; sweeping streets, parks and other public places; chopping firewood; carrying water; beating dust out of carpets and performing other odd-job tasks.

**961 REFUSE WORKERS**

Refuse workers collect, process and recycle garbage from buildings, yards, streets and other public places, or keep streets and other public places clean.

Tasks usually include: collecting, loading and unloading garbage; sweeping streets, parks and other public places; sorting and recycling garbage such as paper, glass, plastic or aluminium.

**9611 GARBAGE AND RECYCLING COLLECTORS**

Garbage collectors collect and remove rubbish and items for recycling from buildings, yards, streets and other places.

Their tasks include:

- a) collecting rubbish and recyclable materials and locating it into bins and garbage and recycling trucks;
- b) riding on or in garbage and recycling trucks;
- c) lifting garbage bins and emptying contents into trucks and larger containers; and
- d) unloading garbage and recycling trucks.

**Examples:**

Garbage collector  
Garbage dumper

**9612 REFUSE SORTERS**

Refuse sorters identify, collect and sort discarded items suitable for recycling at dump sites and recycling enterprises or in buildings, streets and other public places.

Their tasks include:

- a) searching through refuse and collecting items for recycling from dump sites, domestic, commercial and industrial premises or from public places such as streets;
- b) sorting cardboard, paper, glass, plastic, aluminium or other recyclable materials by type;
- c) placing recyclable items and materials in designated compartments and containers for storage or transportation;
- d) identifying and setting aside items of furniture, equipment, machinery, or components that are suitable for repair or re-use;
- e) transporting recyclable items by hand or using non-motorized vehicles; and



- f) selling recyclable or reusable materials.

**Examples:**

*Magbobote*

Recycling worker

Scrap merchant

Sorter, newspaper and other paper products

Waste picker

**9613 SWEEPERS AND RELATED LABORERS**

Sweepers and related laborers sweep and clean streets, parks, airports, stations and other public places.

Their tasks include:

- a) sweeping streets, parks, airports, stations and similar public places;
- b) beating dust out of carpets by using a carpet-beater; and
- c) cleaning rubbish, leaves from driveways and grounds.

**Examples:**

Market sweeper

Metro aide

Park sweeper

Street sweeper

**962 OTHER ELEMENTARY WORKERS**

Other elementary workers deliver and carry messages and packages, collect money and stock vending machines, read meters, collect water and firewood, collect and issue tickets for parking or events.

Tasks performed usually include: chopping wood, collecting water and firewood; delivering messages, packages and other items within or between establishments, or elsewhere; performing duties as a post-runner; issuing and collecting tickets and passes; calculating parking charges; filling storage areas of vending machines and collecting money from containers; reading electricity, gas or water meters and recording consumption.

**9621 MESSENGERS, PACKAGE DELIVERERS AND LUGGAGE PORTERS**

Messengers, package deliverers and luggage porters carry and deliver messages, packages and other items within an establishment or between establishments, to households and elsewhere, or carry luggage especially at hotels, stations and airports.

Their tasks include:

- a) delivering messages, packages and other items within an establishment or between establishments, or elsewhere;
- b) performing the duties of a post-runner;
- c) delivering various goods to and from enterprises, shops, households and other places;
- d) carrying and delivering luggage at hotels, stations, airports, and elsewhere;
- e) receiving and marking baggage by completing attaching claim checks;
- f) planning and following the most efficient route; and
- g) sorting items to be delivered according to the delivery route.

**Examples:**

Baggage handler

Bell boy

Delivery helper

Deliveryman/crew

Luggage porter

Messenger

Newspaper deliverer

Post runner

Leaflet deliverer

**9622 ODD JOB PERSONS**

Odd job persons clean, paint and maintain buildings, grounds and facilities, and undertake simple repairs.

Their tasks include:

- a) repairing broken windows, screens, doors, fences, barbecues, picnic tables, shelves, cupboards and other items;
- b) replacing defective items such as light bulbs;
- c) repairing and painting interior and exterior surfaces such as walls, ceilings and fences;
- d) adjusting doors and windows;
- e) replacing tap washers;
- f) putting up handrails and grab rails; and
- g) unloading coal or wood and putting it into cellars of private households or establishments.

**Examples:**

Handyperson  
Hotel useful  
Odd-job person

**9623 METER READERS AND VENDING-MACHINE COLLECTORS**

Meter readers and vending-machine collectors stock vending machines and collect money from them or from parking meters and other coin-boxes, or read electricity, gas or water meters.

Their tasks include:

- a) filling storage areas of vending machines and collecting money from their containers;
- b) collecting money from parking meters and similar coin-boxes;
- c) reading electricity, gas or water meters and recording consumption;
- d) keeping records of merchandise distributed and money collected;
- e) proceeding along established routes to take readings of meter dials;
- f) verifying readings in cases where consumption appears to be abnormal, and record possible reasons for fluctuations; and
- g) inspecting meters for unauthorized connections, defects, and damage such as broken seals.

**Examples:**

Meter reader  
Vending machine collector

**9624 WATER AND FIREWOODS COLLECTOR**

Water and firewood collectors collect water and firewood and transport them on foot or using hand or animal carts.

Their tasks include:

- a) cutting and collecting wood from forests for sale in market or as fuel or for own consumption;
- b) visiting forests or fields to pick pieces of dried wood from ground and arranging them in heaps;
- c) cutting decayed branches and trunks of trees using axe and hand -saw;
- d) tying collected wood into small faggots and carrying them or transporting them

- on a cart to the market for sale or to village or household for use;
- e) drawing water from wells, rivers or ponds etc. for domestic use; and
- f) collecting water in leather bags, buckets or other containers from taps, rivers, ponds or wells and delivering the water to work sites, the houses of clients or to own household for drinking, cleaning of drains or storage in tanks.

**Examples:**

Firewood collector

Water collector

**9629 ELEMENTARY WORKERS NOT ELSEWHERE CLASSIFIED**

This unit group covers elementary workers not classified elsewhere in major group 9, Elementary workers. For instance, the group includes those who issue and collect parking or admission tickets, provide personal items to patrons or customers in cloak rooms and assist patrons at entertainment events.

Their tasks include:

- a) selling and collecting admission tickets and passes from patrons at entertainment events or collecting tags from patrons;
- b) examining tickets or passes to verify authenticity, using criteria such as colour and date issued;
- c) guiding patrons to exits or providing other instructions or assistance in case of emergency;
- d) directing patrons to restroom, concession stands and telephones;
- e) directing vehicle drivers to parking spaces;
- f) patrolling parking areas in order to prevent vehicle damage and vehicle property thefts;
- g) calculating parking charges, and collecting fees from customers; and
- h) assigning dressing room facilities, locker space, or clothing containers to patrons of athletic or bathing establishments.

**Examples:**

Barker

Cloak room attendant

Fairground attendant

Golf caddie

Parking attendant

Pin boy

Recreation facilities attendant/aide

Ticket collectors

Usher

## MAJOR GROUP 0

### ARMED FORCES OCCUPATIONS, NONGAINFUL ACTIVITIES AND SPECIAL OCCUPATIONS

Armed forces occupations include all jobs held by members of the armed forces. Members of the armed forces are those personnel who are currently serving in the armed forces, including auxiliary services, whether on a voluntary or compulsory basis, and who are not free to accept civilian employment and are subject to military discipline. Included are regular members of the army, navy, air force and other military services, as well as conscripts enrolled for military training or other service for a specified period.

Excluded from this group are:

Jobs held by persons in civilian employment of government establishments concerned with defense issues; police (other than military police); customs inspectors and members of border or other armed civilian services.

Many jobs performed by members of the armed forces are similar, in terms of the nature of the work performed, to civilian occupations such as medical doctors, radio operators, cooks, secretaries and heavy truck drivers. Conceptually, it may be appropriate therefore, to classify such jobs in the armed forces with similar civilian jobs. This approach is adopted in several national occupation classifications. Typically such classifications also identify a number of military specific occupational groups. In many countries, however, it is not possible to produce information about the nature of the work performed by members of the armed forces. In adapting ISCO-08 for national purposes countries may wish, therefore, to consider what approach best suits their circumstances and user needs. For purposes of international comparability, however, where data pertaining to members of the armed forces are reported and classified by occupation, they should be included where possible in ISCO-08 major group 0, Armed forces occupations.

#### 01 011 0110 COMMISSIONED ARMED FORCES OFFICERS

Commissioned armed forces officers provide leadership and management to organizational units in the armed forces and/or perform similar tasks to those performed in a variety of civilian occupations outside the armed forces. This group includes all members of the armed forces holding the rank of second lieutenant (or equivalent) or higher.

##### Examples:

Admiral	Lieutenant commander (navy)
Admiral of the fleet	Lieutenant, flight
Air commodore	Major (army)
Air marshal	Midshipman
Brigadier (army)	Naval officer (military)
Captain (air force, army, navy)	Navy commander
Colonel (army)	Officer cadet (armed forces)
Commodore (navy)	Officer cadet (army)
Field marshal	Pilot officer
Flying officer (military)	Second lieutenant (army)
General (army)	Squadron leader
Group captain, (air force)	Sublieutenant (navy)
Lieutenant	Wing commander
Lieutenant colonel (army)	

**02 021 0210 NON-COMMISSIONED ARMED FORCES OFFICERS**

Non-commissioned armed forces officers enforce military discipline and supervise the activities of those employed in Armed forces occupations, other ranks, and/or perform similar tasks to those performed in a variety of civilian occupations outside the armed forces. This group includes members of the armed forces holding ranks such as sergeant, warrant officer and sergeant major.

**Examples:**

Boatswain (navy)	Sergeant (army)
Flight sergeant	Sergeant major
Master Sergeant	Warrant officer
Quarter master	

**03 031 0310 ARMED FORCES OCCUPATIONS, OTHER RANKS**

Armed forces occupations, other ranks include all conscripted and non-conscripted members of the armed forces except commissioned and non-commissioned officers. They perform specific military tasks and/or perform similar tasks to those performed in a variety of civilian occupations outside the armed forces.

**Examples:**

Airman	Gunners mate
Bombardier	Infantryman/woman
Corporal (air force)	Paratrooper
Corporal (army)	Rifleman/woman
Coxswain (navy)	Seaman (navy)

**09 NON-GAINFUL ACTIVITIES AND SPECIAL OCCUPATIONS****09 091 0910 HOUSEKEEPER, OWN HOME****092 PENSIONER, RETIRED OR DISABLED****0921** PENSIONER**0922** RETIRED**0923** DISABLED**093 STUDENT OR DEPENDENT****0931** STUDENT**0932** DEPENDENT**094 0940 NEW WORKERS SEEKING EMPLOYMENT****095 0950 EXPERIENCED WORKERS SEEKING FOR REEMPLOYMENT**



# **Alphabetical Listing of Occupation with Corresponding Four-Digit Code**





**A**

6116	Abaca Farmer	1222	Advertising Director
8350	Able Seaman	5241	Advertising Model
7314	Abrasive Wheel Molder	3339	Advertising Salesperson
8181	Abrasives Maker	2431	Advertising Specialist
7312	Accordion Maker	3153	Aerial Crop Sprayer
2411	Accountant	3431	Aerial Photographer
4311	Accounting And Bookkeeping Clerks	2165	Aerial Surveyor
3313	Accounting Assistant	2659	Aerialist
3313	Accounting Associate	3423	Aerobics Instructor
1211	Accounting Manager	2142	Aerodrome Construction Engineer
3313	Accounting Officer	7232	Aeromechanic
4311	Accounting Sales Clerk	2144	Aeronautical Engineer
4311	Accounts Clerk	3115	Aeronautics Engineering Technician
3313	Accounts Payable Associate	6117	African Oil Palm Farmer
4311	Accounts Payable Practitioner	3322	After-Sale Service Adviser
3313	Accounts Specialist	6222	Agar-Agar Producers
3259	Acupuncture Technician	1343	Aged Care Home Director
2659	Acrobat	1343	Aged Care Service Managers
2655	Actor/Actress ( Stage, Theater, Motion Picture & Radio)	1311	Agricultural And Forestry Production Managers
2121	Actuarial Analyst	7233	Agricultural And Industrial Machinery Mechanics And Repairers
3314	Actuarial Assistant	2144	Agricultural Engineer
4312	Actuarial Clerk	3142	Agricultural Extension Officer
2121	Actuarial Researcher	3359	Agricultural Inspector
2512	Actuarial Systems Program Analyst	7233	Agricultural Machinery Fitter
2121	Actuary	7233	Agricultural Machinery Mechanic
3211	Acupressure Technician	3142	Agricultural Products Inspector
3255	Acupressure Therapist	3142	Agricultural Technician
2230	Acupuncturist	1311	Agriculture General Manager
2635	Addictions Counselor	2132	Agriculturist
7421	Adding Machine Technician	2132	Agronomist
2611	Adjudicator	3142	Agronomy Technician
1211	Administration Manager	0110	Air Commodore
3343	Administrative And Executive Secretaries	7127	Air Conditioning And Refrigeration Mechanics
4110	Administrative Clerk	7127	Air Conditioning Equipment Mechanic
2265	Administrative Dietician	7127	Air Conditioning Plant Installer
3343	Administrative Secretary	7127	Air Conditioning Plant Mechanic
1219	Administrative Services Manager	7127	Air Duct Worker
3341	Administrative Supervisor	0110	Air Marshal
1112	Administrator/Deputy Administrator	3154	Air Navigation System Specialist
0110	Admiral	2133	Air Pollution Analyst
0110	Admiral Of The Fleet	2143	Air Pollution Control Engineer
4229	Admission Clerk	3154	Air Traffic Control Specialist, Station
1222	Ads & Promo Assistant Manager	3154	Air Traffic Control Specialist, Tower
2359	Adult Literacy Teacher	3154	Air Traffic Controller
2240	Advanced Care Paramedic	3154	Air Traffic Coordinator
1222	Advertising Manager	3155	Air Traffic Safety Electronics Technicians
2431	Advertising Account Executive	3155	Air Traffic Safety Engineer
2431	Advertising And Marketing Professionals	3155	Air Traffic Safety Technician
1222	Advertising And Public Relations Managers	3153	Air Transport Service Supervisors
2431	Advertising Assistant	3113	Airconditioning Technician
4419	Advertising Clerk	5411	Aircraft Accident Firefighter
		8211	Aircraft Assembler
		5111	Aircraft Cabin Attendant

4323	Aircraft Dispatcher	2166	Animator
7412	Aircraft Electrician	8121	Annealer
8211	Aircraft Engine Assembler	2656	Announcer, Radio/Television
7232	Aircraft Engine Fitter	2656	Announcers On Radio, Television And Other Media
7232	Aircraft Engine Mechanics And Repairers	4223	Answering Service Operator
7126	Aircraft Fitter (Pipe And Tube)	2632	Anthropologist
7421	Aircraft Maintenance Engineer (Avionics)	6128	Apiarists And Sericulturists
3153	Aircraft Maintenance Officer	6128	Apiary Farmer (Apiarist)
7232	Aircraft Maintenance Supervisor	2521	Application Database Administrator
3115	Aircraft Maintenance Technician	1330	Application Development Manager
7232	Aircraft Mechanic	2514	Application Programmer
7132	Aircraft Painter	3315	Appraiser
3153	Aircraft Pilot	3142	Aquacultural Technician
3153	Aircraft Pilots And Related Associate Professionals	1312	Aquaculture And Fisheries Production Managers
7232	Aircraft Production/Maintenance Assistant	1312	Aquaculture Production Manager
7232	Aircraft Restorer	2132	Aquaculturist
7215	Aircraft Rigger	6225	Aquarium Fish Farm Operator (Goldfish, Corals, Etc.)
7232	Aircraft Service Technician	2131	Aquatic Biologist
3155	Airfield Power Technician	2632	Archaeologist
3154	Airfield Services Officer	2161	Architectural Engineer
7232	Airframe And Power Plant Mechanic	3118	Architectural-Designer
7232	Airframe Fitter	1349	Archives Manager
5111	Airlines Steward And Hostess	2621	Archivist
0310	Airman	2621	Archivists And Curators
7232	Airmotive & Equipment Mechanic	3122	Area Coordinator, Manufacturing
5111	Airport Attendant	1346	Area Manager (Insurance)
3154	Airport Control Operator	7412	Armature Builder
2142	Airport Engineer	8212	Armature/Coil Assembler
3154	Airport Operation Assistant	0310	Armed Forces Occupations, Other Ranks
3154	Airways Communicator	2621	Art Gallery Curator
6225	Algae Cultivator	5113	Art Gallery Guide
7533	Alterer	1349	Art Gallery Manager
8121	Aluminum Cutting Machine Operator	8113	Artesian Well Driller
1112	Ambassador	3240	Artificial Inseminator
8322	Ambulance Driver	3259	Artificial Limb And Brace Maker
3258	Ambulance Officer	3435	Artistic And Cultural Associate Professional Not Elsewhere Classified
3258	Ambulance Paramedic	2651	Artistic Painter
3258	Ambulance Workers	3118	Artist-Illustrator
8219	Ammunition Assembler	5241	Artist'S Model
8131	Ammunition Products Machine Operator	2269	Arts Therapist
1431	Amusement/ Theme Park Manager	7121	Asphalt Roofer
2212	Anaesthesiologist	8219	Assemblers Not Elsewhere Classified
2221	Anaesthetic Nurse	8211	Assembly Line Operator (Automated)
2212	Anaesthetist	3122	Assembly Supervisor
2113	Analytical Chemist	8211	Assembly-Line Worker (Agricultural Machinery)
5419	Animal Control Officer	8211	Assembly-Line Worker (Aircraft Engine)
6228	Animal Keeper	8211	Assembly-Line Worker (Heavy Machinery)
2250	Animal Nutritionist	8171	Assembly-Line/Automated Operator
2250	Animal Pathologist	2121	Assistant Actuary
6129	Animal Producers Not Elsewhere Classified	3434	Assistant Chef
2132	Animal Scientist		
3142	Animal Technician		
2513	Animation Programmer		

