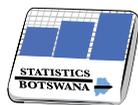


# Botswana Standard Classification of Occupations

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## STATISTICS BOTSWANA

# **Botswana Standard Classification of Occupations**

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## Preface

This publication presents the structure and definitions of all occupation groups in the Botswana Standard Classification of Occupations (BOSCO). This version of BOSCO has been revised in line with ISCO-08 which has been developed to facilitate international comparison of occupational statistics and to serve as a model for countries developing or revising their national occupational classifications.

ISCO -08 was adopted as a resolution of a tripartite Meeting of Experts on Labour Statistics on updating the International Standard Classification of Occupations (ISCO). This meeting was convened by the Governing Body of the International Labour Office (ILO) in accordance with the resolution, in 2003. The resolution of the Meeting of Experts was endorsed by the Governing Body in March 2008

The first version of ISCO was adopted in 1957 by the Ninth International Conference of Labour Statisticians (ICLS). It is known as ISCO-58. This version was superseded by ISCO-68, which was adopted by the Eleventh ICLS in 1966. The third version, ISCO-88, was adopted by the Fourteenth ICLS in 1987.

ISCO has recently been updated to take into account developments in the world of work since 1988. The updating did not change the basic principles and top structure of ISCO-88 but significant structural changes were made in some areas. The updated classification was adopted in December 2007 and is known as ISCO-08. Many countries are now updating their national classification either based on ISCO-08 or to improve alignment with the new international statistical standard (<http://www.ilo.org/public/english/bureau/stat/isco/>).

Statistics Botswana, as an organisation mandated to produce official statistics, is obliged to come up with national classifications which are in line with the international standards hence the adaptation of the ISCO-08 in drawing up the BOSCO-08. Users who might require more information may send their requirements to the organisation.

Statistics Botswana would like to acknowledge the contribution of all stakeholders such as Government Ministries and Departments, Parastatal Organisations, Private Organisations and Development Partners towards the success of the development of this revised version.



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**A.N. Majelantle**  
**Statistician General**

March 2016

## Introduction to Revision and Adaption of Botswana Standard Classification of Occupations (BOSCO)

BOSCO Rev 4 has been adapted from the ISCO -08. Previously Botswana was using the BOSCO Rev 3 which was adapted from the ISCO-88. The following are the changes that have been noticed as a result of the migration.

### Major changes from ISCO Rev 88 to ISCO Rev 08

1. BOSCO Revision 2008 has been migrated to 4-digits instead of 3-digits used in Revision 1988. This was meant to conform to International standards. The advantage of migrating to Rev 4 is that it is more detailed and disaggregated than Rev 3. It also allows for the production of relatively detailed internationally comparable data as well as summary information.

The revision is now categorized as follows:

- a. Major Group – one (1) digit code
  - b. Sub Major Group – two (2) digit code
  - c. Minor Group – three (3) digit code
  - d. Unit level (actual code) – four (4) digit code
2. Code 1224 under Minor Group 122 has been introduced to cater for Small Business Managers such as managers for Small General Dealers, Butchers, and Tuck-shops etc.
3. New Sub Major Groups, 25 and 35 have been introduced (Internationally), under Professionals and Technicians Groups respectively to cater for 'Information and Communications Technology'. This has been an emerging sector in the past 10 years or so.
4. Sub Major Group 36, 'Primary, Pre-Primary, Vocational and Technical Education Teachers' is applicable to Botswana situation, thus introduced to cater for technicians in the Education sector.

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**BOTSWANA STANDARD OCCUPATIONAL CODING SCHEME-REV 2008**

<b>1 MANAGERS</b>		
<b>11 Chief Executives, Senior Officials and Legislators</b>		
<b>Minor Group</b>	<b>Unit Level</b>	<b>Description</b>
111		Legislators and Senior Officials
	1111	Legislators( e.g Members of Parliament)
	1112	Senior Government Officials
	1113	Traditional Chiefs and Heads of Villages (inc. Other Community Leaders)
	1114	Senior Administrators of Special-Interest Organisations
112		Managing Directors and Chief Executives
	1120	Managing Directors and Chief Executives
<b>12 Administrative and Commercial Managers</b>		
<b>Minor Group</b>	<b>Unit Level</b>	<b>Description</b>
121		Business Services and Administration Managers
	1211	Finance Managers
	1212	Human Resource Managers
	1213	Policy and Planning Managers
	1219	Business Services and Administration Managers NEC
122		Sales, Marketing and Development Managers
	1221	Sales and Marketing Managers
	1222	Advertising and Public Relations Managers
	1223	Research and Development Managers
	1224	Small Business Managers (S)
<b>13 Production and Specialised Services Managers</b>		
<b>Minor Group</b>	<b>Unit Level</b>	<b>Description</b>
131		Production Managers in Agriculture, Forestry and Fisheries
	1311	Agriculture and Forestry Production Managers
	1312	Aquaculture and Fisheries Production Managers
132		Manufacturing, Mining, Construction and Distribution Managers
	1321	Manufacturing Managers
	1322	Mining Managers
	1323	Construction Managers
	1324	Supply, Distribution and Related Managers
133	1330	Information and Communications Technology Services Managers
134		Professional Services Managers
	1341	Child Care Services Managers
	1342	Health Services Managers
	1343	Aged Care Services Managers
	1344	Social Welfare Managers
	1345	Education Managers
	1346	Financial and Insurance Services Branch Managers
	1349	Professional Services Managers NEC

<b>14 Hospitality, Retail and Other Services Managers</b>		
<b>Minor Group</b>	<b>Unit Level</b>	<b>Description</b>
141		Hotel and Restaurant Managers
	1411	Hotel Managers
	1412	Restaurant Managers
142	1420	Retail and Wholesale Trade Managers
143		Other Services Managers
	1431	Sports, Recreation and Cultural Centre Managers
	1439	Other Services Managers NEC
<b>2 PROFESSIONALS</b>		
<b>21 Science and Engineering Professionals</b>		
<b>Minor Group</b>	<b>Unit Level</b>	<b>Description</b>
211		Physical and Earth Science professionals
	2111	Physicists and Astronomers
	2112	Meteorologists
	2113	Chemists
	2114	Geologists and Geophysicists
212	2120	Mathematicians, Actuaries and Statisticians
213		Life Science Professionals
	2131	Biologists, Botanists, Zoologists and Related Professionals
	2132	Farming, Forestry and Fishery Advisors
	2133	Environmental Protection Professionals
214		Engineering Professionals (excluding Electro-Technology)
	2141	Industrial and Production Engineers
	2142	Civil Engineers
	2143	Environmental Engineers
	2144	Mechanical Engineers
	2145	Chemical Engineers
	2146	Mining Engineers, Metallurgists and Related Professionals
	2149	Engineering Professionals Not Elsewhere Classified (NEC)
215		Electro-technology Engineers
	2151	Electrical Engineers
	2152	Electronics Engineers
	2153	Telecommunications Engineers
216		Architects, Planners, Surveyors and Designers
	2161	Building Architects
	2162	Landscape Architects
	2163	Product and Garment Designers
	2164	Town and Traffic Planners
	2165	Cartographers and Surveyors
	2166	Graphic and Multi Media Designers

**22 Health Professionals**

Minor Group	Unit Level	Description
221		Medical Doctors
	2211	Generalist Medical Practitioners
	2212	Specialist Medical Practitioners
222		Nursing and Midwifery Professionals
	2221	Nursing Professionals
	2222	Midwifery Professionals
223	2230	Traditional and Complimentary Medicine Professionals
224	2240	Paramedical Practitioners
225	2250	Veterinarians
226		Other Health Professionals
	2261	Dentists
	2262	Pharmacists
	2263	Environmental and Occupational Health and Hygiene Professionals.
	2264	Physiotherapists
	2265	Dieticians and Nutritionists
	2266	Audiologists and Speech Therapists
	2267	Optometrists and Ophthalmic Opticians
	2269	Other Health Professionals Not Elsewhere Classified

**23 Teaching Professionals**

Minor Group	Unit Level	Description
231	2310	University and Higher Education Teachers
232	2320	Vocational and Technical Education Teachers
233	2330	Secondary Education Teachers
234		Primary School and Early Childhood Teachers
	2341	Primary School Teachers
	2342	Early Childhood Educators
235		Other Teaching Professionals
	2351	Education Methods Specialist
	2352	Special Needs Teachers
	2353	Other Language Teachers
	2354	Other Music Teachers
	2355	Other Arts Teachers
	2356	Information Technology Teachers
	2359	Other Teaching Professionals Not Elsewhere Classified

**24 Business and Administration Professionals**

Minor Group	Unit Level	Description
241		Finance Professionals
	2411	Accountants
	2412	Financial and Investment Advisors
	2413	Financial Analysts
242		Administration Professionals
	2421	Management and Organisation Analysts
	2422	Policy Administration Professionals
	2423	Personnel and Careers Professionals

	2424	Training and Staff Development Professionals
243		Sales, Marketing and Public Relations Professionals
	2431	Advertising and Marketing Professionals
	2432	Public Relations Professionals
	2433	Technical and Medical Sales Professionals (Exc. ICT)
	2434	Information and Communication Technology Sales Professionals
<b>25 Information and Communications Technology Professionals</b>		
<b>Minor Group</b>	<b>Unit Level</b>	<b>Description</b>
251		Software and Applications Developers and Analysts
	2511	Systems Analysts
	2512	Software Developers
	2513	Web and Multimedia Developers
	2514	Applications Programmers
	2519	Software and Applications Developers and Analysts NEC
252		Database and Network Professionals
	2521	Database Designers and Administrators
	2522	Systems Administrators
	2523	Computer Network Professionals
	2529	Database and Network Professionals NEC
<b>26 Legal, Social and Cultural Professionals</b>		
<b>Minor Group</b>	<b>Unit Level</b>	<b>Description</b>
261		Legal Professionals
	2611	Lawyers
	2612	Judges
	2619	Legal Professionals Not Elsewhere Classified
262		Librarians, Archivists and Curators
	2621	Archivists and Curators
	2622	Librarians and Related Information Professionals
263		Social and Religious Professionals
	2631	Economists
	2632	Sociologists, Anthropologists, and related Professionals
	2633	Philosophers, Historians and Political Scientists
	2634	Psychologists
	2635	Social Work and Counselling Professionals
	2636	Religious Professionals
264		Authors, Journalists and Linguists
	2641	Authors and Related Writers
	2642	Journalists
	2643	Translators, Interpreters and Other Linguists
265		Creative and Performing Arts
	2651	Visual Artists
	2652	Musicians, Singers and Composers
	2653	Dancers and Choreographers
	2654	Film, Stage and Related Directors and Producers
	2655	Actors
	2656	Announcers on Radio, Television and Other Media
	2659	Creative and Performing Artists Not Elsewhere Classified

### 3 TECHNICIANS AND ASSOCIATE PROFESSIONALS

#### 31 Science and Engineering Associate Professionals

Minor Group	Unit Level	Description
311		Physical and Engineering Science Technicians
	3111	Chemical and Physical Science Technicians
	3112	Civil Engineering Technicians
	3113	Electrical Engineering Technicians
	3114	Electronics Engineering Technicians
	3115	Mechanical Engineering Technicians
	3116	Chemical Engineering Technicians
	3117	Mining and Metallurgical Technicians
	3118	Draughts-Persons
	3119	Physical and Engineering Science Technicians Not Elsewhere Classified
312		Mining, Manufacturing and Construction Supervisors
	3121	Mining Supervisors
	3122	Manufacturing Supervisors
	3123	Construction Supervisors
313		Process Control Technicians
	3131	Power Production Plant Operators
	3132	Incinerator and Water Treatment Plant Operators
	3133	Chemical Processing Plant Operators
	3134	Petroleum and Natural Gas Refining Plant Operators
	3135	Metal Production Process Controllers
	3139	Process Control Technicians Not Elsewhere Classified
314		Life Science Technicians and Related Associate Professionals
	3141	Life Science Technicians (excluding Medical)
	3142	Agricultural Technicians
	3143	Forestry Technicians
315		Ship and Aircraft Controllers and Technicians
	3153	Aircraft Pilots and Related Associate Professionals
	3154	Air Traffic Controllers
	3155	Air Traffic Safety Electronics Technicians

#### 32 Health Associate Professionals

Minor Group	Unit Level	Description
321		Medical and Pharmaceutical Technicians
	3211	Medical Imaging and Therapeutic Equipment Technicians
	3212	Medical and Pathology Laboratory Technicians
	3213	Pharmaceutical Technicians and Assistants
	3214	Medical Dental Prosthetic Technicians
322		Nursing and Midwifery Associate Professionals
	3221	Nursing Associate Professionals
	3222	Midwifery Associate Professionals
323	3230	Traditional and Complementary Medicine Associate Professionals
324	3240	Veterinary Technicians and Assistants
325		Other Health Associate Professionals

	3251	Dental Assistants and Therapists
	3252	Medical Records and Health Information Technicians
	3253	Community Health Workers
	3254	Dispensing Opticians
	3255	Physiotherapy Technicians and Assistants
	3256	Medical Assistants
	3257	Environmental and Occupational Health Inspectors and Associates
	3258	Ambulance Workers
	3259	Health Associate Professionals Not Elsewhere Classified
<b>33 Business and Administration Associate Professionals</b>		
<b>Minor Group</b>	<b>Unit Level</b>	<b>Description</b>
331		Financial and Mathematical Associate Professionals
	3311	Securities and Finance Dealers and Brokers
	3312	Credit and Loans Officers
	3313	Accounting Associate Professionals
	3314	Statistical, Mathematical and Related Associate Professionals
	3315	Valuers and Loss Assessors
332		Sales and Purchasing Agents and Brokers
	3321	Insurance Representatives
	3322	Commercial Sales Representatives
	3323	Buyers
	3324	Trade Brokers
333		Business Services Agents
	3331	Clearing and Forwarding Agents
	3332	Conference and Event Planners
	3333	Employment Agents and Contractors
	3334	Real Estate Agents and Property Managers
	3339	Business Services Agents Not Elsewhere Classified
334		Administrative and Specialised Secretaries
	3341	Office Supervisors
	3342	Legal Secretaries
	3343	Administrative and Executive Secretaries
	3344	Medical Secretaries
335		Government Regulatory Associate Professionals
	3351	Customs and Border Inspectors
	3352	Government Tax and Excise Officials
	3353	Government Social Benefits Officials
	3354	Government Licensing Officials
	3355	Police Inspectors and Detectives
	3359	Government Regulatory Associate Professionals Not Elsewhere Classified