3343 Assistant Correspondence  
 3222 Assistant Midwife  
 3221 Assistant Nurse  
 1345 Assistant Principal  
 2310 Assistant Professor  
 1324 Assistant Shipping Manager  
 1212 Assistant Training Manager  
 3321 Assistant Underwriter  
 3313 Associate Accountant  
 3313 Associate Auditor  
 2612 Associate Judge  
 3222 Associate Professional Midwife  
 3221 Associate Professional Nurse  
 5161 Astrologer  
 5161 Astrologers, Fortune-Tellers And Related Workers  
 2111 Astronomer  
 2111 Astronomical Scientist  
 3421 Athletes And Sports Players  
 3421 Athletes, All Sports  
 1112 Attaché  
 5142 Attendant (Sauna Bath, Body Massage/Scrub, Foot/Hand Spa)  
 2611 Attorney  
 3339 Auctioneer  
 7421 Audio Electronics Service/Repairman  
 3114 Audio Visual Systems Technician  
 2266 Audiologist  
 2266 Audiologists And Speech Therapist  
 2221 Audiometry Nurse  
 3521 Audio-Visual Operator  
 2351 Audio-Visual Teaching Aid Specialist  
 2413 Audit Analyst  
 3313 Audit Assistant  
 4311 Audit Clerk  
 3313 Audit Examiner  
 2411 Audit/Financial Examiner  
 2411 Auditor  
 2641 Author  
 2641 Authors And Related Writers  
 7213 Auto Body Repairman  
 4323 Auto Fuel Dispatcher  
 3115 Auto Service Technician  
 2519 Autocad Designer  
 3511 Autocad Operator  
 7125 Autoglazier  
 3139 Automated Assembly Line Operator  
 7421 Automated Teller Machines Mechanic  
 7231 Automobile Mechanic  
 7213 Automotive Body Builder  
 7231 Automotive Brakes Systems Service Technician  
 2144 Automotive Engineer  
 7412 Automotive Equipment Inspector  
 7231 Automotive Mechanic (Light Duty)  
 7132 Automotive Painter

2320 Automotive Technology Instructor  
 7231 Automotive/Train Mechanic  
 5163 Autopsy Attendant  
 8212 Auxiliary Machine Operator  
 3221 Auxillary Nurse  
 3153 Aviation Group Commander  
 7232 Aviation Maintenance Technician  
 3154 Aviation Safety Regulation Officer  
 5414 Aviation Security Guard  
 7421 Avionics Technician  
 2230 Ayuverdic Practitioner

## B

5311 Babysitter  
 2212 Bacteriological Scientist  
 2131 Bacteriologist  
 3141 Bacteriology Technician  
 9621 Baggage Handler  
 5414 Bailiff  
 7512 Baker (General)  
 7512 Bakers, Pastry-Cooks And Confectionery Makers  
 8160 Bakery Products Machine Operator  
 2653 Ballet/Belly Dancer  
 2119 Ballistician  
 6117 Banana Farmer  
 2652 Band Leader  
 1431 Band Manager  
 8172 Band-Saw Operator  
 6221 Bangus Farm Producer  
 2411 Bank Accountant  
 4211 Bank Cashier  
 4214 Bank Collector  
 1346 Bank Manager  
 3313 Bank Reconciliation Assistant  
 4211 Bank Teller  
 4211 Bank Tellers And Related Clerks  
 9216 Bantay Dagat  
 5132 Bar Helper  
 5132 Bar Keeper  
 3412 Barangay Affairs Worker  
 1113 Barangay Chairman/Captain  
 5321 Barangay Health Aide  
 1113 Barangay Secretary  
 1113 Barangay Treasurer  
 5141 Barber  
 5141 Barber-Hairdresser  
 8350 Bargeman  
 8183 Barista  
 9629 Barker  
 5132 Barmaid  
 5132 Bartender  
 7317 Basket Maker  
 7317 Basketry Weaver

2652	Bass Player	8350	Boatswain
5142	Bath Attendant	0210	Boatswain (Navy)
5419	Beach Patrolman/Patrolwoman	3435	Body Artist
8152	Beam Warper	7212	Body Welder
8171	Beater Operator (Paper And Pulp)	5414	Bodyguard
5142	Beautician	8111	Bogger Operator
5142	Beauticians And Related Workers	7124	Boiler And Pipe Insulation Worker
5142	Beauty Consultant	8182	Boiler Fireman
5152	Bed And Breakfast Operator	8182	Boiler Operator
9621	Bell Boy	3115	Boiler Technician
7211	Bench Molder	8182	Boiler Tender
1212	Benefits Manager	7213	Boilersmith
3353	Benefits Officer	0310	Bombardier
4416	Benefits Service Practitioner	2413	Bond Analyst
2635	Bereavement Counsellor	3230	Bonesetter
2622	Bibliographer	2641	Book Editor
7234	Bicycle And Related Repairers	7323	Book Embosser (Hand And Machine)
8219	Bicycle Assembler	7323	Bookbinder (Hand And Machine)
7234	Bicycle Mechanic	3313	Bookkeeper
7234	Bicycle Repairer	4311	Bookkeeping Clerk
4214	Bill And Account Collector	4212	Bookmaker
4214	Bill Courier	4212	Bookmakers, Croupiers/Dealers And Related Gaming Workers
1431	Billiards Or Pool Hall Manager	3351	Border Inspector
4214	Billing Clerk	8113	Bore Sinker
3344	Billing Secretary	8113	Boring Equipment/Wells Operator
2131	Biochemist	7223	Boring Machine-Setter Operator
3141	Biochemistry Technician	2131	Botanist
3142	Biological And Feed Products Inspector	8183	Bottle Filler
3212	Biological Technician	9329	Bottle Sorter
2131	Biologist	8183	Bottling Machine-Operator
2131	Biologists, Botanists, Zoologists And Related Scientists	5414	Bouncer
2149	Biomedical Engineer	8219	Box Builder
2131	Biomedical Researcher	8159	Braid Making Machine Operator
3212	Biomedical Technician	1346	Branch Manager
2122	Biometrician	7212	Brazer
2131	Biophysicist	7512	Bread Baker
2131	Biotechnologist	8160	Bread Production Machine Operator
5321	Birth Assistant (Clinic Or Hospital)	8160	Brewers And Wine Machine Operator
6116	Black Pepper Farmer	7515	Brewmaster
7221	Blacksmith	8181	Brick And Tile Kiln-Operator
7221	Blacksmiths, Hammersmiths And Forging Press Workers	7314	Brick And Tile Molder
3135	Blast Furnace Operator	7112	Bricklayers And Related Workers
7542	Blaster	9313	Bricklayer'S Assistant
8154	Bleaching Machine Operator	8343	Bridge Or Gantry Crane Operator
8154	Bleaching, Dyeing And Fabric Cleaning Machine Operators	2142	Bridge/Drainage Engineer
3134	Blender/Petroleum And Natural Gas Refining (Ethyl) Operator	0110	Brigadier (Army)
7112	Blocklayer	2153	Broadcast Engineer
3212	Blood-Bank Technician	3114	Broadcast Operations Technician
7321	Blueprint Machine Operator	1222	Broadcast Stations Manager
3343	Board Secretary	3521	Broadcast Technician
9333	Boat Loader	3521	Broadcasting And Audio-Visual Technicians
8350	Boatman	3521	Broadcasting And Telecommunications Equipment Operators
		3521	Broadcasting Automation System Support

3521 Broadcasting Equipment Operator  
 3324 Broker Assistant  
 4312 Brokerage Clerk  
 7317 Broom Maker (Hand)  
 7317 Brush Maker (Hand)  
 7316 Brush Painter  
 4311 Budgeting Aide  
 4311 Budgeting Clerk  
 1211 Budgeting Manager  
 7224 Buffing Machine Operator  
 7411 Building And Related Electricians  
 2161 Building Architect  
 5153 Building Caretakers  
 2142 Building Construction Engineer  
 9313 Building Construction Laborers  
 3123 Building Construction Supervisor  
 7411 Building Electrician  
 7119 Building Frame And Related Trades  
 Workers Not Elsewhere Classified  
 7125 Building Glazier  
 3112 Building Inspector  
 7119 Building Maintenance Man  
 7131 Building Painter  
 3354 Building Permit (Licensing) Officer  
 7133 Building Structure Cleaners  
 3112 Building Surveyor  
 7119 Building Wrecker  
 8342 Bulldozer Operator  
 8331 Bus And Tram Drivers  
 5112 Bus Conductor  
 8331 Bus Driver  
 5112 Bus Inspector  
 2511 Business Analyst (It)  
 8331 Bus And Tram Drivers  
 2421 Business Consultant  
 2431 Business Development/Marketing  
 Specialist  
 3354 Business Permit (Licensing Officer  
 3339 Business Services Agents Not Elsewhere  
 Classified  
 1219 Business Services And Administration  
 Managers Not Elsewhere Classified  
 1211 Business Services Managing-Proprietor  
 3339 Business Services Salesman  
 7511 Butcher (Abattoir)  
 7511 Butcher (General)  
 7511 Butcher (Hotel And Restaurant)  
 7511 Butchers, Fishmongers And Related Food  
 Preparers  
 5152 Butler  
 7513 Butter Maker  
 6128 Butterfly Breeder  
 3323 Buyer

## C

2514 C Language Programmer  
 3211 C T Scan Technologist  
 6113 Cabbage Farmer  
 1112 Cabinet Secretary/Under  
 Secretary/Assistant Secretary  
 7522 Cabinet/Furniture-Maker  
 7522 Cabinet-Makers And Related Workers  
 7413 Cable And Line Installer  
 8189 Cable And Rope Splicing Machine  
 Operator  
 5112 Cable Car Conductor  
 8113 Cable Driller (Gas/Oil Well)  
 7413 Cable Pulling  
 7215 Cable Splicer  
 7413 Cable Television Lineman  
 2152 Cad/Cam Engineer  
 2165 Cadastral Surveyor  
 1412 Cafe Manager  
 5246 Cafeteria Counter Attendant  
 7512 Cake Decorator  
 4222 Call Center Agent  
 5244 Call Center Agent (Sales And Marketing)  
 4222 Call Center Assistant/Representative  
 5244 Call Center Salesperson  
 7231 Camber Mechanic  
 3521 Camera Control Unit Technician  
 3521 Camera Operator  
 3521 Cameraman/Woman (Motion Picture)  
 3521 Cameraman/Woman (Video)  
 1439 Camp Site Manager  
 7319 Candle Making  
 8131 Candle Production Machine Operator  
 9520 Candy Vendor (Street)  
 9211 Cane Planter/Sakada  
 8183 Canning Food Machine Operator  
 8183 Canning Fruit Machine Operator  
 8160 Canning Machine Operator  
 8183 Canning Vegetable Machine Operator  
 3322 Canvasser  
 0110 Captain (Air Force, Army, Navy)  
 3152 Captain, Ship/Sea  
 9122 Car Detailer  
 9510 Car Guard  
 9510 Car Washer  
 9510 Car Window Washer  
 8322 Car, Taxi And Van Drivers  
 6121 Carabao Farmer  
 6222 Carageenan Producers  
 1439 Caravan Park Manager  
 7224 Card Grinder

8171	Cardboard Lining Machine Operator	2651	Ceramic Artist
2221	Cardiac Holding Unit Nurse	2145	Ceramic Engineer
2221	Cardiac Surgical Nurse	2113	Ceramics And Glass Technologist
2212	Cardiologist	7316	Ceramics Decorator
2221	Cardiovascular Telemetry Nurse	7316	Ceramics Dipper
4223	Career Relation Payphone And Access Services	8181	Ceramics Kiln Operator
2423	Careers Adviser	7316	Ceramics Painter
5322	Caregiver (Home-Based)	8181	Ceramics Painting Machine Operator
5321	Caregiver (Institution-Based)	8181	Ceramics Plant Operator
5153	Caretaker	7316	Ceramics Spray Painter
4323	Cargo Checker	1112	Chairman/Vice Chairman
4321	Cargo Clerk	5151	Chambermaid
7115	Carpenter, Finish	5162	Chaperon
7115	Carpenter, General	2636	Chaplain
7115	Carpenter, Rough	6213	Charcoal Maker
7115	Carpenters And Joiners	6213	Charcoal Makers And Related Workers
9129	Carpet Cleaner	4214	Charity Collector
7122	Carpet Layer	2411	Chartered Accountant
7318	Carpet Weaver (Hand)	8322	Chauffeur/Family Driver
2165	Cartographer	3154	Check Flight Radio Operator
2165	Cartographer And Surveyors	5230	Checkout Operator
2651	Cartoonist	5222	Checkout Supervisor
7522	Cartwright	7513	Cheese Maker
7523	Carving Machine Operator (Wood)	3434	Chef
8112	Carving Stone Machine Operator	3111	Chemical And Physical Science Technicians
8121	Case-Hardener	8131	Chemical And Related Processes Kiln Operator
5230	Cash Clerk	8159	Chemical Bleacher Operator
5230	Cash Register Clerk	2145	Chemical Engineer
6117	Cashew Nut Farmer	3116	Chemical Engineering Estimator
5230	Cashier	3116	Chemical Engineering Technician
5230	Cashiers And Ticket Clerks	8131	Chemical Heat Treating Operator
1431	Casino Manager	3116	Chemical Laboratory Technician
6113	Cassava Farmer	2145	Chemical Process Engineer
8114	Cast Concrete Product Maker	3133	Chemical Process Technician
6117	Castañas Farmer	3133	Chemical Processing Plant Controllers
8114	Cast-Concrete Products Machine Operator	8159	Chemical Processing Plant Operator, N.E.C.
7223	Casting Machine Operator	8131	Chemical Products Plant And Machine Operators
3135	Casting Metal Machine Operator	3133	Chemical-Filtering And Separating Equipment Operator
8114	Cast-Stone Products Machine Operator	3133	Chemical-Heat-Treating-Plant Operator
2622	Cataloguer	3133	Chemical-Still And Reactor Operator
3413	Catechist	2113	Chemist (General)
1411	Catering Services General Manager	3111	Chemistry Technician
1412	Catering Services Manager/Proprietor	2221	Chemotherapy Nurse
6121	Cattle Farmer	6124	Chicken Egg Layer
6121	Cattle Herder	6124	Chicken Farmer
3521	Cctv Operator	6124	Chicken Meat Producer
3114	Cctv/Evidence Custodian	1345	Chief Education Supervisor
2131	Cell Geneticist	1222	Chief Communication Development Officer (Government)
7114	Cement Finisher	1120	Chief Executive Officer
8114	Cement Production Plant Operator	1330	Chief Information Officer
8114	Cement, Stone And Other Mineral Products Machine Operators		
3135	Central Control Caster		
7422	Central Office Equipment Installer		

2612	Chief Justice	5151	Cleaning And Housekeeping Supervisors In Offices, Hotels And Other Establishments
3152	Chief Mate		
7231	Chief Mechanic/Technician		
1112	Chief Of Staff	9112	Cleaning Crew, Restaurants & Food Chains
1120	Chief Operation Officer	1219	Cleaning Services Manager
2635	Child And Youth Counsellor	1219	Cleaning Services Managing-Proprietor
1341	Child Care Centre Manager	3331	Clearing Agent
1341	Child Care Service Managers	3331	Clearing And Forwarding Agents
5311	Child Care Worker	4323	Clerical Controller (Transport Service)
7112	Chimney Builder	4323	Clerical Dispatcher (Transport Service)
7133	Chimney Sweep	3341	Clerical Supervisor
2230	Chinese Herbal Medicine Practitioner	4419	Clerical Support Workers Not Elsewhere Classified
8171	Chipper/Paper Pulp Operator	3411	Clerk Of Court/Judge/Law
3259	Chiropractor	3411	Clerk Of The Tribunal
7512	Chocolate Maker	3112	Clerk Of Works
8160	Chocolate Production Machine Operator	7536	Clicker Cutter (Machine)
2654	Choir Director	4229	Client Information Workers Not Elsewhere Classified
2652	Choral Group Singer	2112	Climatologist
2653	Choreographer	3256	Clinical Assistant
7514	Chutney Maker	3252	Clinical Coder
8160	Cigar And Cigarettes Production Machine Operator	2265	Clinical Dietician
7516	Cigar/Cigarettes Maker	1342	Clinical Director
9520	Cigarette Ambulant Vendor	2310	Clinical Instructor
8160	Cigarette Maker, Machine	2221	Clinical Nurse
1431	Cinema Manager	2221	Clinical Nurse Consultant
3521	Cinema Projectionist	2240	Clinical Officer (Paramedical)
2654	Cinematographer	2634	Clinical Psychologist
8172	Circular-Saw Operator	9629	Cloak Room Attendant
1222	Circulation Manager	7318	Cloth Weaver (Hand)
6117	Citrus Farmer	7318	Cloth Weaver (Jacquard Loom)
1112	City Administrator	2659	Clown
2164	City Planner	5169	Club Host/Hostess
1345	City School Superintendent	7522	Coach Body Builder
1111	City/ Municipal Councilor	3422	Coach, Sports
2142	Civil Engineer	2146	Coal Mining Engineer
9312	Civil Engineering Laborers	8112	Coal Washer
1323	Civil Engineering Project Manager	8159	Coal-Gas Maker
3112	Civil Engineering Technician	6226	Coastal Fishery Skipper
1112	Civil Registrar	6226	Coastal Waters Workers
3343	Civil Secretary	3211	Cobalt Machine Technician
5414	Civilian Guard	7536	Cobbler
3315	Claims Assessor	2514	Cobol Programmer
3315	Claims Evaluator	8160	Cocoa Processing Machine Operator
3315	Claims Inspector	6115	Coconut Farmers
3315	Claims Verifier	4413	Coding Clerk
7314	Clay Extruding-Press Operator	4413	Coding, Proof-Reading And Related Clerks
8181	Clay Mixer	6117	Coffee And Cacao Farmer
8181	Clay Slip Maker	8160	Coffee Processing Machine Operator
9112	Cleaner, Aircraft	7515	Coffee Taster
7133	Cleaner, Building Exteriors	8212	Coil Winder (Hand/Machine)
9112	Cleaner, Hotel	8159	Coke Burner
9112	Cleaner, Office	8159	Coke Production Plant Operator
9112	Cleaner, Trains & Buses		
9112	Cleaners And Helpers In Offices, Hotels And Other Establishments		