<b>34 Legal, Social, Cultural and Related Associate Professionals</b>		
<b>Minor Group</b>	<b>Unit Level</b>	<b>Description</b>
341		Legal, Social and Religious Associate Professionals
	3411	Legal and Related Associate Professionals
	3412	Social Work Associate Professionals
	3413	Religious Associate Professionals
342		Sports and Fitness Workers
	3421	Athletes and Sports Players
	3422	Sports Coaches, Instructors and Officials
	3423	Fitness and Recreation Instructors and Programme Leaders
343		Artistic, Cultural and Culinary Associate Professionals
	3431	Photographers
	3432	Interior Designers and Decorators
	3433	Gallery, Museums and Library Technicians
	3434	Chefs
	3435	Other Artistic and Cultural Associate Professionals
<b>35 Information and Communications Technicians</b>		
<b>Minor Group</b>	<b>Unit Level</b>	<b>Description</b>
351		Information and Communications Technology Operations and User Support Technicians
	3511	Information and Communications Technology Operations Technicians
	3512	Information and Communications Technology User Support Technicians
	3513	Computer Network and Systems Technicians
	3514	Web Technicians
352		Telecommunications and Broadcasting Technicians
	3521	Broadcasting and Audio visual Technicians
	3522	Telecommunications Engineering Technicians
<b>36 Primary, Pre-Primary, Vocational and Technical Education Teachers</b>		
<b>Minor Group</b>	<b>Unit Level</b>	<b>Description</b>
361		Primary, Pre-Primary, Vocational and Technical Education Teachers (S)
	3611	Primary Education Teachers (S)
	3621	Pre-Primary Education Teachers (S)
	3631	Vocational and Technical Education Teachers (S)
	3691	Primary, Pre-Primary, Vocational and Technical Education Teachers Not Elsewhere Classified (S)
<b>4 CLERICAL SUPPORT SERVICES</b>		
<b>41 General and Keyboard Clerks</b>		
<b>Minor Group</b>	<b>Unit Level</b>	<b>Description</b>
411	4110	General Office Clerks
412	4120	Secretaries (General)
413		Keyboard Operators
	4131	Typists and Word-Processing Operators
	4132	Data Entry Operators or Clerks

<b>42 Customer Services Clerks</b>		
<b>Minor Group</b>	<b>Unit Level</b>	<b>Description</b>
421		Tellers, Money Collectors and Related Clerks
	4211	Bank Tellers and Related Clerks
	4212	Bookmakers, Croupiers and Related Gaming Workers
	4213	Pawn Brokers and Money Lenders
	4214	Debt Collectors and Related Workers
422		Client Information Workers
	4221	Travel Consultants and Clerks
	4222	Contact Centre Information Clerks
	4223	Telephone Switchboard Operators
	4224	Hotel Receptionists
	4225	Inquiry Clerks
	4226	Receptionists (General)
	4227	Survey and Market Research Interviewers (Enumerators)
	4229	Client Information Workers Not Elsewhere Classified
<b>43 Numerical and Material Recording Clerks</b>		
<b>Minor Group</b>	<b>Unit Level</b>	<b>Description</b>
431		Numerical Clerks
	4311	Accounting and Bookkeeping Clerks
	4312	Statistical, Insurance and Finance Clerks
	4313	Payroll Clerks
432		Material Recording and Transport Clerks
	4321	Stock Clerks
	4322	Production Clerks
	4323	Transport Clerks
<b>44 Other Clerical Support Workers</b>		
<b>Minor Group</b>	<b>Unit Level</b>	<b>Description</b>
441		Other Clerical Support Workers
	4411	Library Clerks
	4412	Mail Carriers and Sorting Clerks
	4413	Coding, Proof-Reading and Related Clerks
	4414	Scribes and Related Clerks
	4415	Filing and Copying Clerks
	4416	Personnel Clerks
	4419	Other Clerical Support Workers Not Elsewhere Classified
<b>5 SERVICES AND SALES WORKERS</b>		
<b>51 Personal Service Workers</b>		
<b>Minor Group</b>	<b>Unit Level</b>	<b>Description</b>
511		Travel Attendants, Conductors and Guides
	5111	Travel Attendants and Travel Stewards
	5112	Transport Conductors
	5113	Travel Guides
512	5120	Cooks
513		Waiters and Bartenders

	5131	Waiters
	5132	Bartenders
514		Hairdressers, Barbers, Beauticians and Related Workers
	5141	Hairdressers
	5142	Beauticians and Related Workers
515		Building and Housekeeping Supervisors
	5151	Cleaning and Housekeeping Supervisors in Offices, Hotels and Other Establishments
	5152	Domestic Housekeepers
	5153	Building Caretakers
516		Other Personal Services Workers
	5161	Astrologers, Fortune Tellers and Related Workers
	5162	Companions and Valets
	5163	Undertakers, Embalmers and Related Workers
	5164	Pet Groomers and Other Animal Care Workers
	5165	Driving Instructors
	5169	Personal Service Workers Not Elsewhere Classified
<b>52 Sales Workers</b>		
521		Street and Market Salespersons
	5211	Stall and Market Salespersons
	5212	Street Food Salespersons
522		Shop Salespersons
	5221	Shopkeepers
	5222	Shop Supervisors
	5223	Shop Sales Assistants
523	5230	Cashiers and Ticket Clerks
524		Other Sales Workers
	5241	Fashion and Other Models
	5242	Sales Demonstrators
	5243	Door-Door Hawkers and Salespersons
	5244	Contact Centre Salespersons
	5245	Service Station/Petrol Attendants
	5246	Food Service Counter Attendants
	5249	Other Salespersons/Workers Not Elsewhere Classified
<b>53 Personal Care Workers</b>		
531		Child Care Workers and Teachers Aides
	5311	Child Care Workers
	5312	Teachers' Aides
532		Personal Care Workers in Health Services
	5321	Health Care Assistants
	5322	Home Based Care Personal Care Workers
	5329	Personal Care Workers in Health Services Not Elsewhere Classified
<b>54 Protective Services Workers</b>		
541		Protective Services Workers
	5411	Fire Fighters
	5412	Police Officers
	5413	Prison Guards
	5414	Security Guards
	5419	Protective Services Workers Not Elsewhere Classified

## 6 SKILLED AGRICULTURAL, FORESTRY AND FISHERY WORKERS

### 61 Market Oriented Skilled Agricultural, Forestry and Fishery Workers

Minor Group	Unit Level	Description
611		Market Gardeners and Crop Growers
	6111	Field Crop and Vegetable Growers
	6112	Tree and Shrub Crop Growers
	6113	Gardeners, Horticultural and Nursery Growers
	6114	Mixed Crop Growers
612		Animal Producers
	6121	Livestock and Dairy Producers
	6122	Poultry Producers
	6123	Apiarists and Seri-culturists
	6129	Animal Producers Not Elsewhere Classified
613	6130	Mixed Crop and Animal Producers

### 62 Market-Oriented Skilled Forestry, Fishery and Hunting Workers

621	6210	Forestry and Related Workers
622		Fishery Workers, Hunters and Trappers
	6221	Aquaculture Workers
	6222	Inland and Coastal Waters Fishery Workers
	6224	Hunters and Trappers

### 63 Subsistence Farmers, Hunters, Fishers, Trappers and Gatherers

631	6310	Subsistence Crop Farmers
632	6320	Subsistence Livestock Farmers
633	6330	Subsistence Mixed Crop & Livestock Farmers
634	6340	Subsistence, Hunters, Fishers, Trappers and Gatherers

## 7 CRAFT AND RELATED TRADES WORKERS

### 71 Building and Related Trades Workers (Excluding Electricians)

Minor Group	Unit Level	Description
711		Building Frame and Related Trades Workers
	7111	House Builders
	7112	Bricklayers and Related Workers
	7113	Stonemasons, Stone Cutters, Splitters and Carvers
	7114	Concrete Placers, Concrete Finishers and Related Workers
	7115	Carpenters and Joiners
	7119	Building Frame and Related Trades Workers Not Elsewhere Classified
712		Building Finishers and Related Trades Workers
	7121	Roofers
	7122	Floor Layers and Tile Setters
	7123	Plasterers
	7124	Insulation Workers
	7125	Glaziers
	7126	Plumbers and Pipe Fitters
	7127	Air Conditioning and Refrigeration Mechanics
713		Painters, Building Structure Cleaners and Related Trades Workers
	7131	Painters and Related Workers
	7132	Spray Painters and Vanishers
	7133	Building Structure Cleaners

<b>72 Metal, Machinery and Related Trades Workers</b>		
721		Sheet and Structural Metal Workers, Moulders and Welders, and Related Workers
	7211	Metal Moulders and Core Makers
	7212	Welders and Flame-Cutters
	7213	Sheet Metal Workers
	7214	Structural Metal Preparers and Erectors
	7215	Riggers and Cable Splicers
722		Blacksmiths, Tool Makers and Related Trades Workers
	7221	Blacksmiths, Hammersmith and Forging Press Workers
	7222	Tool Makers and Related Workers
	7223	Metal Working Machine Tool Setters and Operators
	7224	Metal Polishers, Wheel Grinders and Tool Sharpeners
723		Machinery Mechanics and Repairers
	7231	Motor Vehicle Mechanics and Repairers
	7232	Aircraft Engine Mechanics and Repairers
	7233	Agricultural and Industrial Machinery Mechanics and Repairers
	7234	Bicycle and Related Repairers
<b>73 Handicraft and Printing Workers</b>		
731		Handicraft Workers
	7311	Precision-Instrument Makers and Repairers
	7312	Musical Instrument Makers and Tuners
	7313	Jewellery and Precious Metal Workers (Inc. Sorting, Cutting and Polishing of Diamonds)
	7314	Potters and Related Workers
	7315	Glass Makers, Cutters, Grinders and Finishers
	7316	Sign-Writers, Decorative painters, Engravers and Etchers
	7317	Handicraft Workers in Wood, Basketry and Related Materials
	7318	Handicraft Workers in Textile, Leather and Related Materials
	7319	Handicraft Workers Not Elsewhere Classified
732		Printing Trades Workers
	7321	Pre-Press Technicians
	7322	Printers
	7323	Print Finishing and Binding Workers
<b>74 Electrical and Electronics Trades Workers</b>		
741		Electrical Equipment Installers and Repairers
	7411	Building and Related Electricians
	7412	Electrical Mechanics and Fitters
	7413	Electrical Line Installers and Repairers
742		Electronics Telecommunications Installers and Servicers
	7421	Electronics Mechanics and Servicers
	7422	Information and Communications Technology Installers and Servicers
<b>75 Food Processing, Woodworking, Garment and Other Craft and Related Trades Workers</b>		
751		Food Processing and Related Trades Workers
	7511	Butchers, Fishmongers and Related Food Preparers
	7512	Bakers, Pastry Cooks and Confectionery Makers
	7513	Dairy Products Makers
	7514	Fruits and Vegetables Preservers

	7515	Food and Beverage Makers, Tasters and Graders
	7516	Tobacco Preparers and Tobacco Products Makers
752		Wood Treaters, Cabinet Makers and Related Trades Workers
	7521	Wood Treaters
	7522	Cabinet Makers and Related Trades Workers
	7523	Woodworking Machine Tool Setters and Operators
753		Garment and Related Trades Workers
	7531	Tailors, Dressmakers, Furriers and Hatters
	7532	Garment and Related Patternmakers and Cutters
	7533	Sewing, Embroidery and Related Trades Workers
	7534	Upholsterers and Related Trades Workers
	7535	Pelt Dressers, Tanners and Fell-Mongers
	7536	Shoemakers and Related Trades Workers
754		Other Craft and Related Trades Workers
	7541	Under Water Divers
	7542	Shot Firers and Blasters
	7543	Product Graders and Testers
	7544	Fumigators and Other Pest and Weed Controllers
	7549	Craft and Related Trades Workers Not Elsewhere Classified

## 8 PLANT AND MACHINE OPERATORS AND ASSEMBLERS

### 81 Stationary Plant and Machine Operators

Minor Group	Unit Level	Description
811		Mining and Mineral-Processing Plant Operators
	8111	Miners and Quarriers
	8112	Mineral and Stone Processing Plant Operators
	8113	Well Drillers and Borers
	8114	Cement, Stone, Glass, Ceramic and Other Mineral products Machine Operators
812		Metal Processing and Finishing Plant Operators
	8121	Metal Processing Plant Operators
	8122	Metal Finishing Plant Operators
813		Chemical and Photographic Products Plant and Machine Operators
	8131	Chemical Products Plant and Machine Operators
	8132	Photographic Products Plant and Machine Operators
814		Rubber, Plastic and Paper Products Machine Operators
	8141	Rubber Products Machine Operators
	8142	Plastic Products Machine Operators
	8143	Paper Products Machine Operators
815		Textile, Fur and Leather Products Machine Operators
	8151	Fibre Preparing, Spinning and Winding Machine Operators
	8152	Weaving and knitting Machine Operators
	8153	Sewing Machine Operators
	8154	Bleaching, Dyeing and Fabric Cleaning Machine Operators
	8155	Fur and Leather Preparing Machine Operators
	8156	Shoemaking and Related Machine Operators
	8157	Laundry Machine Operators
	8159	Textile, Fur and Leather Products Machine Operators Not Elsewhere Classified