7323	Collator/Tabulator	3512	Computer Engineering Assistant
4214	Collection Clerk	2512	Computer Engineers And Related Professionals
1345	College Administrator	7422	Computer Equipment Fitter
1345	College Dean	2166	Computer Games Designer
2310	College Professor	2513	Computer Games Programmer
0110	Colonel (Army)	2513	Computer Graphic Artist
2642	Columnist	3511	Computer Graphic Layout Operator
8152	Combing Textile Fibers Machine Operator	2152	Computer Hardware Engineer
2656	Commentator, Radio/Television	3512	Computer Help Desk Operator
2651	Commercial Artist	2320	Computer Instructor
3432	Commercial Decorator And Designer	4132	Computer Keyer
3431	Commercial Photographer	3511	Computer Maintenance Specialist
3322	Commercial Sales Representatives	3511	Computer Maintenance Technologist
3322	Commercial Traveller	3513	Computer Network And Systems Technicians
3434	Commis Chef	2523	Computer Network Professionals
9412	Commis Helper	3513	Computer Network Technician
1420	Commissary Manager	3511	Computer Operator
0110	Commissioned Armed Forces Officers	3511	Computer Peripheral Equipment Operator
1112	Commissioner/Deputy Commissioner/Assistant Commissioner	3512	Computer Programming Assistant
3324	Commodities Broker	2511	Computer Scientist
3324	Commodity Futures Dealer	7422	Computer Service/Repairman
0110	Commodore (Navy)	2522	Computer System Engineer
2523	Communication Analyst (Computer)	2522	Computer Systems Administrator
2152	Communication Development Engineer	3512	Computer Systems Analysis Assistant
7422	Communication Rigger	2330	Computer Teacher (Secondary Education)
4223	Communication Telephone Operator	3511	Computer Technicians
3512	Communications Assistant (Ict)	2356	Computer Trainer
2513	Communications Programmer	2341	Computer Trainor (Primary Education)
7422	Communications Technician	1330	Computing Services Manager
1343	Community Aged Care Coordinator	2652	Concert Artist
1344	Community Center Manager	2652	Concertmaster
3412	Community Development Worker	6212	Concessionaires And Loggers
3253	Community Health Aide	5153	Concierge (Building)
3253	Community Health Promoter	7114	Concrete Finisher, General
3253	Community Health Worker	8114	Concrete Finishing Machine Operator
4120	Community Organizer Secretary	8332	Concrete Mixer Driver
2635	Community Relations Officer	7114	Concrete Placer
3412	Community Service Worker	7114	Concrete Placers, Concrete Finishers And Related Workers
2265	Community/Public Health Nutritionist	8114	Concrete Production Machine Operator
5162	Companion	7114	Concrete Shutterer
5162	Companions And Valets	8114	Concrete-Mixer Operator
8322	Company Driver	8114	Concrete-Mixing-Plant Operator
2221	Company Nurse	7512	Confectioner
1211	Company Secretary	7512	Confectionery Maker
1211	Compensation Manager	3332	Conference And Event Planner
2656	Compere' (Emcee, Show Host)	1439	Conference Center Manager
8219	Composite Products Assembler	3332	Conference Planner
7121	Composition Roofer	5414	Confidential Agent
7321	Compositor, Cold Type/Hot Metal	3343	Confidential Secretary
3511	Computer Aided Design (Cad) Operator	1111	Congressman
2511	Computer Analyst	2133	Conservation Officer
2512	Computer Applications Engineer		
8212	Computer Assembler		
3512	Computer Database Assistant		



2133	Conservation Scientist	4419	Correspondence Clerk
8212	Console Operator	5142	Cosmetics And Skin Care Beauty Consultant
5412	Constable	5142	Cosmetologist
7112	Construction Bricklayer	2320	Cosmetology Instructor
1323	Construction Contractor	2411	Cost Accountant
7125	Construction Glazier	2411	Cost Analyst
8343	Construction Hoist Operator	4311	Cost Computing Clerk
9312	Construction Laborer	2411	Cost Controller (Finance)
7233	Construction Machinery Mechanic	2142	Cost Engineer
1323	Construction Managers	2163	Costume Designer
1323	Construction Managing Proprietor	5153	Cottage Caretaker
7131	Construction Painter	7317	Cottage Industry Worker (Wood)
1323	Construction Project Manager	6116	Cotton Farmer
7113	Construction Stonemason	2635	Counselling Professionals
1323	Construction Sub-Contractor	5249	Counter Checker
3123	Construction Supervisors	4225	Counter Clerk
7214	Constructional Steel Erector	4225	Counter Enquiries Clerk
1112	Consul	4412	Courier
1112	Consul General	8322	Courier Driver
2221	Consultant Nurse	2619	Court Administrator
4222	Contact Center Information Clerks	3411	Court Legal Officer
1439	Contact Center Manager	3411	Court Legal Service Chief
5244	Contact Center Salespersons	3343	Court Reporter
3254	Contact Lens Optician	8350	Coxswain
2642	Continuity And Script Editor	0310	Coxswain (Navy)
8111	Continuous Miner Operator	7549	Craft And Related Workers Not Elsewhere Classified
8111	Continuous Mining Machine Operator	7549	Crafts And Trade Helper
3154	Control Tower Officer	8343	Crane, Hoist And Related Plant Operators
3154	Control Tower Radio Operator	8343	Crawler Crane Operator
8131	Converter Operator (Chemical Processes)	2659	Creative And Performing Artists Not Elsewhere Classified
8121	Converting/Non-Ferrous Metal Extruder Operator	2641	Creative Writer
5120	Cook	3312	Credit Analyst
5120	Cook, Private Service	4214	Credit And Collection Clerk
9129	Cooling Tower Cleaner	3312	Credit And Loans Officers
7522	Cooper	3312	Credit Branch Operation Officer
3153	Co-Pilot	1221	Credit Card Operations Manager
7213	Coppersmith	3312	Credit Investigator/Appraiser
2642	Copy Editor	1346	Credit Union Manager
2642	Copy Reader	5163	Cremator
4415	Copying Clerk	3412	Crisis Intervention Worker
2642	Copywriter	2642	Critic
8113	Core Driller	6129	Crocodile Farmer
6112	Corn Farmers	9211	Crop Farm Laborers
2221	Coronary Nurse	5419	Crossing Guard
2619	Coroner	2641	Crossword Puzzle Maker
0310	Corporal (Air Force)	4212	Croupier/Dealer
0310	Corporal (Army)	8131	Crushing, Grinding And Chemical-Mixing Machinery Operator
1213	Corporate Compliance Manager	8112	Crushing/Mineral Ore Machine Operator
1120	Corporate Director	2653	Cultural Dancer
1213	Corporate Planning Manager	3412	Culture Center Worker Assistant
1213	Corporate Quality Assurance Manager	8154	Curing Machine Operator
3343	Corporate Secretary	2351	Curriculum Coordinator
1213	Corporate Services Manager		
1120	Corporation Chief Executive		
1349	Correctional Services Manager		

2351	Curriculum Developer	2529	Database And Network Professionals Not Elsewhere Classified
4222	Customer Contact Center Information Clerk	2521	Database Architect
5244	Customer Contact Center Salesperson	2521	Database Designers And Administrators
1221	Customer Credit Manager	2513	Database Programmer
4222	Customer Service Assistant	3412	Day Care Worker
4222	Customer Service Representative	3322	Dealer
1221	Customer Services Manager	4214	Debt Collector
3351	Customs And Border Inspectors	4214	Debt Collectors And Related Workers
1324	Customs Broker	3152	Deck Cadet
3351	Customs Declarant	3152	Deck Superintendent
5414	Customs Gatekeeper	3331	Declarant
3351	Customs Inspector	7131	Decorative Painter
3351	Customs Officer	7314	Decorators/Lazers
3351	Customs Representative	6227	Deep Sea Fisherman/Woman
7323	Cutter Operator	6227	Deep-Sea Fishery Workers
7113	Cutter, Mosaic	6121	Deer Farmer
8112	Cutting Machine Operator, Mine	3355	Defense Research Officer
7322	Cylinder Pressman	8155	Dehaired/Hide Machine Operator
3212	Cytology Technician	9621	Delivery Helper

## D

6122	Dairy Farmer	5242	Demonstrator
7513	Dairy Product Maker	5329	Dental Aide
8160	Dairy Products Machine Operator	3251	Dental Assistant
3142	Dairy Technician	3251	Dental Assistants And Therapists
2269	Dance And Movement Therapist	3251	Dental Associate
1431	Dance Studio Manager	2261	Dental Hygienist
2355	Dance Teacher	3214	Dental Mechanic
2653	Dancers And Choreographers	2221	Dental Nurse
5169	Dancing Partner	2261	Dental Practitioner
8132	Darkroom Technician	7311	Dental Prosthesis Maker
2521	Data Administrator	7311	Dental Prosthesis Repairer
7422	Data And Telecommunications Cabling	2261	Dental Surgeon
4132	Data Entry Clerks	3214	Dental Technician
3511	Data Entry Machine Operator	3251	Dental Therapist
4132	Data Entry Operator	2261	Dentist
3341	Data Entry Supervisor	3214	Denturist
4132	Data Entry/Computer Clerk	2221	Dermatological Ward Nurse
4132	Data Entry/Converter Clerk (Card-To-Tape)	2212	Dermatologist
4132	Data Entry/Electronic Mail Clerk	8113	Derrick/Oil And Gas Well Operator
4132	Data Entry/Encoder Clerk	8113	Derrickman
4132	Data Entry/Punching Machine Clerk (Card And Tape)	4225	Desk Clerk
4132	Data Enumerator Clerk	7321	Desktop Publishing Operator
4132	Data Input Clerk	8131	Detergent Products Machine Operator
1330	Data Operations Manager	7322	Developer, Black And White
1330	Data Processing Manager	7322	Developer, Color
4132	Data Processor Clerk	8132	Developing/Photography Machine Operator
4132	Data Tabulator Clerk	8113	Developmental Driller
4132	Data Transcriber Clerk	2221	Diabetic Ward Nurse
2521	Database Administrator	3211	Diagnostic Medical Radiographer
2521	Database Analyst	2221	Dialysis Nurse
		3211	Dialysis Technician
		7222	Die Maker



7233	Earth-Moving Equipment Fitter	7412	Electrical Motor Fitter
6129	Earthworm Farmer (Vermiculturist)	7412	Electrical Products Inspector
3211	Ecg Technician	7412	Electrical Products Tester
3211	Echocardiography Technician	7411	Electrical Repairman
2133	Ecologist	7412	Electrical Switchgear & Control Apparatus Fitter
2631	Econometrician	7412	Electrical Technician
2631	Economic Adviser	7412	Electrical Transformer Fitter
2631	Economic Analyst	7411	Electrician, Building Wiring
1221	Economic Enterprise Manager	3211	Electro-Cardiograph Technician
1114	Economic-Interest Organization Senior Official	3211	Electroencephalography Technician
2631	Economist	2151	Electromechanical Engineer
8172	Edge Sawyer	8212	Electromechanical Equipment Assembler
2642	Editor	7422	Electronic Computer Equipment Fitter
2642	Editorial Staff	3511	Electronic Computer Operator
3512	Edp Assistant	8212	Electronic Equipment Assembler
3511	Edp Operator	3114	Electronic Equipment Operator
1330	Edp/Mis/It Managers	7421	Electronic Equipment Servicer
1345	Education Managers	2111	Electronic Physicist
2351	Education Methods Adviser	7321	Electronic Pre-Press Technician
2351	Education Methods Specialist	2152	Electronic Product Test Engineer
2634	Educational Psychologist	7422	Electronic Products Inspector
6113	Eggplant Farmer	7422	Electronic Products Tester
6123	Eggs Producers	7422	Electronic Signaling System Fitter
7212	Electric Arc Welder (Machine)	3114	Electronic System Technician
7413	Electric Cable Jointer	3114	Electronics And Communication Equipment Technician
8212	Electric Line Installation Machine Operator	7421	Electronics Business Machines Technicians
7412	Electric Machine Rewinder	2152	Electronics Engineer
7412	Electric Meter Repairman	3114	Electronics Engineering Technicians
7412	Electric Motor And Generator Fitter	2152	Electronics Engineering Technologist
7412	Electric Motor Repairman	7422	Electronics Fitter (General)
3131	Electric Plant Operator	7421	Electronics Mechanics And Servicers
2151	Electric Power Generation Engineer	7422	Electronics/Computer Equipment Fitter
7413	Electric Power Lineman	7422	Electronics/Telecommunications Equipment Fitter
3113	Electric Power Transmission Engineering Technician	3255	Electrotherapist
7413	Electric Traction Lineman	9629	Elementary Workers Not Elsewhere Classified
7421	Electric Typewriter Technician	8311	Elevated Train Driver
7212	Electric Welder	3115	Elevator Technician
8212	Electrical And Electronic Equipment Assemblers	4229	Eligibility Interviewer
7412	Electrical Elevator Fitter	4229	Eligibility Specialist
2151	Electrical Engineer	5163	Embalmer
3113	Electrical Engineering Technician	7533	Embroiderer (Multi-Head Machine)
3113	Electrical Engineering Technician (High Voltage)	8153	Embroidery Machine Operator
8212	Electrical Equipment Assembler	3258	Emergency Medical Technician
7412	Electrical Fitter (General)	2212	Emergency Medicine Specialist
7412	Electrical Generator Fitter	2221	Emergency Nurse
7411	Electrical Inspector	3258	Emergency Paramedic
7412	Electrical Instrument Fitter	4416	Employee Data Management Practitioner
7413	Electrical Line Installer	1114	Employers' Organization President
7413	Electrical Line Installers And Repairers	1114	Employers' Organization Secretary-General
7412	Electrical Mechanic	1114	Employers' Organization Senior Official
7412	Electrical Mechanics And Fitters		



5241	Fashion Model	2411	Financial Controller
9411	Fast Food Preparers	1346	Financial Institution Branch Manager
9411	Fast-Food Cook	2412	Financial Planner
2641	Feature Writer	3355	Fingerprint Examiner
7322	Feeder Operator (Printing)	3355	Fingerprint Technician
2240	Feldscher	8154	Finishing Machine Operator
7535	Fellmonger	3122	Finishing Supervisor
8159	Felt Hood Former	5411	Fire Aide
5161	Fengshui	5411	Fire Brigade/Marshall
8350	Ferry Hand	3112	Fire Inspector
8159	Fertilizer Plant Operator	3119	Fire Investigator
7318	Fiber Aide	3112	Fire Prevention Specialist
7318	Fiber Blender	8332	Fire Truck Driver
7318	Fiber Carder	7112	Firebrick Layer
7318	Fiber Classer	5411	Firefighter
7318	Fiber Grader	5411	Firefighting Operative
7318	Fiber Lapper	5411	Fireman/Firewoman
7318	Fiber Mixer	9624	Firewood Collector
7318	Fiber Picker	6214	Firewood Gatherer
7318	Fiber Preparer	5329	First Aid Assistant
8151	Fiber Preparing Machine Operator	2413	Fiscal Analyst
3142	Fiber Technician	4110	Fiscal Clerk
7318	Fiber/Textiles Comber	3411	Fiscal Examiner
7318	Fiber/Textiles Drawer	6229	Fish Catcher For Aquarium
7318	Fiber/Textiles Rover	6221	Fish Farmer
8181	Fiberglass Maker	7511	Fish Filleter
8151	Fibre Preparing, Spinning And Winding Machine Operators	6221	Fish Hatchery Manager
7123	Fibrous Plasterer	6225	Fish Hatchery/Nursery Farm Operator
4110	Field Clerk	8160	Fish Processing Machine Operator
3142	Field Crop Technical Officer	7511	Fish Processing Worker
0110	Field Marshal	7514	Fish Smoker
2656	Field Reporter	2132	Fisheries Adviser
3153	Fighter Pilot	3359	Fisheries Inspector
2359	Fighter Pilot Escape & Evasion Training Instructor	6226	Fisherman/Woman (Coastal Waters)
4415	Filing And Copying Clerks	6226	Fisherman/Woman (Inland Waters)
4415	Filing Clerk	6229	Fishermen Not Elsewhere Classified
3341	Filing Clerks Supervisor	9216	Fishery And Aquaculture Laborers
7211	Filler Metal Molder	9216	Fishery Caretaker
9334	Filler, Stock	3142	Fishery Technician
3521	Film Camera Operator	6223	Fishing Master (Deep Sea)
2654	Film Editor	1312	Fishing Operations Manager
2654	Film, Stage And Related Directors And Producers	6222	Fishing Vessel Skipper (Coastal Waters)
8132	Film/Color Developer	7511	Fishmonger
2411	Final Audit Process Engineer	3423	Fitness And Recreation Instructors And Program Leaders
3311	Finance Broker	3423	Fitness Instructor
4312	Finance Clerk	7126	Fitter, Pipe
3311	Finance Dealer	7212	Flame Cutter
1211	Finance Manager	7322	Flexographic Press Operator
4312	Finance Practitioner	5111	Flight Attendant
2413	Financial Analyst	3154	Flight Control Tower Operator
1346	Financial And Insurance Services Branch Managers	3153	Flight Engineer
2412	Financial And Investment Advisers	2359	Flight Instructor
		3153	Flight Navigator
		0210	Flight Sergeant
		5111	Flight Steward/Stewardess

8181	Float-Glass Bath Operator	8350	Fourth Mate
8343	Floating Crane Master (Gov)	3322	Franchise Relation Officer
7211	Floor And Fit Molder	9510	Free Newspaper Distributor
7122	Floor Layer	2641	Freelance Writer
7122	Floor Layers And Tile Setters	8160	Freezer, Meat And Fish
3435	Floor Manager (Broadcasting)	3152	Freight And Shipping Specialist
8112	Flotation Minerals Worker	4321	Freight Clerk
2652	Flutist	1324	Freight Forwarding Manager
3153	Flying Instructor	9333	Freight Handlers
0110	Flying Officer (Military)	8312	Freight Train Railway Brakeman
7323	Foil Stamp Operator	6225	Frog Raiser
7323	Folder Operator	1221	Front Office Manager
6118	Foliage Propagator	8342	Front-End Loader Operator
7515	Food And Beverage Tasters And Graders	6117	Fruit Farmer
2265	Food And Nutrition Specialist	7515	Fruit Grader
8160	Food And Related Products Machine Operators	8183	Fruit Juice Production Machine Operator
5131	Food Attendant	7514	Fruit Preserver
2113	Food Chemist	6117	Fruit Tree Farmers
7515	Food Grader	7514	Fruit, Vegetable And Related Preservers
9321	Food Packer	9211	Fruit/Vegetable Picker
7514	Food Pickler	2145	Fuel Technologist
7511	Food Preparer	8159	Fuel Tender
7514	Food Preserver	2269	Fumigation Supervisor
1321	Food Production Coordinator	7544	Fumigator
3257	Food Sanitation And Safety Inspector	7544	Fumigators And Other Pest And Weed Controllers
5131	Food Server	5163	Funeral Undertaker
5246	Food Service Counter Attendants	8155	Fur And Leather Preparing Machine Operators
2265	Food Service Dietician	8159	Fur Fiber Mixer (Machine)
7515	Food Taster	7531	Fur Grader
2269	Food-Drug Regulation Officer	7532	Fur Pattern-Maker
8156	Footwear Production Machine Operator	6129	Fur Producer (Non-Domesticated Animals)
3311	Foreign Exchange Broker	7533	Fur Sewer (Hand)
3311	Foreign Exchange Dealer	6228	Fur Trapper
3122	Foreman/Woman, Assembly	8219	Furniture Finisher, Wood
2113	Forensic Chemist	7132	Furniture Painter (Spray)
2212	Forensic Pathologist	7523	Furniture Production Machine Operator
3119	Forensic Science Technician	7531	Furrier
2651	Forensic/Sketch Artist		
3359	Forest Concession Guard		
5411	Forest Firefighter		
6211	Forest Ranger		
6211	Forest Technician		
6211	Forest Tree Planters		
2132	Forester		
2132	Forestry Adviser		
3359	Forestry Inspector		
9215	Forestry Laborers		
2132	Forestry Scientist		
3143	Forestry Technician		
1311	Forestry/Hunting General Manager		
7221	Forging Press Worker		
8344	Fork Lift Operator		
5161	Fortune Teller		
3331	Forwarding Agent		
7222	Foundry Worker		

## G

6113	Gabi Farmer
3433	Gallery Technician
3433	Gallery, Museum And Library Technicians
6129	Game Bird Breeder
2513	Game Developers
5419	Game Warden
7231	Garage Mechanic
9611	Garbage And Recycling Collectors
9611	Garbage Collector
9611	Garbage Dumper
8332	Garbage Truck Driver
9214	Garden And Horticultural Laborers

9214	Garden Laborer	6116	Ginger Farmer
9214	Gardener	8181	Glass And Ceramics Plant Operators
6118	Gardeners, Horticultural And Nursery Growers	7315	Glass Blower
6116	Garlic/Onion (And Other Spices) Farmer	7315	Glass Cutter
7532	Garment And Related Patternmakers And Cutters	7315	Glass Cutter (Optical)
7532	Garment Cutter	7315	Glass Edge Grinder
7532	Garment Marker	7316	Glass Enameller
7532	Garment Patternmaker	7316	Glass Engraver
7533	Garments Sewer	7316	Glass Etcher
7114	Gas Or Oil Well Cementer	7315	Glass Finisher
7126	Gas Pipe Fitter	8181	Glass Former
3134	Gas Plant Operator	8181	Glass Kiln Operator
7212	Gas Tungsten Arc Welder	7315	Glass Lens Molder
3113	Gas Turbine System Technician (Electrical)	7315	Glass Makers, Cutters, Grinders And Finishers
3115	Gas Turbine System Technician (Mechanical)	8181	Glass Mixer
7212	Gas Welder	7316	Glass Painter
8113	Gas/Oil Well Puller	8181	Glass Painting Machine Operator
8113	Gas/Oil Well Rotary Driller	8181	Glass Plant Operator
5245	Gasoline Attendant	8181	Glass Production Furnace Operator
5414	Gatekeeper/Roving Guard	7316	Glass Sandblaster
7323	Gatherer Operator	7315	Glass Scientific Blower
7222	Gauge Maker	8181	Glass Temperer
8211	Gearbox Assembler	7315	Glass Tube Bender
6126	Geese Farmer	8181	Glass Tube Maker
7313	Gem Cutter/Faceter	8181	Glass-Annealing Furnaceman
7313	Gem Setter	8181	Glass-Blowing Machine Operator
2633	Genealogist	8181	Glass-Drawing Machine Operator
0110	General (Army)	8181	Glass-Making Furnaceman
7411	General Electrician	8181	Glass-Pressing Machine Operator
2411	General Ledger Accountant	8181	Glaze Maker
1312	General Manager, Fishing	7125	Glazier
4110	General Office Clerk	7532	Glove Cutter
2211	General Practitioner	6121	Goat Farmer
3343	General Secretary	9311	Gold Panner
2211	Generalist Medical Practitioners	7313	Goldsmith
3131	Generating Station Operator	9629	Golf Caddie
2142	Geodetic Engineer	3354	Government Licensing Officials
2165	Geodetic Surveyor	3359	Government Regulatory Associate Professionals Not Elsewhere Classified
2632	Geographer	3353	Government Social Benefits Officials
2114	Geological Oceanographer	3352	Government Tax And Excise Officials
2114	Geologist	1112	Governor/Deputy Governor Of The Central Bank
2114	Geologist Engineer	1111	Governor/Vice Governor
2114	Geologists And Geophysicists	9129	Graffiti Cleaner
3111	Geology Technician	3411	Graft Investigation Officer
2114	Geophysical Oceanographer	7113	Granite Cutter
2114	Geophysical Scientist	6117	Grapevine Farmer
2114	Geophysicist	2166	Graphic And Multimedia Designers
2142	Geotechnical Engineer	2166	Graphic Designer/Artist
3112	Geotechnical Technician	1222	Graphic Director
2114	Geothermal Engineer	5163	Grave Digger
2221	Geriatric Nurse	7322	Gravure Press Operator
2264	Geriatric Physical Therapist	7233	Greaser
		9214	Greenkeeper



8171 Grinding Machine Operator (Wood)  
 8112 Grinding/Chemical And Related Process  
 Machine Operator  
 5221 Grocer  
 1420 Grocery Manager  
 2320 Ground Instructor  
 3155 Ground Signalling Technician  
 5153 Groundskeeper  
 0110 Group Captain, (Air Force)  
 5414 Guard Patrol  
 2354 Guitar Teacher  
 2652 Guitarist  
 0310 Gunners Mate  
 7222 Gunsmith  
 2212 Gynecologist

## H

5141 Hair Care Specialist  
 5141 Hairdresser  
 5141 Hairstylist  
 8131 Halogen Gas Production Machine  
 Operator  
 7221 Hammer-Smith  
 9331 Hand And Pedal Vehicle Drivers  
 7318 Hand Braidmaker  
 7321 Hand Compositor  
 7211 Hand Coremaker  
 7318 Hand Crocheter  
 7316 Hand Dipper  
 9412 Hand Dish Washer  
 7533 Hand Embroiderer  
 9121 Hand Launderers And Pressers  
 7221 Hand Metal Former  
 9321 Hand Packers  
 7533 Hand Sewer  
 7533 Hand Sewer, Leather  
 7221 Hand Wire Drawer  
 7317 Handicraft Designer  
 7317 Handicraft Model Maker  
 7318 Handicraft Worker, Carpets  
 7318 Handicraft Worker, Leather  
 7317 Handicraft Worker, Paper  
 7317 Handicraft Worker, Reed Weaving  
 7317 Handicraft Worker, Stone Articles  
 7318 Handicraft Worker, Textiles  
 7317 Handicraft Worker, Wooden Articles  
 7318 Handicraft Workers In Textile, Leather  
 And Related Materials  
 7317 Handicraft Workers In Wood, Basketry  
 And Related Materials  
 7319 Handicraft Workers Not Elsewhere  
 Classified  
 9333 Handler, Freight  
 9334 Handler, Stock  
 7318 Hand-Operated Machine Knitter  
 9622 Handyperson  
 3152 Harbor Master  
 5414 Harbor Patrol  
 8121 Hardener  
 8121 Hardening/Metal Furnace Operator  
 7422 Hardware Technician  
 8341 Harvester Operator  
 7532 Hat And Cap-Pattern Maker  
 8159 Hat Blocking Machine Operator  
 8159 Hat Making Machine Operator  
 7531 Hatter  
 9520 Hawker  
 5212 Hawker (Food)  
 3434 Head Chef  
 5120 Head Cook  
 3230 Healer Of Indigenous People (E.G. Mansi-  
 Bok (Ibaloi); Mansip-Ok (Kankana-Ey)  
 In Cordilleras)  
 2149 Health And Safety Engineer  
 3259 Health Associate Professionals Not  
 Elsewhere Classified  
 5321 Health Care Assistants  
 3252 Health Information Clerk  
 3257 Health Inspector  
 3119 Health Physics Technician  
 2269 Health Professionals Not Elsewhere  
 Classified  
 1342 Health Service Managers  
 3113 Heating And Ventilation Technician  
 2144 Heating, Ventilation And Aircondition  
 Engineer  
 8121 Heat-Treating/Metal Furnace Operator  
 8332 Heavy Truck And Lorry Drivers  
 8332 Heavy Truck Driver  
 7232 Helicopter Mechanic  
 2221 Hematology Nurse  
 2221 Hemodialysis Nurse  
 3230 Herbalist  
 3141 Herbarium Technician  
 3142 Herd Tester  
 7535 Hide And Skin Grader  
 7535 Hide Dehairer  
 7535 Hide Flesher  
 7535 Hide Splitter  
 2330 High School Teacher  
 3511 High-Speed Computer Printer Operator  
 2142 Highway And Street Construction  
 Engineer  
 7533 Hi-Speed Sewer  
 2633 Historian  
 9313 Hod Carrier  
 6127 Hog Raising Producers  
 5322 Home Birth Assistant  
 5322 Home Care Aide  
 2341 Home Economics (Primary Education)



1330	Information And Communications Technology Service Managers	1211	Internal Audit Manager
3512	Information And Communications Technology User Support Technicians	8211	Internal Combustion Engine Fitter Assembler (Except Aircraft And Marine)
4225	Information Clerk	7231	Internal Combustion Engine Fitter-Assembler
1330	Information Systems Director	2513	Internet Developer
2523	Information Technology (It) Specialist	5244	Internet Salesperson
1330	Information Technology Manager (It Manager)	1330	Internet Service Provider
2310	Information Technology Professor	2643	Interpreter
2356	Information Technology Trainers	3355	Investigation Agent
2619	In-House Counsel	2413	Investment Analyst
6226	Inland And Coastal Waters Fishery Workers	2413	Investment Consultant
6226	Inland Waters Workers	1211	Investment Manager
3119	In-Line Reviser	5230	Invoice Clerk
5413	Inmate Guidance Officer	7214	Iron Works Fabricator
6119	Insecticidal And Medicinal Grower	6111	Irrigated, Rice Farmer
1112	Inspector-General (Police)	3511	It And Lan Technician
5321	Institution-Based Personal Care Worker	2523	It Engineers
2149	Instrument Control Engineer	2434	It Sales
3119	Instrument Technician	2434	It Technical Sales Specialist
7312	Instrument/Musical Maker (Brass)	<b>J</b>	
7312	Instrument/Musical Maker (String)		
7312	Instrument/Musical Maker (Woodwind)	8152	Jacquard Card Cutter
2652	Instrumentalist	8152	Jacquard Design Copyist
3114	Instrumentation And Control Technician	8152	Jacquard Weaver
2152	Instrumentation Engineer	5413	Jail Guard
7412	Instrumentation Repairman	3355	Jail Inspector
7124	Insulation Installer	3355	Jail Officer
7124	Insulation Worker, Accoustical	7514	Jam Maker
7124	Insulator	5153	Janitor
7124	Insulator Worker (Aeronautical)	2514	Java Programmer
3321	Insurance Adjuster	8322	Jeepney Driver
3321	Insurance Adviser	7232	Jet Engine Mechanic
1346	Insurance Agency Manager	7313	Jeweller (General)
3321	Insurance Agent	7313	Jewellery And Precious Metal Workers
3315	Insurance Assessor	8219	Jewellery Assembler
3321	Insurance Broker	2163	Jewellery Designer
4312	Insurance Clerk	7313	Jewelry Caster (Hand)
3321	Insurance Examiner	7313	Jewelry Caster (Machine)
3321	Insurance Processor	7313	Jewelry Engraver
3321	Insurance Representatives	7313	Jewelry Finishers, By Hand And Machine
3353	Insurance Risk Analyst	7313	Jewelry Maker (Goldsmith, Silversmith)
3321	Insurance Underwriter	7313	Jewelry Polisher
3321	Insurance/Risk Officer	7313	Jewelry Repairer
3355	Intelligence Agent	7222	Jig Maker
3355	Intelligence Assistant	2423	Job Analyst
2422	Intelligence Officer	3333	Job Placement Officer
2221	Intensive Care Unit Nurse	7115	Joiner
2353	Intensive Language Teacher	2642	Journalist
2641	Interactive Media Writer	2612	Judge
2161	Interior Architect	3411	Judge'S Clerk
3432	Interior Decorator	2611	Judicial Officer
3432	Interior Designer	8113	Jumbo Operator
3432	Interior Designers And Decorators	2619	Jurist (Except Lawyer Or Judge)

3411 Justice Of The Peace  
6116 Jute Farmer

## K

9215 Kaingeros  
2652 Keyboard Player  
2342 Kindergarten Teacher  
5211 Kiosk Salesperson  
9412 Kitchen Assistant  
9412 Kitchen Hand  
9412 Kitchen Helper  
9412 Kitchen Porter  
9412 Kitchen Steward  
8219 Knife Assembler  
7318 Knitter  
8152 Knitting Machine Operator (General)  
8152 Knitting Setter (Machine)

## L

9321 Labeller, Hand  
8183 Labelling Machine Operator  
3333 Labor Contractor  
2631 Labor Economist  
1114 Labor Organization Senior Official  
1212 Labor Relations Manager  
4110 Laboratory Clerk  
3119 Laboratory Technician  
9329 Laborer, Assembling  
9313 Laborer, Construction Building  
9313 Laborer, Demolition  
9215 Laborer, Forestry  
9321 Laborer, Manufacturing (Hand)  
9216 Laborer/Helper, Fishery  
8152 Lace Weaver (Machine)  
8121 Ladle Pourer  
5414 Lady Guard  
8142 Laminated Press Operator (Plastics)  
3359 Land Management Inspector  
3359 Land Management Officer  
2164 Land Planner  
2165 Land Surveyor  
2162 Landscape Architect  
6118 Landscape Gardener  
2353 Language Researcher  
2341 Language Teacher (Primary Education)  
2330 Language Teacher (Secondary Education)  
2266 Language Therapist  
2353 Language Trainer  
7322 Large Sheet-Fed Press Operator  
3211 Laser Private Operator  
7536 Laster  
8141 Latex Worker