816	8160	Food and Related Products Machine operators
817		Wood Processing and Papermaking Plant Operators
	8171	Pulp and Papermaking Plant Operators
	8172	Wood Processing Plant Operators
818		Other Stationery Plant and Machine Operators
	8181	Glass and Ceramics Plant and Machine Operators
	8182	Steam Engine and Boiler Operators
	8183	Packaging, Bottling and Labelling Machine Operators
	8189	Other Stationery Plant and Machine Operators Not Elsewhere Classified
<b>82 Plant and Machine Assemblers</b>		
821		Plant and Machine Assemblers
	8211	Mechanical Machinery Assemblers
	8212	Electrical and Electronic Equipment Assemblers
	8219	Other Plant and Machine Assemblers Not Elsewhere Classified
<b>83 Drivers and Mobile Machine/Plant Operators</b>		
831		Locomotive Engine Drivers and Related Workers
	8311	Locomotive Engine Drivers
	8312	Railway Brakes, Signal, Shatter and Switch Operators
832		Car, Taxi, Van and Motorcycle Drivers
	8321	Motorcycle Drivers
	8322	Car, Taxi and Van Drivers
833		Heavy Truck, Lorry Drivers and Bus-Drivers
	8331	Bus Truck and Tram Drivers
	8332	Heavy Truck and Lorry Drivers
834		Mobile Plant and Machinery Operators
	8341	Mobile farm and Forestry Plant Operators
	8342	Earthmoving and Related Plant Operators
	8343	Crane, Hoist and Related Plant Operators
	8344	Lifting-Truck Operators
<b>9 ELEMENTARY OCCUPATIONS</b>		
<b>91 Cleaners and Helpers</b>		
<b>Minor Group</b>	<b>Unit Level</b>	<b>Description</b>
911		Domestic, Hotel and Office Cleaners and Helpers
	9111	Domestic Cleaners and Helpers
	9112	Cleaners and Helpers Offices, Hotels and Other Establishments
912		Vehicles, Window, Laundry and Other Hand Cleaning Workers
	9121	Hand Launderers and Pressers
	9122	Vehicle Cleaners
	9123	Window Cleaners
	9129	Other Cleaning Workers Not Elsewhere Classified

<b>92 Agricultural, Fishery and Forestry Labourers</b>		
921		Agricultural, Fishery and Forestry Labourers
	9211	Crop Farm Labourers
	9212	Livestock Farm Labourers incl. Herders
	9213	Mixed Crop & Livestock Farm Labourers
	9214	Garden and Horticultural Labourers
	9215	Forestry Labourers
	9216	Fishery, Aquaculture, Hunting and Trapping Labourers
<b>93 Labourers in Mining, Construction, Manufacturing and Transport</b>		
931		Mining and Construction Labourers
	9311	Mining and Quarrying Labourers
	9312	Civil Engineering Labourers
	9313	Building Construction and Maintenance Labourers
932		Manufacturing Labourers
	9321	Hand Packers
	9329	Other Manufacturing Labourers Not Elsewhere Classified
933		Transport and Storage Labourers
	9331	Hand and Pedal Vehicle Drivers
	9332	Drivers of Animal Drawn Vehicles
	9333	Freight Handlers
	9334	Shelf Fitters
<b>94 Food Preparation Assistants</b>		
941		Food Preparation Assistants
	9411	Fast Food Preparers
	9412	Kitchen Helpers
<b>95 Street and Related Sales and Services Elementary Occupations</b>		
951	9510	Street and Related Sales and Services Workers
952	9520	Street Vendors (exc. Food)
<b>96 Refuse Workers and Other Elementary Occupations</b>		
961		Refuse Workers
	9611	Garbage and Recycling Collectors
	9612	Refuse Sorters
	9613	Street Sweepers and Related Workers/Labourers
962		Other Elementary Workers
	9621	Messengers, Packager Deliverers, Luggage Porters and Carriers
	9622	Odd-Job Persons
	9623	Vending Machine Money Collectors, Meter Readers and Other Related Workers
	9624	Water Carriers and Related Labourers
	9629	Elementary Workers Not Elsewhere Classified
<b>ADDITIONAL CATEGORIES</b>		
<b>0 Armed Forces Occupations</b>		
Minor Group	Unit Level	Description
11	110	Commissioned Armed Forces Officers
21	210	Non- Commissioned Armed Forces Officers
31	310	Armed Forces Occupations, Other Ranks
999	9999	Occupation Not Stated or Not Classifiable

**S = Special Codes for Botswana**

## **BOTSWANA STANDARD CLASSIFICATION OF OCCUPATIONS (BOSCO) DEFINITIONS (REV 2008)**

### **111 LEGISLATORS, ADMINSTRATORS AND MANAGERS**

**1111 MEMBERS OF PARLIAMENT AND OTHER LEGISLATORS** make, ratify, amend and repeal public laws, rules and regulations; determine, formulate and direct policies of government; direct senior officials of government ministries and departments in the interpretation and implementation of government policies; and serve on government administrative boards or official committees.

**1112 SENIOR GOVERNMENT EXECUTIVE OFFICIALS** advice government on policy questions; plan and direct activities of government ministries and departments and monitor the implementation of government policy, laws, rules and regulations, represent their countries abroad; and perform similar tasks in intergovernmental organisations such as SADC.

**1113 TRADITIONAL CHIEF AND HEADS OF VILLAGES (incl. OTHER COMMUNITY LEADERS)** allocated rights to use of communal land; collect and distribute surplus production of the community; settle disputes and discipline community members for violation of rules and customs; perform ceremonial duties in connection with births, marriages, deaths harvests and traditional feasts; and inform their communities about government rules and regulations.

**1114 SENIOR ADMINISTRATORS OF SPECIAL-INTEREST ORGANISATIONS** determine, formulate and direct the implementation of policies special-interest organisations such as political parties, trade unions, employers' federations, trade and industry associations, humanitarian and charity organisations, and sports associations; and represent their organisations before government or the general public.

### **112 MANAGING DIRECTORS AND CHIEF EXECUTIVES**

**1120 MANAGING DIRECTORS AND CHIEF EXECUTIVES:** formulate and review policies, plan, direct, coordinate and evaluate the overall activities of enterprises or organisations with the support of other managers, usually within the guidelines established by the board of directors, or a governing body to whom they are answerable for the operations undertaken and the results.

## **12 ADMINISTRATIVE AND COMMERCIAL MANAGERS**

**1211 FINANCE MANAGERS** plan, direct, control and coordinate the financial operations of an enterprises/ organisation, in consultation with senior managers and with managers of other departments or sections or of enterprises that provide financial services, administrative, strategic, policy, programme and legislative issues; ensuring compliance with relevant legislation, regulations and standards; controlling selection, training and performance of staff, preparing budgets and overseeing financial operations, assess the financial situation of the enterprise/organisation, establish and manage budgets, control expenditure and ensuring the efficient use of resources.

**1212 HUMAN RESOURCE MANAGERS** plan, direct and coordinate policies Concerning personnel, industrial relations and occupational health and safety activities of an enterprise or organisations, or of enterprises that provide human resource services to other enterprises and organisations. They plan and organise procedures for recruitment, training, promotion, transfer and dismissal of staff, plan and organise negotiations and procedures for determination of wage structures and level and for consultation with workers on conditions of employments, establishing directing operational and administrative procedures.

**1213 POLICY AND PLANNING MANAGERS** plan, organise, direct, coordinate, policy advice and strategic planning activities within government, or for non-government organisations and private sector agencies. They also manage the activities of enterprises that provide policy and strategic planning services by developing, implementing and monitoring strategic plans, programmes, policies, processes, systems and procedures to achieve goals, objectives and standards. They also , participate in policy research and analysis.

**1219 BUSINESS SERVICES AND ADMINISTRATION MANAGERS NEC** provide Administrative, strategic planning and operational support, research and advice to senior management on matters such as the management of building facilities and administrative services,. They develop and implement administrative and procedural

statements and guidelines for use of staff in the organisation, analyse complex resource management issues and initiatives that affect the organisation and prepare associated reports, correspondence and submissions, provide information and support for the preparation of financial reports and budgets, lead, manage and administrative staff to ensure smooth business operations and the provision of accurate timely information.

**1221 SALES AND MARKETING MANAGERS** plan, direct and coordinate the sales and marketing activities of enterprises and organisations, or of enterprises that provide sales and marketing activities to other enterprises and organisations; plan and organise special sales and marketing programmes based on sales records and market assessments, determine price lists, discounts and delivery terms, sales promotions budgets, sales methods, special incentives and campaigns, establish and direct operational and administrative procedures related to sales and marketing activities.

**1222 ADVERTISING AND PUBLIC RELATIONS MANAGERS** plan, direct and coordinate the advertising, public relations and public information activities of enterprises and organisations or of enterprises that provide related services to other enterprises and organizations, negotiate advertising contracts with clients or with newspapers, radio, tv stations, sports and cultural organisations and advertising agencies, plan and manage information programmes to inform legislators, the mass media and the general public about the plans, accomplishments and points of view of the enterprise or organisation.

**1223 RESEARCH AND DEVELOPMENT MANAGERS** plan, direct and coordinate the research and development activities of enterprises and organisations, or of enterprises that provide related services to other enterprises and organisations; plan, direct and coordinate formulate and implement policies and plans for advertising, public relations, product development, sales and marketing in consultation with other managers, direct 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.

**1224 SMALL BUSINESS MANAGERS:** Head establishments too small to have a hierarchy of managers. They coordinate all functions of such both general and specific terms; and ensure that the finance, staffing, training and marketing functions operate efficiently. Their immediate subordinates are usually supervisors.

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

**1311 AGRICULTURE 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 cooperatives to grow and harvest crops, and breed and raise livestock. Monitor agricultural and forestry market activity and plan production to meet contract requirements and market demand, establish and manage budgets, monitor production output and costs, recording information such as farm management practices and preparing financial and operational reports, confer with buyers to arrange for sale of crops and livestock, contact with farmers or independent owners for production of crops and livestock or for management of production, analyse soil to determine types and quantities of fertilizers required for maximum production.

**1312 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 fresh or salt water. Monitor aquaculture and fishery market activities and plan production and fishing activities to meet contracts requirements and market demand, establish and manage budgets, monitor production and output and costs, recording information such as fisheries management practices, and preparing financial and operational reports, confer with buyers to arrange for sale of producer and catches, devise and coordinate activities to improve fish hatching and growth rates, and to prevent disease in hatcheries, direct and monitor trapping and spawning of fish, egg incubation and fry rearing, apply knowledge of management and fish culturing techniques.

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

**1321 MANUFACTURING MANAGERS** plan, direct and coordinate activities concerned with the production of goods, the production and distribution of electricity, gas and water, and the collection, treatment and disposal of waste, manage the production departments of large enterprises or be the managers of small manufacturing companies. They determine, implement and monitor production strategies, policies and plans, plan details of production activities in terms of output quality and quantity, cost, time availability and labour requirements, control the operation of production plant and quality procedures through planning of maintenance, designation of operating hours and supply of parts and tools, establish and manage budgets,

monitor production outputs and costs, and adjusting processes and resources to minimize costs, consult with and inform other managers about production matters, control the preparation of production records and reports.

**1322 MINING MANAGERS** plan, direct and coordinate the production activities of mining, quarrying and oil and gas extraction operations, either as the manager of a department or as the general manager of an enterprise or organization that does not have a hierarchy of managers. They confer with other managers to set production quotas, plan extraction sites and develop policies for the removal of raw materials, evaluate efficiency of production sites to determine adequacy of personnel, equipment and technologies used, and make changes to work strategies or equipment, plan details of production activities in terms of output quality and quantity, cost, time available and labor equipment, control the operation of plant and quality procedures, designation of operations hours and supply of equipment, establish and manage budgets, monitoring production output costs and adjusting processes and resources to minimize costs.

**1323 CONSTRUCTION MANAGERS** plan, direct and coordinate the construction civil engineering projects, building and dwellings either as the manager of a department or as general manager of an enterprise or organization that does not have a hierarchy of managers. They interpret architectural drawings and specifications, coordinate labour resources and procurement and delivery of materials, plant and equipment, negotiate with building owners, property developers and subcontractors involved in the construction process to ensure projects are completed on time and within budget, prepare tenders and contract bids, operate and maintain coordinated work programme for sites, ensure adherence to building legislation and standards of performance, quality, cost and safety, arrange submission of plans to local authorities.

**1324 SUPPLY, DISTRIBUTION AND RELATED MANAGERS:** plan, direct and coordinate passenger transportation system and facilities and the supply, transportation, storage and distribution of goods. Determine, implement and monitor purchasing, storage and distribution strategies, policies and plans, prepare and implement plans to maintain required stock levels at minimum cost, negotiate contracts with suppliers to meet quality, cost and delivery requirements, monitor and review storage and inventory systems to meet supply requirements, overseeing the dispatch of road vehicles, trains and vessels and aircrafts,

**1330 INFORMATION AND COMMUNICATIONS TECHNOLOGY SERVICE MANAGERS:** plan, direct and coordinate the acquisition, development, maintenance and use of computer and telecommunication systems, either as the manager of a department or as the general manager of an enterprise or organization that does not have a hierarchy of managers, consultation with users, management, vendors and technicians to assess computing needs and system requirements, and specifying technology to meet those needs, formulate and direct ICT strategies, policies, plans, direct the selection of ICT resources and provision of user training.

**1341 CHILD CARE SERVICES MANAGERS** plan, direct, coordinate and evaluate the provision of care for children in before school, after school, vacation and day care services. They develop, implement programs to enhance the physical, social, emotional, and intellectual development of young children, establish and monitor budgets and determine allocation of funds for staff, direct, supervise child carers in providing care and supervision for young children, manage physical facilities and making sure all buildings and equipment are maintained to ensure the centre is safe.

**1342 HEALTH SERVICES MANAGERS** plan, direct, coordinate and evaluate the provision of clinical and community health care services in hospitals, clinics, public health agencies. Provide overall direction and management for services, facility, organization,, direct, supervise and evaluate the work activities of medical, nursing , technical, clerical, service, maintenance and other personnel, direct and recruit, train personnel, monitor the use of diagnostic services, inpatient beds, facilities and staff, control administrative operations such as budgeting, report preparations and expenditure

**1343 AGED CARE SERVICES MANAGERS** plan, direct, coordinate and evaluate the provision of residential and personnel care services for individuals and families in need of such services. Provide overall direction and management for services, facility, and organization. direct, supervise and evaluate the work activities of medical, nursing , technical, clerical, service, maintenance and other personnel, direct and recruit, train personnel, develop, implement and monitor procedures, policies and performance standards for nursing, personal care, technical and administrative staff. Control administrative operations such as budgeting, report preparations and expenditure

**1344 SOCIAL WELFARE MANAGERS** plan, direct, coordinate and evaluate the Provision of social and community services programmes such as income support, family assistance, children's services and other community programs and services. Develop, implement and monitor procedures, policies and standards

for staff, monitor and evaluate resources devoted to the provision of welfare, housing and other social services, control administrative operations such as budgeting, report preparations and expenditure, advise government on measures to improve welfare services and facilities.

**1345 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; determine educational programmes based on frameworks established by education authorities and governing bodies, implement systems and procedures to monitor school performance and student enrolments, control administrative operations such as budgeting, report preparations and expenditure, provide leadership and guidance to teaching, academic and administrative staff and students, evaluate the work of teachers and lecturers by visiting classrooms, review instructional objectives and examining learning materials.