7113 Lathe Operator (Stone)  
7223 Lathe Setter-Operator  
3152 Launch Master  
3152 Launch Patron  
3152 Launch Service Supervisor  
9121 Launderer, Hand  
8157 Laundry Machine Operator  
8157 Laundry Pressing Machine Operator  
9112 Lavatory Attendant  
9214 Lawn Mower  
2611 Lawyer  
3413 Lay Evangelist  
3413 Lay Minister  
3413 Lay Preacher  
1222 Layout Director  
7125 Leaded-Glass Glazier  
9621 Leaflet Deliverer  
9510 Leaflet Distributor  
2352 Learning Disabilities Special Education Teacher  
4416 Learning Practitioner  
2352 Learning Support Teacher  
7535 Leather Currier  
7532 Leather Cutter  
7535 Leather Dyer  
7536 Leather Goods Assembler  
7536 Leather Goods Maker (General)  
7532 Leather Patternmaker  
8156 Leather Production Machine Operator  
8219 Leather Products Assembler  
7536 Leather Sewer (Hand/Machine)  
7535 Leather Stainer  
2359 Lecturer  
2611 Legal Counsel  
2619 Legal Adviser  
3411 Legal Aide  
2611 Legal Analyst  
3411 Legal And Related Associate Professionals  
3411 Legal Assistant  
2619 Legal Consultant  
3342 Legal Practice Manager  
2619 Legal Professionals Not Elsewhere Classified  
2619 Legal Researcher  
3342 Legal Secretary  
1349 Legal Service Manager  
4131 Legal Stenographer  
3343 Legislative Committee Secretary  
3411 Legislative Staff Assistant  
3411 Legislative Staff Officer  
1111 Legislators  
1431 Leisure Center Manager  
7322 Letter Press-Pressman  
3312 Letters Of Credit Analyst  
2643 Lexicographer

2622 Librarian  
 4411 Librarian Aide  
 2622 Librarians And Related Information  
     Professionals  
 4411 Library Assistant  
 4411 Library Clerk  
 4411 Library Filer  
 1349 Library Manager  
 3433 Library Technician  
 3354 License Examiner  
 3354 License Inspector  
 3354 Licenser  
 3354 Licensing Officer  
 0110 Lieutenant  
 0110 Lieutenant Colonel (Army)  
 0110 Lieutenant Commander (Navy)  
 0110 Lieutenant, Flight  
 3141 Life Science Technician  
 3412 Life Skills Instructor  
 5419 Lifeguard  
 7412 Lift Mechanic  
 8344 Lifting Truck Operator  
 2111 Light And Optics Physicist  
 5153 Lighthouse Keeper  
 3435 Lighting Technician  
 3114 Line Technician  
 7413 Lineman  
 7413 Lineman/Electric Power  
 7413 Lineman/Telephone/Telegraph/Cable Tv  
 2353 Linguistic Specialist  
 7321 Linotype Operator  
 3132 Liquid Waste Process Operator  
 7515 Liquor Taster  
 4110 List/Addresses Clerk  
 2359 Literacy Tutor  
 3339 Literary Agent  
 2641 Literary Writer  
 2330 Literature Teacher  
 3118 Lithographic Artist  
 9212 Livestock Farm Laborer  
 6121 Livestock Farmer  
 3142 Livestock Inspector  
 8341 Loader Operator  
 4213 Loan Clerk  
 3312 Loan Officer  
 4213 Loan Processor  
 3411 Local Legislative Officer  
 7222 Locksmith  
 8311 Locomotive Engine Driver  
 8172 Log Cut-Off Operator  
 6212 Log Marker  
 6212 Log Scaler  
 6212 Logger  
 8341 Logging Plant Operator  
 3331 Logistics And Warehouse Officer  
 4312 Logistics Clerk

1324 Logistics Manager  
 8152 Loom Threader (Machine)  
 7233 Loomfixers  
 6111 Lowland, Rice Farmer  
 7233 Lubrication Man  
 3122 Lubrication Supervisor  
 8219 Luggage Finisher  
 9621 Luggage Porter  
 6212 Lumber Grader  
 7521 Lumber Kiln Operator  
 6212 Lumberjacks  
 2221 Luxury Ship Nurse  
 2652 Lyricist

## M

7512 Macaroni Maker  
 8142 Machine Cellophane Bag Maker  
 7211 Machine Coremaker  
 8152 Machine Crocheter  
 7211 Machine Molder  
 8143 Machine Operator (Cardboard Products)  
 8114 Machine Operator (Cast Stone  
     Production)  
 8143 Machine Operator (Envelope And Paper  
     Bag Production)  
 8143 Machine Operator (Paper Box  
     Production)  
 7533 Machine Sewer  
 8121 Machine Tool Operator  
 7223 Machine Tool Setter-Operator  
 8121 Machine Wire Drawer  
 8211 Machine-Operator, Drilling/Metal  
 8211 Machine-Operator, Grinding/Metal  
 8211 Machine-Operator, Machine Tool  
 7233 Machinery Erector And Installer  
 7233 Machinery Mechanic (General)  
 9612 Magbobote  
 2659 Magician  
 2612 Magistrate  
 3114 Magnetic Recorder Operator  
 4412 Mail Carriers And Sorting Clerks  
 4412 Mail Clerk  
 4412 Mail Messenger  
 4412 Mail/Dispatch Clerk  
 4412 Mail/Sorting Clerk  
 4110 Maintenance Clerk  
 7411 Maintenance Electrician  
 2144 Maintenance Engineer  
 9312 Maintenance Laborer  
 5221 Maintenance Storekeeper  
 3115 Maintenance Technician  
 0110 Major (Army)  
 7311 Maker And Repairer, Instrument/  
     Meteorological

7311	Maker And Repairer, Instrument/Surgical	2635	Marriage Counsellor
7533	Maker, Umbrella	5414	Marshall
5142	Make-Up Artist	2659	Mascot
3211	Mammographer	7113	Mason (General)
2411	Management Accountant	7113	Mason Leadman
2421	Management And Organization Analyst	7113	Mason, Monument
2421	Management Consultant	3255	Massage Therapist
2523	Management Information Analyst	6227	Master Fisherman
2511	Management Information System Designer	0210	Master Sergeant
1120	Managing Director	4322	Material Control/Material Handling Clerk
1120	Managing Directors And Chief Executives	2149	Material Engineer
2642	Managing News Editor	1324	Material Resources Manager
6117	Mango Farmer	3314	Mathematical Assistant/Aide
5142	Manicurist	2122	Mathematical Statistician
5241	Mannequin Model	2121	Mathematician (Applied Mathematics)
7132	Manufactured Articles Painter	2121	Mathematician (Pure Mathematics)
7132	Manufactured Articles Varnisher	2121	Mathematicians And Actuaries
1321	Manufacturer	2359	Mathematics Coach
3322	Manufacturer'S Agent	5151	Matron (Housekeeping)
1321	Manufacturing General Manager/Proprietor	7534	Mattress Maker
9329	Manufacturing Laborers Not Elsewhere Classified	1111	Mayor/Vice Mayor
1321	Manufacturing Manager	7511	Meat Cutter
3122	Manufacturing Supervisors	8160	Meat Processing Machine Operator
5245	Marina Attendant	7514	Meat Smoker
2144	Marine Architect	2111	Mechanic Physicist
2131	Marine Biologist	7233	Mechanic, Heavy Equipment
7233	Marine Craft Mechanic	7233	Mechanic, Hydraulic
2144	Marine Engineer	2144	Mechanical Engineer
3115	Marine Engineering Technician	3115	Mechanical Engineering Estimator
7233	Marine Machinery Mechanic	3115	Mechanical Engineering Technician
7126	Marine Pipe Fitter	8211	Mechanical Machinery Assemblers
2149	Marine Salvage Engineer	3115	Mechanical Planner And Scheduler
3115	Marine Surveyor	7233	Mechanical Products Inspector
3152	Maritime Transport Service Supervisors	7233	Mechanical Products Tester
9111	Market Aide	2656	Media Interviewer
6118	Market Gardener	2431	Media Production Specialist
3359	Market Inspector	1342	Medical Administrator
2431	Market Research Analyst	5321	Medical Aide
4227	Market Research Interviewer	3214	Medical And Dental Prosthetic Technicians
5211	Market Salesperson	3212	Medical And Pathology Laboratory Technicians
5211	Market Stallholder	3256	Medical Assistant
9613	Market Sweeper	3353	Medical Claims Benefits
5221	Market Tender	2211	Medical Doctor (General)
5211	Market Vendor	7422	Medical Equipment Fitter
3339	Marketing Agent	3211	Medical Imaging And Therapeutic Equipment Technicians
3322	Marketing Assistant	5329	Medical Imaging Assistant
2431	Marketing Coordinator	3344	Medical Insurance
1221	Marketing Executive (Sales)	3212	Medical Laboratory Technician
2431	Marketing Executive (Advertising)	3344	Medical Office Administrative Assistant
1221	Marketing Manager	2211	Medical Officer (General)
4120	Marketing Secretary	2212	Medical Pathologist
2431	Marketing Specialist	2111	Medical Physicist
7522	Marquetry Inlayer	3344	Medical Practice Manager

3211	Medical Radiation Technician	8219	Metal Products (Except Mechanical) Assembler
3211	Medical Radiation Therapist	7121	Metal Roofer
4226	Medical Receptionist	7214	Metal Shipwright
3252	Medical Records Analyst	7319	Metal Toymaker
3252	Medical Records And Health Information Technicians	7312	Metal Wind Instrument Maker
3252	Medical Records Clerk	7223	Metal Working Machine Tool Setters And Operators
3252	Medical Records Technician	2146	Metallurgical Engineer
3252	Medical Records Unit Supervisor	3117	Metallurgical Technician
3344	Medical Relation Assistant	2146	Metallurgist
2433	Medical Sale Representative	3117	Metals Technologist
3211	Medical Scanning Equipment Technician	7224	Metal-Wheel Grinder
3344	Medical Secretary	7233	Metalworking Machine-Tool Fitter
3344	Medical Stenographer	7233	Metalworking Machine-Tool Mechanic
3211	Medical Technologists	7223	Metalworking-Machine Setter-Operator (General)
3344	Medical Transcriptionist	2112	Meteorological Scientist
3321	Medical Underwriter	2112	Meteorologist
2221	Medical Ward Nurse	3111	Meteorology Technician
3211	Medical X-Ray Technician	9623	Meter Reader
2221	Medico-Legal Nurse	9623	Meter Readers And Vending-Machine Collectors
3135	Melting/Metal, Furnace Operator	2141	Methods Engineer
1111	Member Of The Barangay Council (Sangguniang Pambarangay)	9613	Metro Aide
1111	Member Of The Provincial Board (Sangguniang Panlalawigan)	3511	Micro Computer Operator
3412	Mental Health Worker	3511	Micro Editor Operator
3322	Merchandiser	3511	Micro Filming Machine Operator
5223	Merchandising Assistant	2131	Microbiologist
2431	Merchandising Supervisor	0110	Midshipman
4223	Message Handling Operator	3222	Midwifery Associate Professionals
9621	Messenger	5321	Midwifery Attendant
9621	Messengers, Package Deliverers And Luggage Porters	2222	Midwifery Professionals
7211	Metal Castings Molder	2353	Migrant Education Teacher
8122	Metal Coating Machine Operator	7513	Milk Collector
8121	Metal Drawer Machine Operator	8160	Milk Processing Machine Operator
7316	Metal Engraving Etcher	7513	Milker
8121	Metal Extruder Operator	6221	Milkfish And Tilapia Producers
8121	Metal Extrusion Plant Operator	7531	Milliner
7224	Metal Finisher	7223	Milling Machine Setter-Operator
8122	Metal Finishing Machine Operator	8112	Milling/Minerals Machine Operator
8122	Metal Finishing, Plating And Coating Machine Operators	7522	Mill-Wright
8121	Metal Heat Treating Operator	8312	Mine And Quarry Brakeman
7222	Metal Marker	8343	Mine Cageman
2146	Metal Mining Engineer	3121	Mine Deputy
7211	Metal Molders And Coremakers	8343	Mine Hoist Operator
8122	Metal Painting Machine Operator	1322	Mine Manager
7222	Metal Pattern Maker	3117	Mine Safety Inspector
8122	Metal Plating Machine Operator	7542	Mine Shot Firer
7224	Metal Polisher	3121	Mine Supervisor
7224	Metal Polishers, Wheel Grinders And Tool Sharpeners	2165	Mine Surveyor
3135	Metal Processing Control Operator	3121	Mine Under-Manager
8121	Metal Processing Plant Operators	8111	Miner
3135	Metal Production Process Controllers	2114	Mineral Analyst
		8112	Mineral And Stone Processing Plant Operators

8114	Mineral Ore Processing Plant Operator	8341	Motorized Forestry Plant Operator
2114	Mineralogist	7231	Motorized Rickshaw Mechanic
8112	Minerals Floating Worker	5113	Mountaineering Guide
8111	Miners And Quarriers	3521	Movie Equipment Technician
3117	Mines Inspector	7323	Multibinder Operator
3117	Mining And Metallurgical Technicians	2166	Multimedia Designer
9311	Mining And Quarrying Laborers	2513	Multimedia Programmer
2146	Mining Engineer	2621	Museum Curator
3117	Mining Engineering Technician	5414	Museum Guard
2146	Mining Engineers, Metallurgists And Related Professionals	5113	Museum Guide
9311	Mining Laborer	1349	Museum Manager
7233	Mining Machinery Fitter	2621	Museum Researcher
7233	Mining Machinery Mechanic	3433	Museum Technician
1322	Mining Managers	6118	Mushroom Cultivator
8111	Mining Plant Operator	2652	Music Composer
3121	Mining Supervisors	2652	Music Conductor
6214	Minor Forest Product Gatherers	2354	Music Teacher
3343	Minutes Agenda Officer	2652	Musical Arranger
7316	Mirror Silverer	2652	Musical Director
2636	Missionaries	7312	Musical Instrument Makers And Tuners
6130	Mixed Crop And Animal Producers	7312	Musical Instrument Tuner
9213	Mixed Crop And Livestock Farm Laborers	3339	Musical Performance Agent
8114	Mixer Operator	2652	Musician
8181	Mixing/Clay & Glass Machine-Operator	2652	Musicians, Singers And Composers
8343	Mobile Crane Operator	2131	Mycologist
8341	Mobile Farm And Forestry Plant Operators	7312	Musical Instrument Tuner
8342	Mobile Plant Operator	3339	Musical Performance Agent
4419	Mobility Practitioner	2652	Musician
8142	Molding Machine Operator (Plastics)	2652	Musicians, Singers And Composers
2131	Molecular Biologist	2131	Mycologist
2131	Molecular Geneticist	<b>N</b>	
4211	Money Changer		
4213	Money Lender	5311	Nanny
6113	Mongo Beans Farmer	7512	Native Cakes/Kakanin Makers
3413	Monk	2230	Naturopath
7321	Monotype Keyboard Operator	2144	Naval Architect
4312	Mortgage Clerk	0110	Naval Officer (Military)
3312	Mortgage Officer	0110	Navy Commander
5142	Mortuary Beautician	2221	Neonatal Nurse
1411	Motel Manager	7318	Net Maker (Hand)
2654	Motion Picture Director	2522	Network Administrator
8331	Motor Coach Driver	2523	Network Analyst
7231	Motor Truck Mechanic	2522	Network Engineer
8211	Motor Vehicle Engine Assembler	1330	Network Manager
7231	Motor Vehicle Mechanic	3513	Network Support Technician
7231	Motor Vehicle Mechanics And Repairers	2212	Neurologist
7231	Motor Vehicle Repairer	2221	Neurology/Neurosurgeon Nurse
7231	Motor Vehicle Service Technician	2212	Neurosurgeon
8321	Motorcycle Driver	4312	New Accounts Clerk
5414	Motorcycle Escort	5221	News Agent
7231	Motorcycle Mechanic	2642	News Analyst
8321	Motorcyclist	2656	News Anchor
8341	Motorized Farm Equipment Operator	2656	News Correspondent/Reporter
8341	Motorized Farm Plant Operator	3431	News Photographer





1120 Organization/Enterprise Executive Assistant  
 1120 Organization/Enterprise Executive Vice-President  
 1221 Organization/Enterprise Marketing Director  
 1120 Organization/Enterprise President  
 1120 Organization/Enterprise Senior Vice-President  
 1120 Organization/Enterprise Special Assistant Supervisor  
 1120 Organization/Enterprise Supervising Governor  
 1120 Organization/Enterprise Vice-President  
 2634 Organizational Psychologist  
 7123 Ornamental Plasterer  
 2261 Orthodontist  
 7534 Orthopaedic Upholsterer  
 7311 Orthopedic Appliance Maker  
 7311 Orthopedic Appliance Repairer  
 7536 Orthopedic Footwear Maker  
 2221 Orthopedic Nurse  
 2264 Orthopedic Physical Therapist  
 3255 Orthopedic Technician  
 2267 Orthoptist  
 3214 Orthotics Technician  
 3214 Orthotist  
 3259 Osteopath  
 6129 Ostrich Farmer  
 6225 Other Aqua Products Producers  
 2355 Other Arts Teachers  
 1113 Other Barangay Officials  
 8160 Other Beverages Machine Operators  
 9129 Other Cleaning Workers  
 2651 Other Creative Or Performing Artists  
 6116 Other Field Crop Farmers  
 2353 Other Language Teachers  
 6121 Other Livestock Farmers  
 6119 Other Market Gardeners And Crop Growers, Not Elsewhere Classified  
 2354 Other Music Teachers  
 3114 Other Optical And Electronic Equipment Operators  
 6117 Other Orchard Farmers  
 2119 Other Physical And Earth Science Professionals  
 5222 Other Sales Supervisors  
 3423 Outdoor Adventure Guide  
 5311 Out-Of-School Hours Care Worker  
 2221 Out-Patient Department Nurse  
 2423 Outplacement Consultant  
 3412 Outreach Project Worker  
 2151 Outside Plant Engineer  
 7512 Oven/Fryer Man  
 3353 Overseas Operations Officer  
 3353 Overseas Worker Welfare Officer

6229 Oyster Diver  
 6221 Oyster Farmer  
 6224 Oysters And Mussels Producers

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7422 Pabx Technician  
 5249 Package Counter Clerk  
 5249 Package Counterman  
 9321 Packer, Hand  
 8183 Packing Machine Operator  
 8183 Packing, Bottling And Labelling Machine Operators  
 2261 Paedodontist  
 2221 Pain Clinic & Oncology Nurse  
 7132 Paint Sprayer, Varnishers  
 7131 Painter  
 7131 Painters And Related Workers  
 8181 Painting Ceramic Machine Operator  
 8181 Painting Glass Machine Operator  
 8172 Painting Machine Operator (Wood)  
 2651 Painting Restorer  
 2355 Painting Teacher  
 5161 Palmist  
 9311 Pan Handler  
 9412 Pantry Attendant  
 6117 Papaya Farmer  
 8171 Paper Bag And Envelope Maker (Machine)  
 8143 Paper Box Cutting- And Creasing-Press Operator  
 7317 Paper Box Maker (Hand)  
 8171 Paper Box Maker (Machine)  
 8143 Paper Box Maker Machine Operator  
 8171 Paper Box-Cutting And Creasing Press Operator  
 7322 Paper Cutting Machine Operator  
 8143 Paper Mache Moulder  
 8143 Paper Machine Moulder  
 8143 Paper Products Machine Operator  
 8171 Paper Pulp Plant Operator  
 3139 Paper Pulp Refinery Operator  
 8219 Paperboard Products Assembler  
 8143 Papermaking Machine Operator (Back/Wet End)  
 8171 Papermaking Plant Operator  
 3134 Paraffin Plant Operator  
 3411 Paralegal  
 2221 Paramedic Nurse  
 2240 Paramedical Practitioners  
 2131 Parasitologist  
 0310 Paratrooper  
 4120 Parish Secretary  
 3413 Parish Workers  
 9613 Park Sweeper  
 9629 Parking Attendant

8322	Parking Valet	5162	Personal Maid
5419	Parks And Games Warden	5169	Personal Services Workers Not Elsewhere Classified
2635	Parole Officer	3423	Personal Trainer
7122	Parquetry Worker	2423	Personnel And Careers Professionals
5243	Party Plan Salesperson	4416	Personnel Clerk
5112	Passenger Car Conductor	3341	Personnel Clerks Supervisor
6117	Passion Fruit Farmer	2423	Personnel Officer
3351	Passport Checking Officer	2423	Personnel Specialist
3354	Passport Issuing Officer	1212	Personnel/Human Resource Manager
2636	Pastor	3142	Pest Control Technician
3434	Pastry Chef	7544	Pest Controller
7512	Pastry Maker	5164	Pet Groomer
7512	Pastry-Cook	5164	Pet Groomers And Animal Care Workers
6122	Pasture In-Charge	2146	Petroleum And Natural Gas Engineer
7125	Patent Roofing Glazier	3117	Petroleum And Natural Gas Extraction Technician
3212	Pathology Laboratory Technician	3134	Petroleum And Natural Gas Refining Plant Operators
3344	Pathology Secretary	3116	Petroleum Engineering Technician
3212	Pathology Technician	3134	Petroleum Process Operator
5321	Patient Care Assistant	2114	Petrologist
3344	Patient Care Secretary	8131	Pharmaceutical And Toiletry Products Machine Operators
5412	Patrol Officer	3213	Pharmaceutical Assistant
7531	Patternmaker	2113	Pharmaceutical Chemist
7536	Pattern-Maker, Footwear	3213	Pharmaceutical Technician
7112	Paver	3213	Pharmaceutical Technicians And Assistants
4213	Pawnbroker	2262	Pharmacist
4213	Pawnbrokers And Money Lenders	2131	Pharmacologist
8342	Pay Loader	3141	Pharmacology Technician
4211	Paymaster	2262	Pharmacy Adviser
4214	Payment Entry Clerk	5329	Pharmacy Aide
4313	Payroll And Timekeeping Specialist	3433	Philatelist
4313	Payroll Clerks	2643	Philologist
4313	Payroll Practitioner	2633	Philosopher
6113	Peanut Farmer	2633	Philosophers, Historians And Political Scientists
6225	Pearl Cultivator	2269	Phlebotomist
6229	Pearl Diver	3431	Photo Editor
6113	Pechay Farmer	3431	Photo Journalist
9520	Peddler	7421	Photocopy Machine Technician
2264	Pediatric Physical Therapist	7316	Photoengraver
2221	Pediatric Ward Nurse	2165	Photogrammetrist
2212	Pediatrician	7322	Photograph Enlarger
5142	Pedicurist	8132	Photograph Printer
7535	Pelt Dressers, Tanners And Fellmongers	3431	Photographers
7535	Pelt Grader	3431	Photographic Color Processor
8219	Pen And Pencil Assembler	7322	Photographic Equipment Repairer
3353	Pensions Officer	7322	Photographic Film And Paper Maker
7234	Perambulator Repairer	8132	Photographic Film Printer
7323	Perfect Binder Operator	8132	Photographic Processor
6119	Perfumery Plant Grower (E.G. Ilang-Ilang Grower And Citronella Grower)	8132	Photographic Products Machine Operators
2261	Periodontist	8132	Photographic-Film Machine Operator
3343	Personal Assistant	7321	Photo-Type-Setting Machine Operator
5322	Personal Care Provider		
1219	Personal Care Services Managing-Proprietor		
5329	Personal Care Workers In Health Services Not Elsewhere Classified		

2634	Psychometrician	7321	Plate Maker (Printing)
3119	Physical And Engineering Science Technicians Not Elsewhere Classified	7213	Plate Metal Worker
2113	Physical Chemist	7321	Plate Mounter (Screen Printing)
2146	Physical Metallurgist	7125	Plate-Glass Glazier
3117	Physical Metallurgy Technician	8181	Plate-Glass Polisher
3255	Physical Rehabilitation Technician	8181	Plate-Glass Rollerman
2264	Physical Therapist	7321	Platen Press Operator
2211	Physician (General)	7322	Platen Pressman
2111	Physicist (General)	2641	Playwright
2111	Physicists And Astronomers	7126	Plumber
3111	Physics Technician	7126	Plumbers And Pipe Fitters
2131	Physiologist	8172	Plywood Core Laying Operator
2264	Physiotherapist	8172	Plywood Press-Operator
3255	Physiotherapy Assistant	7232	Pneudraulic Systems Mechanic (Aircraft)
3255	Physiotherapy Technician	2269	Podiatrist
3255	Physiotherapy Technicians And Assistants	2641	Poet
2652	Pianist	1112	Police Chief Constable
7312	Piano Maker	1112	Police Commissioner
2354	Piano Teacher	3355	Police Detective
2651	Picture Restorer	3355	Police Inquiry Agent
8342	Pile-Driver Operator	3355	Police Inspector
6117	Pili Nut Farmer	1112	Police Inspector-General
0110	Pilot Officer	3355	Police Inspectors And Detectives
3152	Pilot, Ship	5412	Police Officer
9629	Pin Boy	5412	Police Patrol Officer
7126	Pipe Layer	5412	Police Patrolman/Patrolwoman
7212	Pipe Welder	1349	Police Superintendent
7126	Piping Charge Hand	3355	Police/Criminal Investigator
7126	Piping Inspector	5412	Policeman/Policewoman
8153	Piping Operator (Garment)	2422	Policy Administration Professionals
4322	Planning/Materials Clerk	2422	Policy Analyst
7223	Planning-Machine Setter-Operator	1213	Policy And Planning Managers
7412	Plant Electrician	1213	Policy Manager
2141	Plant Engineer	8122	Polishing Metal Machine Operator
2131	Plant Entomologist	2422	Political Adviser
2131	Plant Geneticist	2633	Political Analyst
7233	Plant Maintenance Mechanic	1114	Political Party Leader
3142	Plant Propagation Technician	1114	Political Party President
1311	Plantation Manager	1114	Political Party Senior Official
2131	Plants And Animals Taxonomist	2633	Political Scientist
7123	Plasterer, General	3257	Pollution Control Aide
8142	Plastic Cabling Machine Operator	3257	Pollution Control Officer
8142	Plastic Extrusion Machine Operator	3257	Pollution Inspector
7323	Plastic Laminator	3355	Polygraph Examiner
2145	Plastic Molding Engineer	9216	Pond Aide
8142	Plastic Moulder	8181	Porcelain Ware Kiln Operator
7222	Plastic Pattern Maker	1324	Port Captain
8142	Plastic Product Fabricator	2651	Portrait Painter
8219	Plastic Products Assembler	3431	Portrait Photographer
8142	Plastic Products Machine Operator	4412	Post Carrier
2221	Plastic Surgery Nurse	4211	Post Office Counter Clerk
2145	Plastic Technologist	9621	Post Runner
8219	Plastic Toy Assembler	4412	Postal Clerk
8142	Plastics Boat Builder	4412	Postal Service Supervisors
8142	Plastics Bottle Blowing Machine Operator	4412	Posting/Verifier Clerk
		4412	Postman/Woman

1112	Postmaster General	7322	Press Roller Maker
7314	Potter, General	9121	Presser, Hand
7314	Potters And Related Workers	2212	Preventive Medicine Specialist
7314	Pottery And Porcelain Caster (Hand)	3359	Prices Inspector
7314	Pottery And Porcelain Die-Presser	2636	Priest
7314	Pottery And Porcelain Jiggerman	2240	Primary Care Paramedic
8181	Pottery And Porcelain Kiln-Operator	2211	Primary Health Care Physician
7314	Pottery And Porcelain Maker	2341	Primary School Teachers
7314	Pottery And Porcelain Modeller	8111	Prime Miner Operator
7314	Pottery And Porcelain Presser (Hand)	1324	Principal Customs Broker
7314	Pottery And Porcelain Thrower	7323	Print Finishing And Binding Workers
6126	Poultry Breeder	7322	Printer, Block
6126	Poultry Farmer	7322	Printing Machine Operator
6126	Poultry Producers	7233	Printing Machinery Fitter
3142	Poultry Technical Officer	7233	Printing Machinery Mechanic
6126	Poultry Tender	7322	Printing Quality Inspector
7542	Powder Man	7322	Printing Scheduler
7542	Powder Monkey	8132	Printing/Photography (Black And White) Machine Operator
2151	Power Distribution And Transmission Engineer	8132	Printing/Photography (Color) Machine Operator
2144	Power Plant Engineer	1349	Prison Governor
7233	Power Plant Mechanic	5413	Prison Guard
3115	Power Plant Technician	3411	Private Detective
3131	Power Production Plant Operators	3411	Private Inquiry Agent
3131	Power System Operator	2221	Private Nurse
7232	Powerplant Mechanic (Aircraft)	5414	Private Police Guard
8113	Powertong Operator	3343	Private Secretary
2353	Practical Language Teacher	2635	Probation Officer
3221	Practical Nurse	3139	Process Control Technicians Not Elsewhere Classified
2423	Practicum Coordinator	4322	Processing And Control Clerk
2221	Practitioner Nurse	3331	Processor
3142	Prawn Farm Technician	3323	Procurement Officer
9216	Prawn Hatchery Worker	2163	Product And Garment Designers
6223	Prawn Producers	5242	Product Demonstrator
7313	Precious Metal Leaf Maker	1223	Product Development Manager
7313	Precious Metal Roller	7543	Product Grader
8112	Precipitator	7543	Product Graders And Testers (Except Foods And Beverages)
7223	Precision- Grinding-Machine Setter- Operator	2141	Product Planner
7311	Precision Instrument Maker	3257	Product Safety Inspector
7311	Precision Instrument Repairer	1330	Production & Operations Manager (Communications)
7523	Precision Woodworking Sawyer	1219	Production & Operations Manager (Extra Territorial Organization)
7311	Precision-Instrument Assembler	1311	Production & Operations/Agriculture Manager
7311	Precision-Instrument Makers And Repairers	1323	Production & Operations/Construction Manager
2342	Preparatory School Teacher	1219	Production And Operations/Business Services Manager
7214	Preparer, Structural Metal	1219	Production And Operations/Cleaning Manager
7321	Pre-Press Technicians	1312	Production And Operations/Fishing, Hunting And Forestry Manager
5312	Pre-School Assistant		
2342	Pre-School Teacher		
8160	Preserving Cook, General		
1120	President (Organization/Enterprise)		
1112	President/Vice President Of The Republic Of The Philippines		
3343	Presidential Staff Officer		
4419	Press Clipper		
7322	Press Operator Printing/Cylinder		



0210 Quarter Master (military)  
3152 Quartermaster (shipping)

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2636 Rabbi	4226 Receptionist
7422 Radar Equipment Fitter	7233 Reciprocating Steam-Engine Mechanic
2263 Radiation Protection Expert	2652 Recital Coordinator
2221 Radiation Therapy Nurse	2652 Recording Artist
3521 Radio Broadcasting Equipment Operator	2621 Records Manager
3521 Radio Communication Technician	4110 Records/Personnel Clerk
3521 Radio Controller	2221 Recovery Room Nurse
7422 Radio Equipment Installer	9629 Recreation Facilities Attendant/Aide
7422 Radio Fitter	5113 Recreational Attendant
3521 Radio Frequency Coordinator	2269 Recreational Therapist
2153 Radio Frequency Engineer	1212 Recruitment Manager
7421 Radio Mechanic	3333 Recruitment Officer
3521 Radio Operator	4416 Recruitment Practitioner
2655 Radio Or Television Story Teller	9612 Recycling Worker
3521 Radio Production Technician	2144 Reefer Engineer
3521 Radio Telephone Operator	8350 Reefer Repairman
3521 Radio/Tv Transmitting Equipment Operator	3422 Referee
8159 Radioactive Materials Chemical Processer	2145 Refinery Process Engineer
3211 Radiographer	3134 Refinery Process Technician
2212 Radiologist	8121 Refining/Steel Furnace Operator (Open Hearth Furnace)
3211 Radiology Technician	3255 Reflexologist
2221 Radiotherapeutic Nurse	7112 Refractory Bricklayer
6212 Rafter	7124 Refrigeration And Air-Conditioning Equipment Insulation Worker
9333 Railway & Road Vehicle Loader	7127 Refrigeration Mechanic
8312 Railway Brake, Signal And Switch Operators	7127 Refrigeration Plant Installer
8312 Railway Braker	7127 Refrigeration Plant Mechanic
2142 Railway Construction Engineer	3113 Refrigeration Technician
8311 Railway Engine Driver	9612 Refuse Sorters
5112 Railway Passenger Train Guard	1120 Regional Manager
8312 Railway Shunter	7114 Reinforced Concreter (General)
8312 Railway Signaller	7214 Reinforcing Iron Worker
8312 Railway Signalman	3412 Relief And Rehabilitation Worker
1324 Railway Station Master	2636 Religion Minister
8182 Railway Steam-Engine Fireman	3413 Religious Associate Professionals
8312 Railways Operations/Maintenance Towerman	2636 Religious Professionals
8312 Railways Transport Service Supervisors	3413 Religious Workers
6111 Rainfed, Rice Farmer	2352 Remedial Teacher
6116 Ramie Farmer	2165 Remote Sensing Technologist
7317 Rattan Binder	2221 Renal Transplant Nurse
6214 Rattan Gatherer (With Permit)	5249 Rental Salesperson
2330 Reading And Writing Teacher	7231 Repairman, Motor Vehicle
3334 Real Estate Agents And Property Managers	7322 Repro-Cameraman
3315 Real Estate Appraiser	7322 Reproduction Machine Operator
3334 Real Estate Broker	7421 Reprographic Equipment Technician
3334 Real Property Appraiser	8171 Repulper Operator
3334 Realtor	1223 Research And Development Manager
4110 Receiving Clerk	1223 Research Manager
	4225 Reservation Clerk
	2149 Reservoir And Drilling Engineer
	3334 Resettlement And Development Officer
	2212 Resident Medical Officer In Specialist Training
	2211 Resident Medical Officer Specializing In General Practice