**1346 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; provide advice and assistance to clients on financial and insurance matters, establish and maintain relationships with individual and business customers, provide advice and assistance to customers on their financial and insurance needs, examine, evaluate and process loan and insurance applications, monitor credit extension decisions, conduct financial investigations, oversee the flow of cash and financial instruments and the preparation of financial and regulatory reports, approve or reject or coordinate the approval or rejection of lines of credit for commercial, real estate and personal loans, managing budgets, controlling expenditure and ensuring the efficient use of resources.

**1349 PROFESSIONAL SERVICES MANAGERS NEC** plan, direct and coordinate the provision of policies, correctional, library, legal and fire services.

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

### **141 HOTEL AND RESTAURANT MANAGERS**

**1411 HOTEL MANAGERS** plan, organise and direct the operations of establishments that provide accommodation, meals, beverages and other hospitality services; direct and oversee reservation, reception, room service and housekeeping activities; monitoring quality at all stages of preparation and presentation of food and services, controlling the selection, training and supervision of staff.

**1412 RESTAURANT MANAGERS** plan, organise and direct the operations of cafes, restaurant and related establishments; plan menus with chefs and cooks; arrange the purchasing and pricing goods; ensure that dining kitchen and food storage facilities comply with health regulations and are clean and functional; ensure compliance with occupational health and safety regulation.

**1420 RETAIL AND WHOLESALE MANAGERS** plan, organise, co-ordinate and control the operations of establishments that sell goods on a retail or whole sale basis. They are responsible for the budgets, staffing, strategic and operational direction of shops, or of organisational units within shops that sell particular types of product; formulate and implement purchasing and marketing policies and setting prices; determine stock levels and service standards.

**1431 SPORTS, RECREATION AND CULTURE CENTER MANAGERS** plan, organise, control the operations of establishments that provide sporting, artistic, and theatrical; keep abreast of new trends and developments in the creative arts and arranging theatrical productions and performances by bands and orchestras; advise on facilities available and promote publicity in relation to events, shows and activities.

**1439 OTHER SERVICES MANAGERS** plan, organise, control the operations of establishments that provide sporting, cultural, recreational, travel, customer contact and other amenity services; keep abreast of new trends and developments in the creative arts and arranging theatrical productions and performances by bands and orchestras.

## PROFESSIONALS

### 21 SCIENCE AND ENGINEERING PROFESSIONALS

**2111 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; apply scientific knowledge relating to physics and astronomy in industrial, medical, military; conducts experiments, tests and analysis 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; ensure the safe and effective delivery of radiation, (ionizing and non-ionizing) to patients to achieve a diagnostic or therapeutic result.

**2112 METEOROLOGISTS** short term or long term weather forecasts used in aviation, shipping, agriculture and other areas and for the information for the public; investigate 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 and solar radiation; study data collected from meteorological stations, radar and satellite imagery and computer model output to plot and forecast weather conditions.

**2113 CHEMISTS** conduct chemical research; conduct experiments, tests and analyses to investigate the chemical nature of various synthetic or natural substances, materials and products; develop pharmaceutical and other industrial materials, procedures for the manufacture of products in plants or factories.

**2114 GEOLOGISTS AND GEOPHYSICISTS** conduct geological research; prepare geological reports, maps, charts and diagrams; apply geological knowledge to locate and determine the nature and extent of mineral deposits, underground water resources, oil and gas; and apply geological knowledge to solve various civil engineering problems.

**2120 MATHEMATICIANS, ACTUARIES AND STATISTICIANS** 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 application, in such fields such as business or medicine as well as in other areas of natural, social or life sciences.

**2131 BIOLOGISTS, BOTANISTS, ZOOLOGISTS, AND RELATED PROFESSIONALS** study and conduct experiments concerning the structure, development and characteristics of micro-organisms; identify and classify human, animal, insect plant specimens and study their origin, development, form structure, composition, and life and reproductive processes; study and conduct experiments concerning the factors involved in the origin, development and transmission of hereditary characteristics; study and conduct experiments concerning the structure and functions of living cells; and study inter-relationships of animal and plant life and the environmental factors involved.

**2132 FARMING, FORESTRY AND FISHERY ADVISORS** study and provide assistance on farm, forestry and fisheries management, cultivation, fertilization, harvesting, soil erosion and composition, disease prevention, nutrition, crop rotation and marketing; collect, analyse data samples related to produce, feed, soil, water quality and other factors affecting farm, forest or fishery production.

**2133 ENVIRONMENTAL PROTECTION PROFESSIONALS** study and assess the effects on the environment of human activity such as air, water, noise pollution, soil contamination, climate change, toxic waste, and depletion, degradation of natural resources; develop plans and solutions to protect, conserve, restore, minimize and prevent further damage.

**2141 INDUSTRIAL AND PRODUCTION ENGINEERS** conduct research and design, organize and oversee the construction, operation and maintenance of industrial production process and installation; establish work measurement programmes and analysing work samples to develop standards for labour utilisation.

**2142 CIVIL ENGINEERS** conduct research and develop new or improved theories and methods related to civil engineering; design structures as bridges, dams, roads, airports, railways, pipelines, waste-disposal and flood-control systems, and buildings; and organise and direct maintenance and repair of existing structures; advise on and design structures such as bridges, dams, docks, roads, airports, railways, canals, pipelines, waste-disposal, and flood- control systems.

**2143 ENVIRONMENTAL ENGINEERS** conduct research and advise on design and direct implementation of solutions to prevent, control or remedy negative impacts of human activity on the environment utilization; design and oversee the development of systems, processes and equipment for control, management or remediation of water, air or soil quality, provide environmental engineering assistance in network analysis, regulatory analysis.

**2144 MECHANICAL ENGINEERS** conduct research in mechanical engineering; design machinery and tools for manufacturing, mining, construction, agricultural work and other industrial purposes; design non-electric motors and engines; design airframes, road vehicle bodies, suspension systems, brakes and other components; design heating, ventilation and refrigeration systems and equipment; design non-electrical parts of word processors, computers, precision instruments, cameras, projectors and similar products; specify and check production and installation methods and work of machines, machinery, tools, motors, engines, plant, equipment or systems and establish control standards and procedures to ensure efficient functioning and safety of machines, machinery, tools, motors, engines, plant, equipment or systems.

**2145 CHEMICAL ENGINEERS** conduct research in chemical engineering; 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, medicaments, or synthetic materials; specify production methods, materials and quality standards; and organise and direct Maintenance and repair of existing equipment.

**2146 MINING ENGINEERS, METALLURGISTS AND RELATED PROFESSIONALS** conduct research in mining engineering or metallurgy; determine most suitable methods of mining and extraction; plan layout and direct construction of shafts and tunnels; determine drilling sites and devise methods of controlling the flow of water, oil or gas from wells; plan and direct storage, initial treatment and transportation of water, oil or gas; establish underground safety standards and procedures; develop methods of extracting metals from their ores and advise on their application; investigate properties of metals and alloys; develop new alloys; and advise on and supervise technical aspects of metal and alloy manufacture and processing.

**2149 ENGINEERING PROFESSIONALS NOT CLASSIFIED ELSEWHERE** conduct research and advise on develop engineering procedures and solutions concerning workplace safety, biomedical engineering, optics, materials, nuclear power generation and explosives; apply knowledge of engineering to the design, development and evaluation of biological and health systems and products.

**2151 ELECTRICAL ENGINEERS** conduct electrical engineering research; design systems for electrical power generation, transmission and distribution; design electrical systems for electrical motors, electrical traction and other equipment, or electrical domestic appliances; specify electrical installation in industrial and other buildings and objects; establish control standards and procedures to ensure efficient functioning and safety of electrical generating and distribution systems, motors and equipment; and organise and direct maintenance and repair of existing electrical systems, motor and equipment.

**2152 ELECTRONICS ENGINEERS** conduct research in electronics and engineering; and design electronic devices, circuits, semi-conductors and systems motors and equipment such as computers; specify production or installation methods, materials and quality standards; direct production or installation work of electronic products and systems; establish control standards and procedures to ensure efficient functioning and safety of electronic.

**2153 TELECOMMUNICATIONS ENGINEERS** conduct research, design and direct construction, functioning, maintenance and repair of telecommunication systems and equipment; specify production or installation methods, materials and quality standards; direct production or installation work of telecommunications products and systems; plan and design communication networks based on wire, fibre optical and wireless communication media.

**2161 BUILDING ARCHITECTS** design commercial, industrial, institutional, residential and recreational buildings and plan and monitor their construction, maintenance and rehabilitation; inspect sites, consult clients, management and other stakeholders to determine type, style and size of proposed buildings and alterations to existing buildings; write specifications and contract documents for use by builders and calling tenders on behalf of clients.

**2162 LANDSCAPE ARCHITECTS** plan and design landscapes and open spaces for objects such as parks, schools, institutions, roads and external areas for commercial, industrial and residential sites, and plan and monitor their construction, maintenance; rehabilitation; inspect sites and consulting clients, management and other stakeholders to determine type, style and size of proposed buildings, parks, roads and other open spaces; compile and analyse 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, feasibility studies and environmental impact statements; prepare reports, strategic plans, site plans, working drawings, specifications and cost estimates for land development, showing location and details of proposals, including ground modelling, structures, vegetation and access.

**2163 PRODUCT AND GARMENTS DESIGNERS** design visual and audio-visual content for the communication of information using print, film, electronic, digital and other forms of visual and audio media; create graphics, special effects, animation or other visual images for use in computer games, movies, music videos, print media and advertisements; formulate design concepts for clothing, textiles, industrial, commercial and consumer products requirements.

**2164 TOWN AND TRAFFIC PLANNERS** design buildings, town layouts, landscapes and traffic systems, and plan and monitor their construction, maintenance and rehabilitation.

**2165 CARTOGRAPHERS AND SURVEYORS** survey, measure and describe land surfaces for mapmaking, construction work or establishment of property boundaries; survey mines to delineate underground surfaces and to control the direction and extent of mining; survey river and lake beds to determine exact position of various features; plan and conduct aerial photographic surveys; analyse aerial photographs, remote sensing data and surveying data to prepare and revise maps and charts; and study and advise on technical, aesthetic and economic aspects of map production.

**2166 GRAPHIC AND MULTIMEDIA DESIGNERS** design visual and audio-visual content for the communication of information using print, film, electronic, digital, and other forms of visual and audio media; create graphics, special effects, animation or other visual images for use in computer games, movies, music videos, print media and advertisement; prepare sketches, diagrams, illustrations and layouts to communicate design concepts, design complex graphics and maintain to satisfy functional, aesthetic and creative requirements of the design brief; create 2-dimensional or 3-dimensional images depicting objects in motion or illustrating a process using computer animation.

## **22 HEALTH PROFESSIONALS**

**2211 GENERALIST MEDICAL PRACTITIONERS** diagnose, treat and prevent illnesses, diseases, injuries and other physical and mental impairments and human general health in humans through application of the principles and procedures of medicines, order laboratory tests, X-rays and other diagnostic procedures and analysing findings; advise on and apply preventative medical methods and treatments; and participate in the development and implementation of public health laws and community health programmes.

**2212 SPECIALIST MEDICAL PRACTITIONERS** diagnose, treat and prevent illnesses, diseases, injuries and other physical and mental impairments and human general health in humans using specialized testing and diagnostic, medical, surgical, physical and psychiatric techniques through the application of principles and procedures of modern medicine; order specialized diagnostic tests to determine the nature of disorders or illnesses; prescribe, administer and monitor patients responses to treatments, medications, anaesthetic, psychotherapies, physical rehabilitation programme and other preventative and curative measures.

**2221 NURSING PROFESSIONALS** provide treatment, support and care services for people who are in need of nursing care due to effects of aging, injury, illness, or other physical or mental impairment or potential risks to health. Midwifery plan, manage, provide and evaluate midwifery care services before, during and after pregnancy and child birth.

**2222 MIDWIFERY PROFESSIONALS** provide treatment, support and care services for people who are in need of nursing care due to effects of aging, injury, illness, or other physical or mental impairment or potential risks to health. Midwifery plan, manage, provide and evaluate midwifery care services before, during and after pregnancy and child birth.

**2230 TRADITIONAL AND COMPLIMENTARY MEDICINE PROFESSIONALS** examine patients, prevent and treat illnesses, diseases, injury and other physical and mental impairments and maintain general health in human by applying knowledge, skills and practices acquired through extensive study of the theories, beliefs and experiences originating in specific cultures.

**2240 PARAMEDICAL PRACTITIONERS** provide advisory, diagnostic, curative and preventative medical services; perform basic, or more routine medical and surgical procedures, including prescribing and administering treatments, medications and other preventive or curative measures; perform therapeutic procedures such as injections, immunizations, suturing and wound care, and infection management.

**2250 VETERINARIANS** conduct examinations and diagnose diseases or injuries of animals; administer surgical or medical veterinary treatment; test dairy and other herds and inoculate animals against diseases; advise on care and breeding of animals; inspect quality, purity and safety of food made from raw materials of animal origin; and assist in epidemiological, radiological and other surveillance of animal health.

**2261 DENTISTS** conduct research into dental and related disorders and illnesses; diagnose and treat dental and oral diseases and disorders; and participate in public programmes to maintain or improve standards of oral health and dental care.

**2262 PHARMACISTS** dispense medicaments and drugs in hospitals or retail pharmacies; check prescriptions to ensure that recommended dosages are not exceeded; advise on possible drug incompatibility; test drugs to determine their identity, purity and strength; advise chemists, engineers and other professionals concerning manufacturing techniques and ingredients for new drugs; and participate in the development of controls and regulations.

**2263 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 conditions and to prevent diseases or injury caused by chemical, physical, radiological and biological agents or ergonomic factors, prepare and implement plans and strategies for the safe, economic and suitable disposal of commercial, industrial, medical and household wastes; identify, report and document hazardous, and assess and control risks in the environmental and workplace; develop, implement and monitor programs to minimize workplace and environmental pollution.

**2264 PHYSIOTHERAPISTS** assess, plan and implement rehabilitative programmes 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, and laser; administer muscle, nerve, joint functional ability and other tests to identify and assess physical problems of patients; establish treatment goals with patients and designing treatment programmes to reduce pain, strengthen muscles, improve cardio thoracic, and coordination; develop, implement and monitor programmes and treatments using the therapeutic properties of exercise, heat, cold, massage, manipulation, hydrotherapy, electrotherapy, ultra-violet and infrared light and ultrasound in the treatment of patients, etc.

**2265 DIETICIANS AND NUTRITIONISTS** assess, plan and implement programmes to enhance the impact of food and nutrition on human health; plan diets and menus, supervise the preparation and serving of meals, and monitor food intake and quality to provide nutritional care in settings offering food servings; conduct research on nutrition and disseminating the findings at scientific conferences; plan and conduct nutritional assessments, intervention programmes and education training.

**2266 AUDIOLOGISTS AND SPEECH THERAPISTS** evaluate, manage and treat physical disorders affecting human hearing, speech, swallowing and communication. 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; prescribe hearing aids and other assistive devices according to patients' needs and instructing them in their use.

**2267 OPTOMETRISTS AND OPHTHALMIC OPTICIANS** provide diagnosis, management and treatment services for disorders of the eyes and visual systems; they counsel on eye care and prescribe optical aids or other therapies for visual disturbances; examine patients' eyes and conducting diagnostic tests to assess ocular health and determine the nature and extent of vision problems and abnormalities; detect and diagnose eye movements disorders and defects of binocular functions, and planning and managing treatment programmes; test visual function using specialized instruments and equipment for measuring visual acuity and refractive error, function of visual pathways, visual fields, eye movements.

**2269 OTHER HEALTH PROFESSIONALS NOT ELSEWHERE CLASSIFIED** interview patients and conducting diagnostic tests to determine their health status, functional limitations, and the nature of physical or mental disorders, illnesses or other health problems; develop and implement treatment plans for injuries, illnesses plans for injuries, illnesses and other physical and mental impairments; develop and document 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.

## **23 TEACHING PROFESSIONALS**

**2310 UNIVERSITY AND HIGHER EDUCATION TEACHING PROFESSIONALS** deliver lectures and conduct tutorials, seminars and laboratory experiments in colleges or at the university, or at other tertiary institutions of learning, participate in decision-making processes concerning policy matters; conduct scholarly research; and prepare scholarly books, papers and articles in their field of specialisation.

**2320 VOCATIONAL EDUCATION TEACHERS** teach courses in applied engineering technology, industrial processes, manufacturing techniques, mining, construction, automotive repair and related fields in Vocational Training Centres, the Brigades, the Automotive Trades Training School, at BRIDEC or in similar institutions; or they teach commercial subjects such as typing, computer skills and

**2330 SECONDARY EDUCATION TEACHERS** teach one or more subjects in Junior Community Secondary Schools or in Senior Secondary Schools.

**2341 PRIMARY SCHOOL TEACHERS** teach a range of subjects at the primary level of education.

**2342 EARLY CHILDHOOD EDUCATORS** promote the social, physical and intellectual development of children below primary school age through the provision of educational and play activities; plan and organise individual and group activities designed to facilitate the development of children's motor, cooperative and social skills, confidence and discussions; leading children in activities that provide opportunities for creative expression through the media of art, dramatic play, music and physical fitness.

**2351 EDUCATION METHODS SPECIALIST:** conduct research and develop or advise on teaching methods, course and aids. They review and examine teachers' work, the functioning of educational institutions and the results achieved; researching into current developments in curricula; evaluate and advise on contents of courses and methods of examination; document subjects and courses developed and evaluate new courses; provide on-going professional development, training and consultative services to teachers.

**2352 SPECIAL NEEDS TEACHERS** assess students' abilities and limitations with regard to intellectual, physical, social and emotional impairments; design or modify curricula and prepare and deliver programmes, lessons and activities adapted to students' abilities and needs; establish and enforce rules for behaviour and policies and procedures to maintain order among students; prepare and maintain student data and other records.

**2353 OTHER LANGUAGE TEACHERS** teach non-native languages to adults and children who are learning for reasons of migration; assess the level of ability and extent of language difficulties of students, and establishing students' needs and learning goals; plan, prepare and deliver lessons and workshop for groups and individuals; design and produce teaching materials and adapt existing materials; assessing students' progress and assisting students in classroom settings where subjects are taught in a language other than student's native language.

**2354 OTHER MUSIC TEACHERS** teach students in the practice, theory and performance of music outside the mainstream primary, secondary and higher education systems; instruct and demonstrate practical aspects of singing or playing a particular instrument; assess the students' level of ability and determining needs and learning goals; plan, prepare and deliver programmes of study, lessons and workshop for individual students and groups;

**2355 OTHER ARTS TEACHERS** teach students in the practice, theory and performance of dance, drama and visual outside the mainstream primary, secondary and higher education systems; instruct and demonstrate practical aspects of drama, dance and visual; assess the students' level of ability and determining needs and learning goals; plan, prepare and deliver programmes of study, lessons and workshop for individual students and groups.

**2356 INFORMATION TECHNOLOGY TRAINERS** develop, schedule and conduct training programmes and courses for computer and other information technology users outside the mainstream primary, secondary and higher education systems; identify the information technology training needs and requirements of individual users and organizations; design, coordinate, schedule and conduct training and development programmes that can be delivered in the form of individual and group instruction, and facilitating workshop meetings, demonstrations and conferences.

**2359 OTHER TEACHING PROFESSIONALS NOT ELSEWHERE CLASSIFIED** provide private tuition in subjects other than foreign languages and the arts, and those who provide educational counselling to students.

## **24 BUSINESS AND ADMINISTRATION PROFESSIONALS**

**2411 ACCOUNTANTS** advise on, plan and install budgetary accounts controlling and other accounting policies and systems; prepare and certify financial statements for presentation to management, shareholders, statutory or other bodies; prepare tax returns, advise on taxation problems and contest disputes claims before tax officials; prepare or report on profit forecasts and budgets; conduct financial investigations in matters such as suspected fraud, insolvency and bankruptcy; and audit accounts and bookkeeping records.

**2412 FINANCIAL AND INVESTMENT ADVISORS** build and maintain a client base; interview clients to determine financial status and objectives, risk tolerance and other information needed to develop financial plans and investment strategies; setting financial objectives, and developing and implementing strategies for achieving them; monitor investment performance and review and revise investment plans.

**2413 FINANCIAL ANALYSTS** conduct quantitative analyses of information affecting investment programmes of public or private institutions; analyse financial information to produce forecasts of business, industry and economic conditions for use in making investment decisions; maintain knowledge and staying abreast of development in the fields of industrial technology, business, finance and economic theory; interpret data affecting investment programme such as price, yield, stability, future trends in investment risks and economic influences; recommend investments and investment timing to companies, investment firm staff or the investing public; monitor 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.

**2421 MANAGEMENT AND ORGANISATION ANALYSTS** assist and encourage the development of objectives strategies and plans aimed at achieving customer satisfaction and the efficient use of organizations' resources; analyse and evaluating current system and structures; discuss current systems with staff and observing systems at all levels of organization; undertake and review work studies by analysing existing and proposed methods and procedures such as administrative and clerical procedures; record and analyse organizations workflow charts, records, reports, manuals and job descriptions.

**2422 POLICY ADMINISTRATION PROFESSIONALS** liaise and consult with programme administrators and other interested parties to identify policy needs; review existing policies and legislation to identify anomalies and out-of-date provisions; research social, economic and industrial trends, and client expectations of programme and services provided; formulate and analyse policy options, prepare briefing papers and recommendations for policy changes and advising on preferred options; assessing impacts, financial implications, interactions with other programme and political and administrative feasibility of policies; conduct threat and risk assessment and develop responses.

**2423 PERSONNEL AND CAREERS PROFESSIONALS** advise and perform functions relating to employee recruitment, placement, training, promotion, compensation and employee-management relations or other areas of personnel policy; study and analyse 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; prepare occupational information or working on occupational classifications systems; advise and work on the foregoing and other aspects of job and occupation analysis in such fields as personnel administration, workforce research planning.

**2424 TRAINING AND STAFF DEVELOPMENT PROFESSIONALS** plan, develop, implement and evaluate training and development programmes to ensure management and staff acquire the skills and develop the competencies required by organizations to meet organizational objectives; identify training needs and requirements of individuals and organizations; setting human resource development objectives and evaluating learning outcomes; prepare and develop instructional training materials and aids such as handbooks, visual aids, online tutorials, demonstration models and supporting training references documentation; liaise with external training providers to arrange delivery of specific training and development programmes; monitor and perform on-going evaluation and assessment of internal and external training quality and effectiveness, and review and modify training objectives, methods and course deliverables.

**2431 ADVERTISING AND MARKETING PROFESSIONALS** plan, develop and organize advertising policies and campaigns to support sales objectives; advice managers and clients on strategies and campaigns to reach target markets, creating consumer awareness and effectively promoting the attributes of goods and services; collect and analyse data regarding consumer patterns and preferences; interpret and predict current and future consumer trends; research potential demand and market characteristics for new and goods and services; support business growth and development through the preparation and execution of marketing objectives, policies and programs.

**2432 PUBLIC RELATIONS PROFESSIONALS** plan and organize publicity campaigns and communication strategies; advise executives on the public relations implications of their policies, programmes and practices and preparing and controlling the issue of news and press release; undertake and commission public opinion research, analyse the findings and planning public relations and promotional campaigns; organize special events, seminars, entertainment, competitions, and social functions to promote goodwill and favourable publicity; represent organizations and arranging interviews; attend business, social and other functions to promote the organization.

**2433 TECHNICAL AND MEDICAL SALES PROFESSIONALS (EXC. ICT)** compiling lists of prospective client businesses by using directories and other sources; acquire and update knowledge of employers and competitors goods and services and of market conditions; visit regular and prospective client businesses to establish and act on selling opportunities; assessing clients' needs and resources and recommending appropriate goods or services; develop reports and proposals as part of sales representations to demonstrate benefits from the use of goods or services; estimate costs of installing and maintain equipment or services; monitor customers' changing needs and competitor activity and reporting these developments to sales management.

**2434 INFORMATION AND COMMUNICATION TECHNOLOGY SALES PROFESSIONALS** soliciting orders and selling goods to retail, industrial, wholesale and other establishments; selling technical equipment, supplies and related services to business establishments or individuals; quote and negotiate prices and credit terms and completing contracts and recording orders; arrange delivery of goods installation of equipment and the provision of services.

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

**2511 SYSTEMS ANALYSTS** conduct research, analyse and evaluate client information technology requirements, procedures or problems and develop and implement proposals recommendations and plans to improve current or future information systems; identify and analyse business processes, procedures and work practices; identify and evaluate inefficiencies and recommending optimal business practices and system functionality and behaviour; develop functional specifications for use by systems developers; expand and modify systems to improve workflow or serve new purposes.

**2512 SOFTWARE DEVELOPERS** research, analyse and evaluate requirements for software applications and operating systems; research, design and develop computer software systems; develop and direct software testing and validation procedures; modify existing software to correct errors to adapt it to new hardware or to upgrade interface and improve performance; assess, develop, upgrade and document maintenance procedures for operating systems, communication environments and applications software.

**2513 WEB AND MULTIMEDIA DEVELOPERS** analyse, design and develop Internet sites by applying a mixture of artistry and creativity with software programming and scripting languages and interfacing with operating environments; design and develop digital animations, imaging, presentations, games, audio and video clips and Internet applications using multimedia software, tools and utilities, interactive graphics and programming languages; design, develop and integrating computer code with other specialized inputs such as image files, audio files and scripting languages to produce, maintain and support websites.

**2514 APPLICATIONS PROGRAMMERS** write and maintain program code outlined in instructions and specifications in accordance with quality accredited standards; revise, repair or expand existing programs to increase operating efficiency or adapt to new requirements; conduct trial runs and programs and software applications to confirm that they will produce the desired information.

**2519 SOFTWARE AND APPLICATIONS DEVELOPERS AND ANALYSTS NEC** develop and document software testing plans; install software and hardware and configure operating systems software in preparation for testing; verify that programs function according to user requirements and established guidelines; execute, analyse and document results of software application tests and information and telecommunication system tests.

**2521 DATABASE DESIGNERS AND ADMINISTRATORS** designing and developing database architecture, data structure, tables, dictionaries and naming conventions for information systems projects; design, construct, modify, integrate, implement and test database management systems; develop and implement data administration policy, documentation, standards and models.

**2522 SYSTEMS ADMINISTRATORS** maintaining and administering computer networks and related computing environments, including computer hardware, systems software, applications software and all configurations; recommend changes to improve systems and network configurations, and determining hardware or software requirements related to such changes; perform data backups and disaster recovery operations.

**2523 COMPUTER NETWORK PROFESSIONALS** research, analyse, design, test and recommend strategies for network architecture and development. They implement, manage, maintain and configure network hardware and software, and monitor, troubleshoot and optimize performance; analyse, develop, interpret and evaluate complex system design and architecture specifications, data models and diagrams in the development, configuration and integration of computer systems; research, analyse, evaluate and monitor network infrastructure to ensure that networks are configured to operate at optimal performance; assess and recommend improvements to network operations and integrated hardware, software, communications and operating systems; provide specialist skills in supporting and troubleshooting network problems and emergencies.

**2529 DATABASE AND NETWORK PROFESSIONALS NEC** database and network professionals not classified elsewhere in Group 252. Includes information and communication technology security specialist who develop plans to safeguard computer files against accidental or unauthorized modification, destruction or disclosure and to meet emergency data processing needs; train users and promoting security awareness to ensure system security and to improve server and network efficiency; monitor current reports of computer viruses to determine when to upgrade virus protection systems.

## **26 LEGAL, SOCIAL AND CULTURAL PROFESSIONALS**

**2611 LAWYERS** give clients legal advice on a wide variety of subjects, draw up legal documents, represent clients before administrative boards or tribunal and plead cases or conduct prosecutions in court of justice, or instruct barristers to plead in higher courts of justice; research legal principles, statutes and previous court decisions related to specific cases; gather evidence to formulate a defence or to initiate legal actions.

**2612 JUDGES** preside over trials and hearings; interpret and enforce rules of procedure and making rulings regarding the admissibility of evidence; determine the rights and obligations of the parties involved and in cases tried by jury; instruct the jury on points of law that are applicable to the case.

**2619 LEGAL PROFESSIONALS NOT ELSEWHERE CLASSIFIED** includes those who perform legal functions other than pleading or prosecuting cases or presiding over judicial proceedings; give advice on legal aspects of various personal, business and administrative problems; draw up legal documents and contracts; arrange property transfers; determine the cause of any death not obviously due to natural causes.