7212 Resistance Welder  
 2269 Respiratory Therapist  
 1412 Restaurant Manager  
 1412 Restaurant Proprietor  
 1420 Retail And Wholesale Trade Managers  
 1420 Retail Manager/ Proprietor  
 2262 Retail Pharmacist  
 3323 Retail Trade Buyer  
 1343 Retirement Village Coordinator  
 7316 Retoucher, Printing Plate  
 3352 Revenue Collection Officer  
 7533 Reviser (Textile And Garments)  
 3142 Rice Farm Technician  
 6111 Rice Farmers  
 7413 Ride Maintenance Mechanic  
 8189 Rides Operator  
 1431 Riding School Manager  
 0310 Rifleman/Woman  
 7215 Rigger  
 7215 Rigger, Gas-Drilling  
 7215 Rigger, Hoisting Equipment, Construction  
 7215 Rigger, Hoisting Equipment, General  
 7215 Rigger, Oil-Drilling  
 7215 Rigger, Ship  
 7215 Riggers And Cable Splicers  
 8151 Ring Spinner  
 8172 Ripsaw Operator  
 2423 Risk Management Analyst  
 7223 Rivet Production Machine Operator  
 7214 Riveter  
 7214 Riveter, Hand  
 7214 Riveter, Machine  
 7214 Riveter, Pneumatic  
 5112 Road Freight Conductor  
 8342 Road Grader And Scraper Operator  
 9312 Road Service Worker  
 8342 Road Surface Laying Machinery Operator  
 8332 Road Train Driver  
 4323 Road Transport Dispatcher  
 8342 Road-Roller Operator  
 3119 Robotics Technician  
 7232 Rocket Engine Component Mechanic  
 3359 Rodent Zone Inspector  
 3135 Rolling Mill Control Operator  
 8111 Roof Bolter (Mining)  
 7121 Roof Fixer  
 7121 Roofers  
 7125 Roofing Glazier  
 9112 Room Attendant  
 6113 Roots Vegetable Farmer  
 7215 Rope And Cable Splicer (General)  
 6118 Rose Grower  
 7322 Rotary Pressman  
 7322 Rotary Printing Press Operator  
 7322 Rotogravure Pressman  
 8343 Rough Terrain Crane Operator

2514 Rpg 400 Programmer  
 8212 Rubber Assembler  
 8141 Rubber Calendar Operator  
 8141 Rubber Milling Machine Operator  
 8141 Rubber Moulder  
 8219 Rubber Products Assembler  
 8141 Rubber Products Machine Operator  
 6117 Rubber Tapper  
 6117 Rubber Tree Farmer

## S

7536 Saddle And Harness Maker  
 7323 Saddle Stitch Operator  
 7536 Saddler  
 2149 Safety Engineer  
 1219 Safety Manager  
 3423 Sailing Instructor  
 8350 Sailor  
 5246 Salad Bar Attendant  
 3322 Sales Analyst  
 3322 Sales And Marketing Assistant  
 1221 Sales And Marketing Managers  
 2431 Sales And Promotion Supervisor  
 5223 Sales Clerk  
 3322 Sales Consultant  
 5222 Sales Coordinator  
 5242 Sales Demonstrators  
 1221 Sales Director  
 2431 Sales Executive  
 5221 Sales Helper/Bagger  
 1221 Sales Manager  
 5242 Sales Merchandiser  
 2433 Sales Representative (Industrial Products)  
 2433 Sales Representative (Medical And  
     Pharmaceutical Products)  
 4120 Sales Secretary  
 3322 Sales Supervisor  
 3322 Sales Supervisors In Wholesale Trade  
 1221 Sales Vice-President  
 5249 Sales Workers Not Elsewhere Classified  
 5221 Salesman/Saleslady  
 5223 Salesperson (Hotel And Restaurant)  
 3334 Salesperson (Real Estate)  
 5223 Salesperson (Retail/Wholesale  
     Establishment)  
 7514 Salted Egg Maker  
 7541 Salvage Frogman  
 8342 Sand Pro Operator  
 7133 Sandblasters, Building Exteriors  
 3257 Sanitarian  
 2149 Sanitary Engineer  
 3257 Sanitary Inspector  
 3114 Satellite Communication Engineering  
     Technician



2149	Satellite Engineer	2413	Securities Consultant
3434	Saucier	3311	Securities Custodian
7514	Sausage Maker	3311	Securities Dealer
7224	Saw Repairer	3311	Securities Operations/Currency Assistant
7224	Saw Sharpener	3311	Securities Salesman
8172	Sawmill Machine Operator	5414	Security Agent
8172	Sawmill Planer Operator	5414	Security Guard
8172	Sawmill Sawyer (General)	5414	Security Patrolman/Patrolwoman
8172	Sawmill Trimmer Operator	2529	Security Specialist (Ict)
2652	Saxophone Player	2114	Seismologist
7119	Scaffolder	1111	Senator
7321	Scanner (Data)	1112	Senior Government Officials
4322	Schedule Clerk (Materials)	1114	Senior Officials Of Special-Interest Organizations
8331	School Bus Driver	5163	Sepulture
2359	School Counselor	2514	Sequel Programmer
2351	School Inspector	0210	Sergeant (Army)
2221	School Nurse	0210	Sergeant Major
1345	School President	3141	Serology Technician
1345	School Principal	5131	Service Crew
1345	School Supervisor	5245	Service Station Attendant
2341	Science And Mathematics Elementary Education Teaching Professionals	5230	Service Station Cashier
2330	Science And Mathematics Teaching Professionals	5230	Service Station Console Operator
3431	Scientific Photographer	1439	Services Managers Not Elsewhere Classified
9612	Scrap Merchant	3432	Set Designer
3230	Scraping And Cupping Therapist	7122	Setter, Marble
7321	Screen Maker	7122	Setter, Mosaic
7322	Screen Printer	7122	Setter, Tile (General)
7322	Screen Printing Press Operator	7223	Setter-Operator, Drilling Machine/Metalworking
4414	Scribe	3132	Sewage Plant Operator
4414	Scribes And Related Workers	8153	Sewing Machine Operator
3435	Script, Girl/Boy	7533	Sewing, Embroidery And Related Workers
2641	Scriptwriter	5153	Sexton
2651	Sculptor	7224	Sharpener, Cutting Instrument
2355	Sculpture Teacher	6121	Shearer
3152	Sea Ship'S Master	6121	Sheep Farmer
6221	Seafood Farmer	7213	Sheet Metal Marker
6228	Seal Trapper	7213	Sheet Metal Worker, Aircraft
8350	Seaman	7213	Sheet Metal Worker, General
0310	Seaman (Navy)	7213	Sheet Metal Worker, Ornamental
8121	Seamless Pipe And Tube Drawer	7213	Sheet Metal Worker, Vehicle
6229	Seamoss Gatherer	7213	Sheet Metal Workers
7531	Seamstress	9334	Shelf Fillers
8350	Seaperson	6121	Shepherd
6222	Seaweeds Producers	3255	Shiatsu Therapist
2353	Second Language Teacher	7212	Shielded Metal Arc Welder
0110	Second Lieutenant (Army)	4323	Ship Boarding Inspector
8350	Second Mate	3151	Ship Building And Repair Technician
2330	Secondary Education Teacher	7412	Ship Electrician
4120	Secretary	3151	Ship Engineer
3311	Securities And Finance Dealers And Brokers	8182	Ship Fireman
3311	Securities And Settlement Officer	7233	Ship Fitter
3311	Securities Broker	8182	Ship Oiler And Greaser
4312	Securities Clerk		

7214	Ship Plater	2354	Singing/Voice Teacher
3521	Ship Radio Operator	6116	Sisal Farmer
5111	Ship Steward	2142	Site Engineer
3152	Ship Wright Appraiser	1323	Site Manager
8182	Ship'S Boiler Operator	3123	Site Manager, Construction
3331	Shipping Agent	7119	Skilled Demolition Worker
3324	Shipping Broker	6111	Skilled Farm Worker (Field Crops)
1324	Shipping Manager	6121	Skilled Farm Worker (Livestock)
3151	Shipping Operations Inspector	6130	Skilled Farm Worker (Mixed Farming)
3152	Shipping Operations Officer	6225	Skilled Fish Farm Worker
5120	Ship'S Cook	6225	Skilled Seafood Farm Worker
8350	Ship'S Deck Crew	3152	Skipper, Yacht
8350	Ships' Deck Crews And Related Workers	7121	Slate Roofer
3151	Ship'S Engineer	7511	Slaughterer
3152	Ship'S Master (Inland Waterways)	5112	Sleeping On Pullman-Car Attendant
3152	Ship'S Navigating Officer	5142	Slimming Consultant
3152	Ships'S Deck Officers And Pilots	7231	Small Engine Mechanic
7115	Shipwright (Wood)	7323	Small Machine Bindery Worker
7536	Shoe Cutter (Hand)	7322	Small Press Operator
7536	Shoe Finisher	8121	Smelting/Metal Furnace Operator (Blast Furnace)
9510	Shoe Polisher/Cleaner	7522	Smoking-Pipe Maker
7536	Shoe Sewer (Machine)	6129	Snail Breeder
7536	Shoemaker	8342	Snow Groomer Operator
7536	Shoemakers And Related Workers	7516	Snuff Maker
8156	Shoemaking And Related Machine Operators	7319	Soap Making
8156	Shoemaking Machine Operator	3353	Social Benefit Officer
7536	Shoes And Bag Repairer	5169	Social Escort
5223	Shop Assistant	3353	Social Insurance Officer
1420	Shop Manager	3353	Social Security Claims Officer
5223	Shop Sales Assistants	3353	Social Security Examiner
5222	Shop Supervisor	3412	Social Welfare Assistant/Aide
5221	Shopkeeper	1344	Social Welfare Managers
1439	Shopping Center Manager	2635	Social Welfare Officer
1312	Shore Captain (Fishing)	2635	Social Work And Counselling Professionals
9411	Short Order Cook	3412	Social Work Associate Professionals
4131	Shorthand Typist	2635	Social Worker
7542	Shotfirers And Blasters	2632	Sociologist
8332	Shuttle-Car Operator (Mine)	2632	Sociologists, Anthropologists And Related Professionals
5113	Sightseeing Guide	2519	Software And Applications Developers And Analyst Not Elsewhere Classified
2643	Sign Language Interpreter	2512	Software Architect
7316	Sign Writers, Decorative Painters, Engravers And Etchers	2512	Software Designer
4413	Signature Verifier	2512	Software Developer
7316	Sign-Maker	2512	Software Engineer
7316	Signwriter	2320	Software Instructor
8189	Silicon Chip Production Machine Operator	2519	Software Tester
8154	Silk Degummer	2356	Software Trainer
8154	Silk Weighter	2142	Soil Mechanics Engineer
7322	Silk-Screen Printer	2132	Soil Scientist
7322	Silk-Screen Stencil Cutter	3142	Soil Technician
6128	Silkworm Farmer (Sericulturist)	3131	Solar Power Plant Operator
7313	Silversmith	7536	Sole Fitter
3143	Silviculture Technician	2611	Solicitor
2132	Silviculturist		
2652	Singer		

1112	Solicitor General	7233	Stationary Engine Fitter
7123	Solid Plasterer	7233	Stationary Engine Greaser
1431	Song Group Manager	7233	Stationary Engine Repairer
3211	Sonographer	8343	Stationary Jib Crane Operator
9612	Sorter, Newspaper And Other Paper Products	8189	Stationary Plant And Machine Operators Not Elsewhere Classified
3521	Sound Technician	3314	Statistical Assistant/Aide
3434	Sous-Chef	4312	Statistical Clerk
6113	Soybeans Farmer	4312	Statistical, Finance And Insurance Clerks
3355	Special Agent	3314	Statistical, Mathematical And Related Associate Professionals
3435	Special Effects Technician	2122	Statistician (Applied Statistics)
2352	Special Need Teachers	2122	Statistician (General)
5243	Special Offer Salesperson	8182	Steam Engine And Boiler Operators
1114	Special-Interest Organization Senior Official	8182	Steam Engine Operator
2212	Specialist Medical Practitioners	8121	Steel Converting Bessemer Furnaceman
2212	Specialist Physician (Internal Medicine)	8121	Steel Converting Oxygen Furnaceman
1219	Specialized Manager	1321	Steel Fabrication Manager
2221	Specialized Nurse	8121	Steel Metal Furnace (Open Hearth Furnaceman)
2266	Speech Pathologist	8121	Steel Refining Electric Arc Furnaceman
2266	Speech Therapist	8121	Steel Roller
2641	Speech Writer	7214	Steelman
8151	Spinning Machine Operator	7119	Steeplejack
8151	Spinning/Thread And Yarn Machine Operator	4131	Steno Recorder
7113	Splitter, Stone	4131	Stenographer
8112	Splitting Stone Machine Operator	4131	Stenographer-Typist
3339	Sports Agent	4131	Stenographic Reporter
1431	Sports And Entertainment Manager	5329	Sterilization Aide
3422	Sports And Games Regulation Officer	8160	Sterilizing Machine Operator (Food)
2656	Sports Announcer	9333	Stevedore
1431	Sports Center Manager	8154	Still Turpentine Operator
3422	Sports Coaches, Instructors And Officials	3134	Still/Petroleum And Natural Gas Refining Operator
2265	Sports Nutritionist	7533	Stitcher
2634	Sports Psychologist	4321	Stock Checker Clerk
3422	Sports Trainor/Instructor	4321	Stock Clerk
2642	Sports Writer	4321	Stock Controller Clerk
1431	Sports, Recreation And Cultural Centre Managers	6121	Stockman/Woman
9121	Spotter (Dry Cleaner)	3311	Stocks And Shares Broker
7132	Spray Painters And Varnishers	8182	Stoker
7132	Spray-Painter, Except Construction	7113	Stone Carver
0110	Squadron Leader	7113	Stone Cutter
9329	Stacker	8112	Stone Cutting Or Processing Machine Operator
2641	Staff Writer	7113	Stone Polisher (Hand Or Hand-Powered Tools)
7411	Stage And Studio Electrician	8114	Stone Polishing Machine Operator
2654	Stage Director	8112	Stone Processing Machine Operator
3435	Stage Manager	8112	Stone Processing Plant Operator
3435	Stage Technician	8112	Stone Treater
7531	Stage Wardrobe Mistress	7113	Stonemason
8155	Staining/Leather Machine Operator	7113	Stonemasons, Stone Cutters, Splitters And Carvers
5211	Stall And Market Salespersons	5211	Store Assistant
5211	Stall Salesperson	5230	Store Cashier
7421	Standard Manual Typewriter Technician		
2659	Stand-Up Comedian		
1345	State University And Colleges President		

9334 Store Helper  
 1221 Store Manager  
 5211 Store Salesperson  
 4321 Storekeeper Clerk  
 4321 Storeroom Clerk  
 1213 Strategic Planning Manager  
 9510 Street And Related Service Workers  
 2653 Street Dancer  
 5212 Street Food Salespersons  
 5212 Street Food Vendor  
 2652 Street Musician  
 2652 Street Singer  
 5211 Street Stall Sales Assistant  
 5211 Street Stall Salesperson  
 9613 Street Sweeper  
 9520 Street Vendors (Excluding Food)  
 9520 Street/Ambulant Non-Food Vendor  
 7322 Stripper, Black And White  
 7322 Stripper, Colored  
 2142 Structural Engineer  
 7214 Structural Metal Maker  
 7214 Structural Metal Preparers And Erectors  
 7131 Structural Steel And Ship Painter  
 7214 Structural Steel Worker  
 7123 Stucco Plasterer  
 2359 Student Advisor  
 7531 Studio Wardrobe Mistress  
 7533 Stuffed Toymaker  
 3435 Stunt Artist  
 3435 Stunt-Coordinator  
 2642 Sub Editor  
 0110 Sublieutenant (Navy)  
 6320 Subsistence Cattle Farmer  
 6340 Subsistence Collector  
 6310 Subsistence Crop Farmers  
 6340 Subsistence Fishers, Hunters, Trappers  
 And Gatherers  
 6320 Subsistence Livestock Farmers  
 6330 Subsistence Mixed Crop And Livestock  
 Farmers  
 6320 Subsistence Slaughterers  
 2643 Subtitler  
 3142 Sugar Farm Technician  
 6114 Sugarcane Farmers/Sakada  
 8219 Sun-Blinds Assembler  
 8171 Supercalendar Operator (plant)  
 8143 Supercalendar Operator (machine)  
 1420 Supermarket Manager  
 5222 Supermarket Supervisor  
 2222 Supervising Midwife  
 4321 Supply Canvasser Clerk  
 1324 Supply Chain Manager  
 4321 Supply Checker Clerk  
 1324 Supply Manager  
 1324 Supply, Distribution And Related  
 Managers

8212 Surface Mount Technology Machine  
 Operator  
 2212 Surgeon  
 5321 Surgery Attendant  
 7311 Surgical Instrument Maker  
 2221 Surgical Nurse  
 2240 Surgical Technician  
 5414 Surveillance Officer  
 4227 Survey And Market Research  
 Interviewers  
 4227 Survey Interviewer  
 2122 Survey Statistician  
 3112 Surveying Technician  
 7215 Suspension Bridge Cable Worker  
 9613 Sweepers And Related Laborers  
 6113 Sweet Potato Farmer  
 9129 Swimming Pool Cleaner  
 7422 Switchman (Central Office Equipment  
 Technician)  
 8159 Synthetic Fiber Production Plant  
 Operator  
 7514 Syrup Man  
 2522 System Administrator  
 2511 Systems Analyst  
 2511 Systems Consultant  
 2511 Systems Designer (It)  
 2519 Systems Tester

## T

7531 Tailor  
 7531 Tailors, Dressmakers, Furriers And  
 Hatters  
 7535 Tanner  
 8155 Tanning Machine Operator  
 7318 Tapestry Maker (Hand)  
 8342 Tar Spreading Machine Operator  
 3352 Tariff Analyst  
 3435 Tattooist  
 2411 Tax Accountant  
 4312 Tax Clerk  
 3352 Tax Enforcer  
 3352 Tax Finance Officer  
 3352 Tax Mapping Examiner  
 3352 Tax Officer  
 3352 Tax Researcher  
 3352 Tax Specialist  
 3352 Taxation Analyst  
 3352 Taxation Inspector  
 8322 Taxi/Fx Driver  
 3433 Taxidermist  
 6117 Tea Farmer  
 8160 Tea Processing Machine Operator  
 7515 Tea Taster  
 2352 Teacher For The Abnormal Children

2359	Teacher For The Exceptionally Intelligent	3114	Telephone Technician
2352	Teacher For The Mentally Handicapped	4110	Teleprinter Clerk
2352	Teacher For The Physically Handicapped	8212	Television Assembler
2320	Teacher In Home Industries	7422	Television Fitter
2320	Teacher In Industrial Arts	7421	Television Mechanic
2320	Teacher In Trades	1222	Television Program Producer
2352	Teacher Of Gifted Children	1222	Television Stations Manager
2352	Teacher Of Hearing Impaired	4110	Telex Clerk
2352	Teacher Of Sight Impaired	8121	Temperer
5312	Teachers' Aides	3322	Tender And Pricing Analyst
5312	Teacher'S Assistant	8112	Tender Jig Machines Operator
2351	Teaching Aids Specialist	8159	Tent Making Machine Operator
2265	Teaching Dietician	3351	Terminal Operations Specialist
2359	Teaching Fellow	7114	Terrazzo Worker
2359	Teaching Professionals Not Elsewhere Classified	2149	Test Engineer
3322	Technical And Commercial Representative	3119	Test Technician
2433	Technical And Medical Sale Professionals (Excluding Ict)	8154	Textile Bleacher
3118	Technical Illustrator	8154	Textile Calendar Operator
4416	Technical Recruiter	7224	Textile Card Grinder
2433	Technical Sales Representative	7532	Textile Cutter
3322	Technical Service Adviser	8154	Textile Dyeing Machine Operator
2654	Technical Television Or Radio Director	8151	Textile Fibre Combing Machine Operator
2641	Technical Writer	8154	Textile Fuller
9329	Technician Helper	7233	Textile Machinery Fitter
7422	Telecommunication Equipment Installer	8159	Textile Pattern Making Machine Operator
7422	Telecommunication Equipment Repairer	7532	Textile Patternmaker
2153	Telecommunications Engineer	7322	Textile Printer
3522	Telecommunications Engineering Technicians	8219	Textile Products Assembler
2153	Telecommunications Engineering Technologist	8154	Textile Shrinker
7422	Telecommunications Line Worker	8154	Textile Washer
1330	Telecommunications Services Manager	8159	Textile, Fur And Leather Products Machine Operators Not Elsewhere Classified
2153	Telecommunications Specialist	7121	Thatcher Roofer
7422	Telecommunications Technician	1431	Theatre Manager
4110	Telefax Clerk	2654	Theatre Producer
4412	Telegram Carrier	3435	Theatre Technician
4412	Telegraph Carrier	3339	Theatrical Agent
7422	Telegraph Installer	3435	Theatrical Dresser
1219	Telegraph Manager	7215	Theatrical Rigger
7422	Telegraph Repairman	2265	Therapeutic/Clinic Dietician
3521	Telegrapher	8182	Thermal Plant Operator
4211	Telegraphic Transfer Service Clerk	7212	Thermite Welder
5244	Telemarketer	8171	Thermo-Mechanical Pulp Assistant Operator
1221	Telemarketing Manager	8219	Thermos Bottle Assembler
5244	Telemarketing Salesperson	8350	Third Mate
2431	Telemarketing Supervisor	7318	Thread And Yarn Spinner
8212	Telephone Assembler	7318	Threader, Loom (Hand)
7422	Telephone Installer And Repairman	5230	Ticket Checker
1219	Telephone Manager	5230	Ticket Collector/Teller
7422	Telephone Mechanic	9629	Ticket Collectors
4223	Telephone Operator	5230	Ticket Custodian
5244	Telephone Salesperson	5112	Ticket Inspector (Public Transport)
4223	Telephone Switchboard Operator	5230	Ticket Issuing Clerk (Entertainment And Sporting Event)

5230	Ticket Issuing Clerk (Except Parcel)	3222	Traditional Midwife
4221	Ticket Issuing/Travel Clerk	5419	Traffic Aide
5230	Ticket Sorter/Encoder	5419	Traffic Enforcer
6221	Tilapia Farm Producer	2164	Traffic Planner
7122	Tile Layer (Composition)	8332	Trailer Driver
7121	Tile Roofer	5112	Train Conductor
8341	Timber Carrier Driver	4323	Train Dispatcher
6212	Timber Inspector	8311	Train Driver Including Light Rail Transit (Lrt) And Metro Rail Transit (Mrt)
2141	Time And Motion Engineer	7231	Train Engine Fitter
2149	Time And Motion Study Engineer	7231	Train Engine Repairer
3119	Time And Motion Study Technician	2424	Training And Staff Development Professionals
4110	Timekeeper Clerk	1212	Training Center Manager
7213	Tinsmith	2424	Training Coordinator
8141	Tire Maker	2424	Training Facilitator
8141	Tire Production Machine Operator	1212	Training Manager
8141	Tire Repairer	2424	Training Officer
3141	Tissue Culture Technician	5112	Tram Conductor
3411	Title Searcher	8331	Tram Driver
7516	Tobacco Blender	7412	Transformer Repairman
7516	Tobacco Conditioner Operator	2643	Translator
7516	Tobacco Cutting Machine Operator	2643	Translator Reviser
6116	Tobacco Farmer	2643	Translators, Interpreters And Other Linguists
7516	Tobacco Preparer	2152	Transmission Engineer
7516	Tobacco Preparers And Tobacco Products Makers	7413	Transmission Technician
8160	Tobacco Processing Machine Operator	3521	Transmitter Technician
7516	Tobacco Stripper (Hand)	3521	Transmitting Equipment Operator
7516	Tobacco Stripper (Machine)	3521	Transmitting Equipment Technician
7516	Tobacco/Cigar Grader	4323	Transport Clerks
5230	Toll Fee Collector/Teller	5112	Transport Conductor
6113	Tomato Farmer	7412	Transport Electrician
7224	Tool And Cutter Grinder	1324	Transport General Manager
7224	Tool Grinder, Machine Tool	3352	Transport Tax Processor
7223	Tool Production Machine Operator	6228	Trapper
7224	Tool Sharpener	9215	Trapping Laborer
7222	Toolmaker	1439	Travel Agency Manager
7222	Toolmaker Foreman	4221	Travel Agency Clerk
7222	Toolmakers And Related Workers	5111	Travel Attendant
8113	Toolpusher	5111	Travel Attendants And Travel Stewards
5113	Tour Escort	4221	Travel Consultant
8113	Tourpusher	4221	Travel Consultants And Clerks
8344	Tower Crane Operator	5113	Travel Guides
7215	Tower Rigger	4221	Travel Organizer
2164	Town And Traffic Planners	5111	Travel Steward
2164	Town Planner	3351	Travel Tax Officer
2113	Toxicologist	4221	Travel/Airlines Clerk
8341	Tractor Driver	5113	Travel/Tour Guide
3324	Trade Broker	1312	Trawler Manager
1114	Trade Union President	6227	Trawler Skipper
1114	Trade Union Secretary-General	1112	Treasurer Of The Philippines
1114	Trade Union Senior Official	4312	Treasury Clerk
3230	Traditional And Complementary Medicine Associate Professionals	8172	Treating Wood Machine Operator
2230	Traditional And Complementary Medicine Professionals	6117	Tree And Shrub Crop Growers
1113	Traditional Chiefs And Heads Of Villages	8341	Tree Faller Operator

6212 Tree Feller  
 6212 Tree Marker  
 9215 Tree Planter  
 9215 Tree Trapper  
 8342 Trench-Digging Machine Operator  
 3413 Tribal Ritualists (E.G. Mambunong, Mumbaki, Mabaki, Mensapo And Anituwan In Cordilleras)  
 1113 Tribe Chieftain  
 8321 Tricycle Driver  
 7531 Trimmer  
 8331 Truck Driver  
 9333 Truck Helper  
 8343 Truck Mounted Crane Operator  
 2652 Trumpet Player  
 8350 Tug Hand  
 3152 Tug Man  
 8211 Turbine Assembler  
 7233 Turbine Fitter (Except Aircraft And Marine)  
 7233 Turbine Mechanic (Except Aircraft And Marine)  
 2514 Turbo Pascal Programmer  
 6126 Turkey Farmer  
 3521 Tv Broadcasting Equipment Operator  
 3211 Tv Microscopist Technician  
 2642 Tv News Producer  
 2642 Tv/Radio News Reporter  
 8151 Twisting/Thread And Yarn Machine Operator  
 4413 Type Reader  
 7321 Type-Casting Machine Operator  
 7321 Typesetter  
 4120 Typing Secretary  
 4131 Typists And Word Processing Operators

## U

6113 Ube Farmer  
 3211 Ultrasound Machine Technician  
 2230 Unani Practitioner  
 8311 Underground Train Driver  
 5163 Undertaker  
 5163 Undertakers And Embalmers  
 7541 Underwater Divers  
 3423 Underwater Diving Instructor  
 7541 Underwater Worker  
 3321 Underwriting And Claims Head  
 2310 University And Higher Education Teachers  
 1120 University Chancellor  
 2310 University Lecturer  
 7534 Upholsterer  
 7534 Upholsterer, Furniture And Automotive  
 7534 Upholsterer, Vehicle  
 7534 Upholsterers And Related Workers

7132 Upholstery Painter  
 6111 Upland, Rice Farmer  
 7536 Uppers Preparer  
 2164 Urban Planner  
 2221 Urology Nurse  
 9629 Usher  
 5169 Usher/Usherette

## V

5162 Valet  
 3315 Valuer  
 3315 Valuers And Loss Assessors  
 8322 Van Driver  
 7515 Vegetable Grader  
 7514 Vegetable Preserver  
 6113 Vegetable, Legumes And Root Crops Farmers  
 8211 Vehicle Assembler  
 9122 Vehicle Cleaners  
 7412 Vehicle Electrician  
 7125 Vehicle Glazier  
 7132 Vehicle Painter  
 9122 Vehicle Washer (Hand)  
 3257 Vehicles/Pollution Inspector  
 9623 Vending Machine Collector  
 7522 Veneer Applier  
 8172 Veneer Cutter  
 7521 Veneer Dryer Tender  
 7126 Ventilation Pipe Fitter  
 2659 Ventriloquist  
 3343 Verbatim Reporter  
 3412 Veterans Assistance Officer  
 2250 Veterinarian  
 5164 Veterinary Aide  
 3240 Veterinary Assistant  
 2250 Veterinary Epidemiologist  
 2250 Veterinary Intern  
 3240 Veterinary Laboratory Technician  
 3240 Veterinary Nurse  
 2250 Veterinary Surgeon  
 3240 Veterinary Technician  
 3240 Veterinary Technicians And Assistants  
 3240 Veterinary Vaccinator  
 7421 Video Electronics (Vhs, Vcd, Dvd) Service/Repairman  
 3521 Video Operator  
 3521 Video Technician  
 3521 Videographer  
 3230 Village Healer  
 3253 Village Health Worker  
 1113 Village/Tribe Head  
 2652 Violinist  
 2131 Virologist  
 6117 Viticulturist

2651 Visual Artists  
 2514 Visual Basic Programmer  
 2514 Visual Foxpro Programmer  
 2514 Visual Interdev Programmer  
 3432 Visual Merchandiser  
 2652 Vocal Group Conductor  
 2652 Vocalist  
 2320 Vocational Education Teacher  
 1345 Vocational School Administrator  
 2423 Vocational/Guidance Counsellor  
 2351 Voice And Accent Teacher  
 2114 Volcanologist  
 3222 Volunteer Midwife  
 3412 Volunteer Service Officer  
 8141 Vulcanize

## W

3359 Wage Inspector  
 4313 Wages/Payroll Clerk  
 5131 Waiter, Formal Service  
 5131 Waiter, General  
 5131 Waiter/Waitress  
 3435 Walker-On  
 7122 Wall And Floor Tiler  
 7131 Wall Paperhanger  
 7322 Wallpaper Printer  
 5413 Warden  
 5153 Warehouse Aide  
 4321 Warehouse Clerk  
 3351 Warehouse Inspector  
 1324 Warehouse Manager  
 9333 Warehouse Porter  
 3351 Warehouse Shipping Officer  
 0210 Warrant Officer  
 9612 Waste Picker  
 3132 Waste Water Operator  
 7311 Watch And Clock Assembler  
 7311 Watch And Clock Repairer  
 8212 Watch Assembler  
 5414 Watchman/Watchwoman  
 9624 Water And Firewoods Collector  
 9129 Water Blater  
 9624 Water Collector  
 2133 Water Quality Analyst  
 3132 Water Treatment Plant Operator  
 6211 Watershed Forester  
 3132 Waterworks Technician  
 2112 Weather Forecaster  
 2112 Weather Observer  
 7318 Weaver  
 8152 Weaving And Knitting Machine Operators  
 8152 Weaving Machine Operator  
 2513 Web And Multimedia Developers  
 2166 Web Designer  
 3511 Web Offset Operator  
 7322 Web Press Operator  
 3514 Web Technicians  
 3514 Webmaster  
 3514 Website Administrator  
 2513 Website Architect  
 2513 Website Developer  
 3514 Website Technician  
 3332 Wedding Planner  
 7544 Weed Controller  
 4321 Weighing Clerk  
 3359 Weights And Measures Inspector  
 7212 Welder  
 7212 Welders And Flame Cutters  
 1344 Welfare Centre Manager  
 1212 Welfare Manager  
 3412 Welfare Support Worker  
 8113 Well Borer  
 8113 Well Cable Tools Driller  
 8113 Well Driller  
 8113 Well Drillers And Borers And Related Workers  
 8113 Well Testing Crew  
 6228 Whale Hunter  
 8342 Wheel Loader Operator  
 7234 Wheelchair Repairer  
 7522 Wheel-Wright  
 6113 White Potato (Irish Potato) Farmer  
 1420 Wholesale Trade Manager/Proprietor  
 7317 Wicker Furniture Maker  
 6214 Wild Honey And Beeswax Gatherer  
 6214 Wild Orchids Gatherer  
 8343 Winch Operator  
 8151 Winding/Thread And Yarn Machine Operator  
 9123 Window Cleaner  
 3432 Window Dresser  
 7515 Wine Taster  
 0110 Wing Commander  
 9122 Wiper  
 3230 Witch Doctor  
 3412 Women'S Shelter Supervisor  
 2635 Women'S Welfare Organizer  
 7115 Wood And Sash Maker  
 7317 Wood Carver  
 7132 Wood Finisher, Furniture  
 8172 Wood Grader  
 7523 Wood Lathe Setter-Operator  
 7521 Wood Painting Machine Operator  
 7522 Wood Patternmaker  
 8172 Wood Processing Plant Operator  
 8219 Wood Products Assembler  
 7523 Wood Products Machine Operator  
 7523 Wood Routing Machine Setter-Operator  
 7521 Wood Seasoner  
 7521 Wood Seasoning Worker



2113 Wood Technologist  
7521 Wood Treater  
7521 Wood Treating Worker  
7523 Wood Turner  
7522 Wooden Furniture Finisher  
7522 Wooden Model Maker  
7523 Wood-Planing Machine Setter-Operator  
8172 Wood-Processing Plant Sawyer  
7523 Wood-Shaping Machine Setter-Operator  
7523 Wood-Spindle-Carving Machine Setter-  
Operator  
7523 Woodworking Lathe Operator  
7523 Woodworking Machine Setter-Operator  
7523 Woodworking Machine Tool Setters And  
Operators  
7233 Woodworking Machinery Fitter  
7233 Woodworking Machinery Mechanic  
8154 Wool Carbonizer  
7543 Wool Classer  
7318 Wool Scourer  
4131 Word Processing Clerk  
4120 Word Processing Secretary  
4131 Word Processor  
3333 Worker Welfare Assistant  
2424 Workforce Development Specialist  
9321 Wrapper, Hand  
8183 Wrapping Machine Operator  
2641 Writer

## YZ

8350 Yacht Crew  
8154 Yarn Dyer  
3412 Youth Development Assistant  
1411 Youth Hostel Manager  
3412 Youth Worker  
3257 Zoning Inspector  
2164 Zoning Officer  
5164 Zoo Keeper  
2131 Zoologist  
3141 Zoology Technician





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*Magpabilang. Magpa-Census!*