**2621 ARCHIVISTS AND CURATORS** evaluate and preserve records for administrative, historical, legal, evidential; direct or carry out the preparation of indexes, bibliographies, microfilm copies and other references aids to the collected material and making them available to users; research the origin, distribution and use of material and objects of cultural and historical interest; organize, develop and maintain collections of artistic, cultural, scientific or historically significant items; direct or undertake classification and cataloguing of museum and art gallery collections and organizing exhibitions; research into appraising, organizing and preserve historically significant and valuable documents such as government papers, private papers, photographs, maps, manuscripts and audio visual materials.

**2622 LIBRARIANS AND RELATED INFORMATION PROFESSIONALS** organize, develop and maintain a systematic collection of books, periodicals and other printed or audio visually and digitally recorded materials; organize, classify and cataloguing library material; manage library borrowing and interlibrary loan facilities and information networks; retrieve material and provide information to business and other users based on the collection itself or on library and information-network systems; conduct research and analyse or modify library and information services in accordance with changes in users' needs.

**2631 ECONOMISTS** conduct research to improve or develop economic theories, concepts and operational methods in areas such as production and marketing, national and international trade trends, monetary, fiscal and pricing policies, employment, income, productivity and consumption; compile, analyse and interpret economic data using economic theory and a variety of statistical and other techniques; and advise on economic policy and course of action to be followed in the light of past, present and projected economic factors and trends.

**2632 SOCIOLOGISTS, ANTHROPOLOGISTS, AND RELATED PROFESSIONALS** plan and carry out tests to measure mental, physical and other characteristics such as intelligence, abilities, aptitudes, and potentialities; interpret and evaluate results, and provide follow-up services; and study psychological factors in the diagnosis, treatment and prevention of mental illnesses and emotional and personality disorders.

**2633 PHILOSOPHERS, HISTORIANS AND POLITICAL SCIENTISTS** researching, including 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; consult and compare primary sources such as original or contemporary records of past events and secondary sources such as archaeological or anthropological findings; extract relevant material, checking its authenticity, and researching into and describe the history of a particular period, country or region or a particular facet- for example economic, social or political of it history; conduct research in such fields as political philosophy or past and present theory and practice of political systems, institutions or behaviour.

**2634 PSYCHOLOGISTS** plan and carry out tests to measure mental, physical and other characteristics such as intelligence, abilities, aptitudes, potentialities, interpreting and evaluating results and providing advice; analyze the effect of heredity, social occupational and other factors on individual thoughts and behaviour; conduct counselling or therapeutic interviews with individuals and groups and providing follow-up services.

**2635 SOCIAL WORK AND COUNSELING PROFESSIONALS** provide advice and guidance to individuals, families, groups, communities and organizations in response to social and personal difficulties. They assist client to develop skills and access resources and support services needed to respond to issues arising from unemployment, poverty, disability, addiction, criminal and delinquent behaviour, and marital; analyse the client's situation and presenting alternative approaches to resolving problems; plan and implement programmes of assistance for clients, including crisis intervention and referral to agencies that provide financial assistance, legal aid, housing, medical treatment and other services.

**2636 RELIGIOUS PROFESSIONALS** perpetuate sacred traditions, practices and beliefs; conduct religious services, rites and ceremonies; undertake various administrative and social duties, including participating in committees and meetings of religious organizations; prepare and present religious sermons; develop and direct study courses and religious education programs; counsel individuals regarding interpersonal, health, financial and religious problems.

**2641 AUTHORS AND RELATED WRITERS** plan, research and write books, scripts, storyboards, plays, essays, speeches, manuals specifications and other non- journalistic articles for publication or presentation; conduct research to establish factual content and to obtain information; analyse material such as specifications, notes and drawings and create manuals instruction for use, user guides and other documents to explain clearly and concisely the installation, operation and maintenance of software, electronic, mechanical and other equipment.

**2642 JOURNALISTS** research, investigate, interpret and communicate news and public affairs through newspapers, televisions, radios and other media; collect, report and comment on news and current affairs for publication in newspapers and periodicals; receive, analyse and verify news and other copy for accuracy; research and report on developments in specialized fields; write editorial and commentaries on topics of current interest to stimulate public interest and express the views of a publication or broadcasting station.

**2643 TRANSLATORS, INTERPRETERS AND OTHER LINGUISTS** translate or interpret from one language into another and study the origin, development and structure of languages; study relationships between ancient parent languages and modern languages groups, tracing the origin and evolution of words, grammar and language forms and presenting findings; translate 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.

**2651 VISUAL ARTISTS** conceive and develop ideas, designs and styles for paintings, drawings and sculptures; arrange objects, positioning models, and selecting landscapes and other visual forms according to chosen subject matter; create 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; create drawings and engraving or etching them on metal, wood or other materials.

**2652 MUSICIANS, SINGERS AND COMPOSERS** write, arrange, conduct and perform musical compositions; create melodic, harmonic and rhythmic structure to express ideas and emotions in musical form; translate ideas and concepts into standard musical signs and symbols for reproduction and performance; adapt and arrange music for particular instrumental or vocal groups, instruments or occasions; conduct instrumental or vocal groups; select music for performance and assigning instrumental parts to musicians.

**2653 DANCERS AND CHOREOGRAPHERS** conceive and create dances which often convey story, theme, idea or mood by a pattern of steps, movements and gestures; 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; train, exercise and attend dance classes to maintain the required levels of ability and fitness; audit for dance roles or for membership in dance companies.

**2654 FILM, STAGE AND RELATED DIRECTORS AND PRODUCERS** choose writers, studying scripts to determine artistic interpretation, and instructing actors on acting methods; direct all aspects of dramatic productions on stage, television, radio or in motion pictures; plan, organize and control the various stages and scheduling involved in the production of presentations, motion pictures, television shows and radio programmes; engage and supervise all technical personnel and determining the treatment, scope and scheduling of production.

**2655 ACTORS** learning lines and cues and playing parts in dramatic productions on stage, commercials, television, radio or in motion pictures; assume characters created by a playwright or author and communicate this to an audience; tell stories or reading literary works aloud to educate or entertain listeners; attend auditions and casting in order to audition for roles; read scripts and undertake research to gain understanding of parts, themes and characteristics.

**2656 ANNOUNCERS ON RADIO, TELEVISION AND OTHER MEDIA** reading news bulletins and making other announcements on radio or television; introducing performing artists or persons being interviewed and making related announcements on radio or television or in theatres, night clubs and other establishments; interview persons in public especially on radio or television.

**2659 CREATIVE AND PERFORMING ARTISTS NOT ELSEWHERE CLASSIFIED** includes clowns, magicians, acrobats and other performing artists; perform amusing antics and telling funny stories; perform tricks of illusion and sleight of hand and feats of hypnotism.

### **3 TECHNICIANS AND ASSOCIATE PROFESSIONALS**

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

**3111 CHEMICAL AND PHYSICAL SCIENCE TECHNICIANS** collecting samples and preparing materials and equipments, tests and analyses; carry out routine laboratory tests and perform a variety of technical support functions to assist chemical and physical scientists in research, development, analysis and testing; control the quality and quantity of laboratory supplies by testing samples and monitoring usage and preparing detailed estimates of quantities and costs of materials and labour required for projects, according to the specifications given; prepare materials for experimentation such as freezing and slicing specimens and mixing chemicals; collecting and testing earth and water samples, recording observations and analysing data in support of geologists or geophysicists.

**3112 CIVIL ENGINEERING TECHNICIANS** perform and assist with field and laboratory tests of soils and construction materials; provide technical assistance connected with the construction of buildings and other structures and with surveys or the preparation of survey reports; apply technical knowledge of buildings and civil engineering principles and practices in order to identify and solve problems arising; assist with the preparation of detailed estimates of quantities and costs of materials and labour required for projects, according to the specifications given; inspect 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; advise 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.

**3113 ELECTRICAL ENGINEERING TECHNICIANS** provide technical assistance in research on development of electrical equipment and facilities or testing prototypes; design and prepare blueprints of electrical installations and circuitry according to the specifications given; prepare detailed estimates of quantities and costs and materials and labour required for manufacture and installation; 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; assemble, install, test, calibrating, modify and repair electrical equipment and installations to conform with regulations and safety requirements.

**3114 ELECTRONICS ENGINEERING TECHNICIANS** provide technical assistance in research and development of electronic equipment, or testing prototypes; design and prepare blueprints of electronic circuitry according to the specifications given; prepare detailed estimates of quantities and costs of materials and labour required for the manufacture and installation of electronic equipment; monitor technical aspects of the manufacture, utilization, maintenance and repair of electronic equipment to ensure satisfactory performance and ensure compliance with specifications and regulations; assist in the design, development, installation, operation and maintenance of electronic systems; plan installation methods, checking completed installations for safety and controls or undertaking the initial running of the new electronic equipment.

**3115 MECHANICAL ENGINEERING TECHNICIANS** provide technical assistance in research on and development of machines and mechanical installations, facilities and components or testing prototypes; design and prepare layouts of machines and mechanical installations, facilities and components; prepare detailed estimates of quantities and costs of materials and labour required for manufacture and installation; monitor technical aspects of manufacture, utilization, maintenance and repair of machines and mechanical installations, facilities and components to ensure satisfactory performance and compliance; develop and monitor the implementation of safety standards and procedures for marine survey work in relation to ships' hulls equipment and cargoes.

**3116 CHEMICAL ENGINEERING TECHNICIANS** assist in research on development of industry chemical processes, plant and equipment, or testing prototypes; design and prepare layouts of chemical plants; prepare detailed estimates of quantities and costs of materials and labour required for manufacture and installation; monitor technical aspects of the construction, installation, operation, maintenance and repair of chemical plants to ensure satisfactory performance and compliance with specifications and regulations.

**3117 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 transportation and storing oil and natural gas, and for extraction of metals from ores; prepare detailed estimates of quantities and costs of materials and labour required for mineral, oils and gas exploration, extraction, transport projects; monitor technical, regulatory and safety aspects of the construction, installation, operation, maintenance and repair of mineral, oils and gas exploration, extraction, transport and storage installations and mineral processing plants; help plan and design mines, mine shafts, tunnels and underground first-aid facilities.

**3118 DRAUGHTS-PERSONS** prepare technical drawings, maps and illustrations from sketches, measurements and other data and copy final drawings and paintings onto printing plates; preparing and revising working drawings from sketches and specifications prepared by engineers for the manufacture, installation and erection of machinery and equipment or for the construction, modification, maintenance and repair of buildings, dams, bridges, roads; operate computer-aided design and draughting equipment to create, modify and generate hard-copy and digital representations of working drawings; operate digitizing table or similar equipment to transfer hard-copy representation of working drawings, maps and other curves to digital forms.

**3119 PHYSICAL AND ENGINEERING SCIENCE TECHNICIANS NOT ELSEWHERE CLASSIFIED** assist scientists and engineers engaged in developing procedures or conducting research on safety on biomedical, environmental or industrial and production engineering; collect data and provide 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 of establishment; aiding in the identification of potential hazards and introducing safety procedures and devices.

**3121 MINING SUPERVISORS** oversee mining and quarrying activities and directly supervise and coordinate the activities of miners; establish methods to meet work schedules and recommendations measures to mining managers to improve productivity; working with managerial and technical personnel, other departments and contractors to resolve operational problems and coordinate activities; determine staffing and material needs for the mine or quarry.

**3122 MANUFACTURING SUPERVISORS** coordinate and supervise the activities of process control technicians, machine operators, assemblers and other manufacturing labourers; organize and plan the daily work with regard to plans, economy, staff and environment; prepare cost estimates, records and reports; identify shortage of staff or components; ensure safety of workers; instructing and training new staff.

**3123 CONSTRUCTION SUPERVISORS** reading specifications to determine construction requirements and planning procedures; organizing and coordinate the material and human resources required to complete jobs; examine and inspect work progress; examine equipment and construction sites to ensure that health and safety requirements are met; supervise construction sites and coordinate work other construction projects; supervise the activities of building trades workers, labourers and other construction workers.

**3131 POWER PRODUCTION PLANT OPERATORS** operating, monitoring and inspecting various types of energy- operating power plants; operating and controlling power-generating system 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; controlling start-up and shut-down of power plant equipment, controlling switching operations, regulating water levels and communicating with systems operations to regulate and coordinate transmission loads, frequency and line voltage; taking readings from charts, meters and gauges at established intervals, trouble shooting and performing corrective action as necessary; completing and maintaining station records, logs and reports, and communicating with other plant personnel to assess equipment operating status.

**3132 INCINERATOR AND WATER TREATMENT PLANT OPERATORS** operating and monitoring computerized control systems, machinery and related equipment in wastewater treatment, sewage treatment and liquid waste plant to regulate flow, treatment and disposal of sewage and wastes, and in water filtration and distribution of water for human consumption and for later disposal into natural water systems; controlling the operation of multiple-hearth incinerator furnaces and related equipment to burn sludge and solid waste in waste treatment plants; inspecting equipment and monitoring operating conditions, meters, filters, chlorinators and gauge in central control rooms to determine load requirements, to verify that flows pressure and temperatures are within specifications and to detect malfunctions; monitoring and adjusting controls of auxiliary equipment such as exhaust emissions, scrubbers and incinerator heat recovery units; collect and testing water and sewage samples for chemical and bacterial content, using test equipment and colour analysis standards; analysing test results to make adjustments to plant equipment and systems to disinfect and deodorize water and other liquids; perform security and safety checks in plant and on grounds.

**3133 CHEMICAL PROCESSING PLANT OPERATORS** operate and monitor chemical plants and related multi-function process control machinery and adjusts and maintains process units and equipment which distil filter, separate, heat or refine chemicals. They operate electronic or computerized control panels from a central control room to monitor and optimize physical and chemical processes for several processing units; adjusting equipment, valves, pumps, controls and process equipment; controlling the preparation, measuring and feeding of raw materials and processing agents such as catalysts and filtering media into plant; controlling process start up and shut down trouble shooting and monitoring outside process equipment; verify equipment for malfunctioning, carrying out routine operating tests and arranging for maintenance; analysing sample products, performing tests, recording data and writing production logs.

**3134 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. They operate electronic or computerized control panels from a central control room to monitor and optimize physical and chemical processes for several processing units; adjusting equipment, valves, pumps, controls and process equipment; controlling the preparation, measuring and feeding of raw materials and processing agents such as catalysts and filtering media into plant; controlling process start up and shut down trouble shooting and monitoring outside process equipment; verify equipment for malfunctioning, carrying out routine operating tests and arranging for maintenance; analysing sample products, performing tests, recording data and writing production logs.

**3135 METAL PRODUCTION PROCESS CONTROLLERS** operate and monitor multi-function process control machinery and equipment to control the processing of metal rolling mills and metal heat-treating or metal-extrusion; controlling 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; operating multi-function central process control machinery to grind, separate, filter, melt, roast, treat, refine or otherwise process metals; observing computer printouts, video monitors and gauges to verify specified processing conditions and to make necessary adjustments; coordinate and supervise production crew such as machine and process operators, assistants and helpers; starting up and shutting down the production system in cases of emergency or as required by schedule; providing and organizing training for members of production crews.

**3139 PROCESS CONTROL TECHNICIANS NOT ELSEWHERE CLASSIFIED** Unit group includes those who operate multiple process control equipment in manufacturing assembly lines and paper and pulp production.

**3141 LIFESCIENTECHNICIANS (EXCLUDING 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, environment protection, plant and animal biology, microbiology and cell and molecular biology. They assist in designing, setting up and conducting experiments; setting up, calibrating, operating and maintaining laboratory instruments and equipment; collecting and preparing specimens and samples, chemical solutions and slides and growing cultures for use in experiments; perform routine field and laboratory tests; monitor experiments to ensure adherence to correct laboratory quality control procedures and health and safety guidelines; making observations of tests and analysing, calculating, recording and reporting test results using appropriate scientific methods; preserving, classifying and cataloguing specimens and samples.

**3142 AGRICULTURAL TECHNICIANS** prepare materials and equipment for experiments, tests and analyses; collecting and preparing specimens such as soils, plant, plant or animal cells, tissues or parts of animal organs for experiments, tests and analyses; assist with and performing experiments, tests and analyses applying methods and techniques such as microscopy, histochemistry, chromatography, electrophoresis and spectroscopy; identifying pathogenic micro-organisms and insects, parasites, fungi and weeds harmful to crops and livestock, and assisting in devising methods to control; analysing produce to set and maintain standards of quality; conduct or supervising operational programmes such as fish hatchery, greenhouse and livestock production programmes; analyse samples of seeds for quality, purity and germination rating; collect data and estimate quantities and costs of materials and labour required for projects; organise maintenance and repairs of research equipment..

**3143 FORESTRY TECHNICIANS** conduct forest inventories, surveys and field measurements following accepted scientific and operational procedures; assisting in and performing technical functions in the preparation of forest management and harvest plans using photogrammetric and mapping techniques and computerized information systems; assisting in planning and supervision of construction of access routes and forest roads; implementing, supervision of construction of access routes and forest roads; implementing, supervising and performing technical functions in silvi-cultural operations involving site preparation, planting and tending of tree crops; coordinating activities such as timber scaling, forest fire suppression, disease or insect control or pre-commercial thinning of forest stands; supervising and performing technical functions in forest harvesting operations.

**3153 AIRCRAFT PILOTS AND RELATED ASSOCIATE PROFESSIONALS** flying and navigating aircraft in accordance with established control and operating procedures; preparing and submitting flight plans or examining standard flight plans; controlling the operation of mechanical, electrical and electronic equipment and ensuring that all instruments and controls work properly; applying knowledge of principles and practices of flying in order to identify and solve problems arising in the course of their work; examining maintenance records and conducting inspections to ensure that aircrafts are mechanically sound, maintenance has been performed and that all equipment is operational; signing necessary certificates and maintaining official records of flight.

**3154 AIR TRAFFIC CONTROLLERS** directing and controlling aircraft approaching and leaving airport and their movement on the ground; directing and controlling aircraft operating in designated airspace sectors; examining and approving flight plans; informing flight crew and operations staff about weather conditions, operational facilities, flight plans and air traffic, applying knowledge of principles and practices of air traffic control in order to identify and solve problems arising in the course of their work; initiating and organizing emergency, search and rescue services and procedures.

**3155 AIR TRAFFIC SAFETY ELECTRONICS TECHNICIANS** carry out technical duties related to the development of electronic and computerized air navigation systems and equipment, and testing prototypes; providing technical help in the design and layout of specific interface circuitry of air navigation and aircraft detection tracking systems; preparing and contributing to the preparation of cost estimates and technical and training specifications for air traffic control and safety equipment; 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.

## **32 HEALTH ASSOCIATE PROFESSIONALS**

**3211 MEDICAL IMAGING AND THERAPEUTIC EQUIPMENT TECHNICIANS** operate or oversee operation of radiologic, ultrasound and magnetic imaging equipment to produce images of the body for diagnostic purposes; explain procedures, observe and position patients, and use protection devices to ensure safety and comfort during examination, scan and treatment; position imaging or treatment equipment, monitor video displays, and adjust settings and controls according to technical specifications; review and evaluate developed X-rays, videotape or computer-generated information if images are satisfactory for diagnostic purposes, and record results of procedures; monitor patients' conditions and reactions and report abnormal signs to a medical practitioner; administer, detect and map radiopharmaceuticals or radiation in patients' bodies, using radioisotope, camera or other equipment for diagnosing and treating diseases.

**3212 MEDICAL AND PATHOLOGY LABORATORY TECHNICIANS** conduct chemical analysis of body fluids, including blood, urine and spinal fluid, to determine presence of normal and abnormal components; operate, calibrate and maintain equipment used in quantitative and qualitative analysis such as spectrophotometers, calorimeters, flame photometers and computer-controlled analysers; enter data from analysis of laboratory tests and clinical results into record-keeping systems and report results to medical practitioners and other health professionals; analyse samples of biological material for chemical content of radiation; set up, clean and maintain laboratory equipment; establish and monitor programmes to ensure the accuracy of laboratory results, and develop, standardize, evaluate and modify procedures, techniques and tests used in the analysis of specimens.

**3213 PHARMACEUTICAL TECHNICIANS AND ASSISTANTS** prepare medications and other pharmaceutical compounds under the guidance of a pharmacist or other health professional; dispense medicines and drugs to clients and give written and oral instructions on their use, as prescribed by medical doctors, veterinarians or other health professionals; receive prescriptions or refill requests from health professionals and verify that information is complete and accurate according to medical record-keeping standards; maintain proper storage and security conditions for drugs; fill and label containers with prescribed medications; assist clients by answering questions, locating items or referring them to a pharmacist for medication information.

**3214 MEDICAL DENTAL PROSTHETIC TECHNICIANS** examine, interview and measure patients in order to determine their appliance needs, and to identify factors that could affect appliance fit; design, fit, service and repair medical and dental devices and appliances following prescriptions or instructions established by a health professional; design and make orthotic and prosthetic devices using materials such as thermoplastic and thermosetting materials, metal alloys and leather and hand and power tools; fabricate full and partial dentures and construct mouth guards, crowns, metal clasps, inlays, bridgework and other aids.

**3221 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 impairments; administer medications and other treatments to patients, monitor patients' conditions and responses to treatment and refer patients and their families to health professionals; clean wounds and apply surgical dressings; update information on patients' condition and treatments received in records.

**3222 MIDWIFERY ASSOCIATE PROFESSIONALS** providing basic health care and advice before, during and after pregnancy and childbirth; provide delivery care usually on the absence of identified potential complications or assisting medical doctors or midwifery professionals with delivery care.

**3230 TRADITIONAL AND COMPLEMENTARY MEDICINE ASSOCIATE PROFESSIONALS** prevent, care for and treat human physical and mental illnesses, disorders and injuries using herbal or other therapies based on theories, beliefs and experiences originating in specific cultures; they administer treatment using traditional techniques and medicaments.

**3240 VETERINARY TECHNICIANS AND ASSISTANTS** advise communities and individuals on the treatment of animals and their diseases and injuries; conduct examinations of animals to make diagnoses or refer more difficult cases to Veterinarians when needed; treat ill or injured animals, especially for common diseases and disorders; prepare and take care of instruments and materials used in the treatment of animals; carry out technical tasks connected with artificial insemination of animals; get animals ready for examination or treatment; and hold them during treatment, when necessary.

**3251 DENTAL ASSISTANTS AND THERAPISTS** advise communities and individuals on dental hygiene, diet and other preventive measures to reduce potential risks to oral health; conduct visual and physical examinations of patients' mouths, teeth and related structures to assess oral health status; identifying cases of patients with poor oral health requiring referral to a dentist; provide fluoride treatments, cleaning and removing deposits from teeth, preparing cavities and placing fillings, administering local anaesthesia and perform other types of basic or routine clinical dental procedures; prepare, clean and sterilize dental instruments and equipments used in the examination and treatment of patients.

**3252 MEDICAL RECORDS AND HEALTH INFORMATION TECHNICIANS** planning, developing maintaining and operating a variety of health record indexes and storage and retrieval systems to collect, classify store and analyse information; transcribe, compile and process patients medical records, admission and discharge documents and other medical reports into record- keeping systems to provide data for patients monitoring, research, billing, cost control and care improvements; review records for completeness, accuracy and compliance with regulations; translating narrative descriptions and numeric information from medical records and other documents on health services delivery into codes associated with standard classification system.

**3253 COMMUNITY HEALTH WORKERS** provide information to families and communities on a range of health issues; visit families to provide information on the health, social and other services available and support them in gaining access to these services; distributing of households medical supplies for the prevention and treatment of endemic diseases such as malaria, pneumonia and diarrhoea and instructing families to use these products; collect data from households and communities who do not usually access medical establishments for purposes of patients monitoring and referral.

**3254 DISPENSING OPTICIANS** examine and take facial and eye measurements of clients for fitting of eye glasses and other optical devices; provide advice to clients on selection and maintenance of eye glasses and frames, types of contact lenses and other optical devices for performance, safety, comfort; interpret optical prescriptions and preparing work orders for optical laboratories for grinding and mounting lenses in frames; verify exactness of finished optical appliances and devices to the original prescription and fit of clients.

**3255 PHYSIOTHERAPY TECHNICIANS AND ASSISTANTS** administer manual treatments such as massage therapy or pressure point therapy; administer electrical modality treatments, ultrasound and other physical therapies using specialized techniques and equipment; instructing, motivating, safeguard and assisting patients as they practice physical, relaxation techniques and functional activities; conferring with physiotherapies or other health care providers to evaluate patients information for planning, modifying and coordinating treatment; monitor and record patients progress during treatment .

**3256 MEDICAL ASSISTANTS** assist medical doctors and other health professionals to examine and treat patients including measuring and recording vital signs, administering medications and perform routine clinical; procedures such as giving injections and removing sutures; getting patients ready examination and treatment including explaining procedures and showing them examination rooms; preparing and handling medical instruments and supplies , including sterilizing instruments and disposing of contaminated supplies in accordance with safety procedures; collecting blood, tissue or other specimens and preparing them for laboratory testing; provide information to patients and families on health care topics; provide prescriptions and drug refill information to pharmacies.

**3257 ENVIRONMENTAL AND OCCUPATIONAL HEALTH INSPECTORS AND ASSOCIATES** advise employers' and workers representatives on the implementation of governmental and other rules and regulations concerning occupational safety and the working environment; inspect places of work to ensure that the working environment, machinery and equipment conform to government and other rules, regulations and standards related to sanitation or occupational and environmental health and safety; inspect establishments to ensure that they conform to governmental and other rules and regulations concerning emission of pollutants and disposal of dangerous wastes; inspecting areas of production, processing, transport, handling, storage and sale of products to ensure conformity with governmental rules and regulations.

**3258 AMBULANCE WORKERS** assess the health status of persons involved in accidents, natural disasters and other emergency situations; 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; monitoring changes in the health status of patients during transport to and from medical rehabilitation and other health care facilities; providing information and training to community groups and essential service workers in first aid for initial care of an illness or injury; attending and patrolling large-scale public gatherings and other events where health emergencies are likely to occur.

**3259 HEALTH ASSOCIATE PROFESSIONALS NOT ELSEWHERE CLASSIFIED** health associate professionals not classified in sun-major group 32 which include HIV counsellors, family planning counsellors; they interview and examine patients to obtain information on their health status and the nature and extent of injury, illness or other physical or mental health condition, provide information and counselling to patients and families about certain health conditions, prevention and treatment options, treatment adherence and personal behaviours that affect health outcomes; administer therapeutic care and treatment to patients; perform certain basic clinical procedures such as administration of HIV antibody tests or insertion of intrauterine devices; monitor patients' progress through treatment plan and identifying signs and symptoms requiring referral to a medical doctor.

### **33 BUSINESS AND ADMINISTRATION ASSOCIATE PROFESSIONALS**

**3311 SECURITIES AND FINANCE DEALERS AND BROKERS** obtaining information about the financial circumstances of customers and companies in which investments may be made; analysing market trends for securities, bonds, stocks and other financial instruments, including foreign exchange; informing prospective customers about market conditions and prospects; advising on and participating in the organization of loans and placement of stocks and bonds in the financial market to raise capital for customers; recording and transmitting buy and sell orders for securities, stocks, bonds or other financial instruments and for foreign exchange for future or immediate delivery.

**3312 CREDIT AND LOANS OFFICERS** interviewing applicants for personal; researching and evaluating loan applicants' financial status, references, credit and ability to repay the loan; submitting credit and loan applications to management with recommendations for approval or rejection; approving or rejecting loan applications within authorized limits ensuring that credit standards of the institutions are respected; keeping records of payments, preparing routine letters requesting payment for overdue accounts and forwarding these legal actions.

**3313 ACCOUNTING ASSOCIATE PROFESSIONALS** maintaining complete records of all financial transactions of an undertaking according to general bookkeeping principles, with guidance from accountants; verifying accuracy of documents and records relating to payments, receipts and other financial transactions; preparing financial statements and reports for specified periods; applying knowledge of bookkeeping principles and practices in order to identify and solve problems arising in the course of their work .

**3314 STATISTICAL, MATHEMATICAL AND RELATED ASSOCIATE PROFESSIONALS** assist in planning and performing mathematical, statistical and actuarial calculations; prepare detailed estimates of quantities and costs of materials and labour required for statistical census and survey operations; perform technical tasks connected with establishing, maintaining and using registers and sampling frames for census and survey operations; perform technical tasks connected with data collections and quality control operations in censuses and surveys; use standard computer software packages to perform mathematical, statistical and actuarial calculations; and prepare mathematical, statistical and actuarial results for presentation in graphical or tabular form

**3315 VALUERS AND LOSS ASSESSORS** determine the quality or value of raw materials, real estate, diamonds, industrial equipment, personal and household effects, works of art and other objects offered for sale or to be insured; assess the extent of damage or loss and liabilities of insurance companies and underwriters for losses covered by insurance policies; and sell by auction various kinds of property, cars, commodities, livestock, art, jewellery and other objects.

**3321 INSURANCE REPRESENTATIVES** obtain information about customers' circumstances necessary to determine appropriate types of insurance and conditions; negotiating with customers to determine type and degree of risk for which insurance is required; explaining details of insurance and conditions, risk coverage premiums and benefits to customers; assisting clients to determine the type and level of coverage required, calculating premiums and established method of payment.

**3322 COMMERCIAL SALES REPRESENTATIVES** solicit orders and sell goods to retail, industrial, wholesale and other establishments; sell technical equipment, supplies and related services to business establishments or individuals; provide prospective customers with general and specialized information about the characteristics and functioning of the equipment, and demonstrating its use; and reporting customers' reactions and requirements to manufacturers.

**3323 BUYERS** negotiate and contract for the purchase of equipment, raw materials, products and supplies for industrial plants, utilities, government units or other establishments; negotiate and contract for the purchase of merchandise for resale; obtain information about requirements and stock; and determine quantity and quality to be purchased, costs, delivery dates and other contract conditions; purchasing general and specialized equipment, materials or business service for use or for further processing by their establishments; inviting tenders, consulting with suppliers and reviewing quotations.

**3324 TRADE BROKERS** buy and sell commodities and shipping services; establishing contacts between buyers and sellers requirements of clients and giving advise accordingly; buying and selling cargo space on ships; negotiating purchase or sale of commodities and commodity futures; finding cargo or storage for commodities and negotiating freight, shipping and storage charges.

**3331 CLEARING AND FORWARDING AGENTS** carry out customs clearance procedures for exports and imports; ensure that insurance is in order; ensuring that export/import licenses and other formalities are in order; checking import/export documentation to determine cargo contents, and classifying goods into different fee or tariff groups using a tariff coding system.

**3332 CONFERENCE AND EVENT PLANNERS** promoting conferences, conventions and trade shows to potential customers; responding to inquiries concerning services provided and costs for room and equipment hire, catering and related services; arranging and coordinating services such as conference facilities, catering, signage, displays, audiovisuals and computer equipment, accommodation, transport and social events for participants and logistical arrangements for presenters.

**3333 EMPLOYMENT AGENTS AND CONTRACTORS** matching job seekers with vacancies; finding workers for vacant posts against a commission from the employer or worker; discuss with employers the skill and other characteristics required of the workers to be employed or contracted; finding workers with appropriate skills and undertaking the necessary formalities according to national and international regulations.

**3334 REAL ESTATE AGENTS AND PROPERTY MANAGERS** obtaining information about properties to be sold or leased, the circumstances of their owners and the needs of prospective buyers or tenants; showing properties to be sold or leased to prospective buyers or tenants and explaining terms of sale or conditions of rent or lease; drawing up lease and sale agreements and estimating costs; arranging signing of lease agreements and transfer of property rights.

**3339 BUSINESS SERVICES AGENTS NOT ELSEWHERE CLASSIFIED** business agents not classified elsewhere in Minor group 333: Business Services Agents; includes those who establish business contacts, sell business services such as advertising space in the media, arrange contacts for performances of athletes, entertainers and artists for the publication of books and the production of plays, or the recording, performance and sale of music, sell property and goods by auction.

**3341 OFFICE SUPERVISORS** coordinate, assign and review the work of clerks engaged in word processing, record keeping and filing, operating telephones and switchboards, data entry, desktop publishing and other activities involving general office and administrative skills; establish work schedules and procedures

and coordinating activities with other work units or departments; evaluate employees job performance and conformity with regulations and recommending appropriate personal action; train and instruct employees in job duties, safety procedures and company policies or arranging for training to be provided.

**3342 LEGAL SECRETARIES** prepare and process legal documents and papers such as deeds, wills, affidavits and briefs; review and proofreading documents and correspondence to ensure compliance with legal procedures; mailing, faxing or arranging for delivery of legal correspondence to clients, witnesses and court officials; organise and maintain documents case files and law libraries.

**3343 ADMINISTRATIVE AND EXECUTIVE SECRETARIES** draft administrative correspondence and minutes; obtain, propose and monitor deadlines; screen requests for meetings; schedule and organise meetings and travel arrangements for the head of unit and other members of staff; assist in the preparation of budgets, monitoring of expenditures, drafting of contracts and purchasing or acquisition and hosting hospitality functions for outside visitors or members of staff; make verbatim reports of proceedings in legislative assemblies, courts of law or other places in shorthand or by other means; assist head of unit and other staff with inquiries of an administrative or organisational nature; and write answer business or technical letters and other similar correspondence.

**3344 MEDICAL SECRETARIES** scheduling and confirming medical appointments and communicating messages for medical staff and patients; compiling, recording and reviewing medical charts, reports, documents and correspondences; interview patients to complete forms, documents and case histories; maintaining medical files and records and technical library; assisting in the preparation of budgets, drafting of contracts and purchasing or acquisition orders.

**3351 CUSTOMS AND BORDER INSPECTORS** patrolling national borders and coastal waters to stop persons from illegally entering or leaving the country and from illegally importing and exporting currency or goods; checking travel documents of persons crossing national borders to ensure that they have the necessary authorizations and certificates; 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; 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 and to verify that necessary payments have been made.

**3352 GOVERNMENT TAX AND EXCISE OFFICIALS** check persons and vehicles crossing national borders to enforce relevant government rules and regulations; examine tax returns, bills of sale and other documents to determine the types of fees to be paid by individuals or businesses; examine applications for licences to export or import goods, set up a business, build a house or other structures and determine the specific conditions to be attached to the licence; examine applications to visit the country or to obtain a passport; examine applications for benefits to determine eligibility and amount due.

**3353 GOVERNMENT SOCIAL BENEFITS OFFICIALS** advising individuals and organizations on government laws, rules and regulations concerning government benefit programme and determination and disbursement of payments or referral to services as well as on the public's rights and obligations; examining applications and other relevant documents to determine types and amounts of benefit which individuals are eligible to receive; assessing documentation and interviewing benefit recipients to ensure eligibility for continuing benefits or services.

**3354 GOVERNMENT LICENSING OFFICIALS** advising individuals on government laws and regulations concerning the type of license required and the conditions attached to such licences, and on the public's rights and obligations; examining applications and relevant documents and determining whether a license can be granted and the conditions which should be attached; perform related administrative tasks to process applications, document activities, evaluations and determinations, and to prepare correspondences to inform applicants of licensing decisions.

**3355 POLICE INSPECTORS AND DETECTIVES** investigate facts and circumstances related to the prevention and solution of suspected crimes or to obtain information not readily available or apparent concerning the circumstances and behaviour of establishments or persons, mostly in order to prevent crimes.

**3359 GOVERNMENT REGULATORY ASSOCIATE PROFESSIONALS NOT ELSEWHERE CLASSIFIED** government regulatory associate professionals not classified elsewhere, these are agricultural, and fisheries, forestry, prices, wages, and weight and measures inspection.

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

**3411 LEGAL AND RELATED ASSOCIATE PROFESSIONALS** examine legal records and other relevant documents; prepare papers summarising legal positions or set out conditions of loans or insurance; advise clients and agents on legal or technical matters relating to transfer of real estate, stocks or other matters requiring formal registration; and check validity of documents and forward them to company's share register.

**3412 SOCIAL WORK ASSOCIATE PROFESSIONALS** help individuals and families with personal and social problems; collect information relevant to clients' needs and advise them on their rights and obligations; analyse the client's situation and present alternative approaches to resolving problems; work to prevent development of delinquency or to achieve rehabilitation by organizing and supervising social, recreational and educational activities in youth clubs, community centres and similar organizations; compile case records or reports for legal proceedings; plan, evaluate, improve and develop welfare services; and help physically or mentally handicapped persons to obtain adequate treatment and improve their ability to function in society.

**3413 RELIGIOUS ASSOCIATE PROFESSIONALS** undertake religious work; preaching and propagating the teachings of a particular religious faith; assisting at services of public worship and communities; administer and participating in programmes to provide food, clothing and shelter to those in need.

**3421 ATHLETES AND SPORTS PLAYERS** participate as players in competitive sporting events; coach athletes to develop their knowledge of and ability in their sport; participate in the regulation of sporting competitions, and control the progress of these events; and instruct persons in development and maintenance of physical fitness by means of gymnastics and exercises.

**3422 SPORTS COACHES, INSTRUCTORS AND OFFICIALS** identify strengths and weaknesses of athletes or teams; planning, developing and implementing training and practice sessions; develop, plan and coordinate competitive schedules and programmes; motivating and preparing athletes or teams for competitive events or games; formulate competitive strategy, developing game plan and directing athletes and players during games or athletic events; analyse and evaluate athletes or teams performances and modify training programme; monitor and analyse technique and performance.

**3423 FITNESS AND RECREATION INSTRUCTORS AND PROGRAMME LEADERS** plan and carry out recreational and fitness activities; monitor recreational, sports or fitness activities to ensure safety and provide emergency or first assistance when required; evaluate and monitor clients' abilities and fitness and recommending activities; demonstrating and teaching body movements, concepts and skills used in fitness routines and recreational activities.

**3431 PHOTOGRAPHERS** taking photographs for advertising or other commercial, industrial or scientific purposes and to illustrate stories and articles in newspapers, magazines and other publications; taking portraits of persons and groups of persons; determine picture composition and making technical adjustments to equipment and photograph subject.

**3432 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 that enhance living and working environments and sales promotion.

**3433 GALLERY, MUSEUMS AND LIBRARY TECHNICIANS** design and arrange exhibit furnishings, display cases and display areas; assisting in setting up lighting and display equipment; order new library materials and maintaining library records and circulation systems; cataloguing printed and recorded material.

**3434 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.

**3435 OTHER ARTISTIC AND CULTURAL ASSOCIATE PROFESSIONALS** covers artistic and cultural associate professionals not classified elsewhere in Group 343. Included are those who assist directors or actors with staging of theatrical, motion picture and television or commercial productions.

## **35 INFORMATION AND COMMUNICATIONS TECHNICIANS**

**3511 INFORMATION AND COMMUNICATIONS TECHNOLOGY OPERATIONS TECHNICIANS** operating and controlling peripheral and related computer equipment; entering commands using computer terminals and activating controls on computer and peripheral equipment to integrate and operate equipment; monitoring system for equipment failure or errors in performance; respond to program error messages by finding and correcting problems, escalating the problem to other staff or terminate the program; reading job-set up instructions to determine equipment to be used, order for use, material such as disks and paper to be loaded and to control settings.

**3512 INFORMATION AND COMMUNICATIONS TECHNOLOGY USER SUPPORT TECHNICIANS** answering user inquiries regarding software/hardware operation to resolve problems; entering commands and observing system functioning to verify correct operations and detect errors; installing and performing minor repairs to hardware/software or peripheral equipment, following design or installation specification; setting up equipment for employee use and performing or ensuring proper installation of cables, operating systems or appropriate software; maintain records of daily data communication transactions, problems and remedial actions taken, or installation activities.

**3513 COMPUTER NETWORK AND SYSTEMS TECHNICIANS** operating, maintaining and troubleshooting network systems; operating and maintaining data communications systems other than networks; assisting users with network and data communications problems; installing computer hardware, network software, operating system software and application software.

**3514 WEB TECHNICIANS** installing, monitoring and supporting the reliability and usability of internet and intranet websites or web server hardware or software, developing and maintaining documentation, policies and instructions, recording operational procedures and system logs; developing, coordinating, implementing and monitoring security measures; analysing and making recommendations to enhance performance including upgrading and acquiring new systems.

**3521 BROADCASTING AND AUDIOVISUAL TECHNICIANS** controlling equipment to record sound, controlling equipment to edit and mix image and sound recordings to ensure satisfactory quality and to create special image and sound effects; applying knowledge of principles and practices of image and sound recordings and editing to identify and solve problems; controlling radio communications system, satellite services and multiplex systems on land, sea or aircraft.

**3522 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; studying technical material such as blueprints and sketches to determine the method of work to be adopted; preparing detailed estimates of quantities and costs of materials and labour required for the manufacture and installation of telecommunications systems to ensure satisfactory performance and compliance with specifications and regulations.

## **36 PRIMARY AND PRE-PRIMARY EDUCATION TEACHERS**

**3611 PRIMARY EDUCATION TEACHERS** teach a range of subjects within a prescribed curriculum to pupils in primary schools.

**3612 PRE-PRIMARY EDUCATION TEACHERS** organise group and individual play and educational activities to support and promote physical, mental and social development of children below primary-school age.

**3613 VOCATIONAL AND TECHNICAL EDUCATION TEACHERS** teach courses in applied engineering technology, industrial processes, manufacturing techniques, mining, construction, automotive repair and related fields in Vocational Training Centres, the Brigades, the Automotive Trades Training School, at BRIDEC or in similar institutions; or they teach commercial subjects such as typing and computer skills.

**3619 PRIMARY AND PRE-PRIMARY EDUCATION TEACHERS NOT ELSEWHERE CLASSIFIED:** This unit group will include for all other teachers in the technician cadre not catered for in unit groups 3611, 3612 and 3613 as explained above.

## **41 GENERAL AND KEYBOARD CLERKS**

**4110 GENERAL OFFICE CLERKS** recording, preparing, sorting, classifying and filing information; sorting, opening and sending mail; photocopying and faxing documents; preparing reports and correspondence of a routine nature; responding to telephone or electronic inquiries or forwarding to appropriate person; checking figures, preparing invoices and recording details of financial transactions made.

**4120 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; 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.

**4131 TYPISTS AND WORD-PROCESSING OPERATORS** typing written material from rough drafts, corrected copies, voice recordings or short hand using a computer, word processor or typewriter; checking completed work for proper spelling, grammar, punctuation and formatting; filing and storing completed documents on computer hard drive or disk; or maintaining a computer filing system to store, retrieve or update documents.

**4132 DATA ENTRY OPERATORS OR CLERKS** enter coded, statistical, financial and other numerical data into electronic equipment computerized databases, spread sheets or other data repositories using a keyboard, mouse, optical scanner, speech recognition software or other data entry tools; importing and exporting data between different database systems and software.

## **42 CUSTOMER SERVICES CLERKS**

**4211 BANK TELLERS AND RELATED CLERKS** receive money or cheques from clients; pay out money to clients; pay bills and make money transfers on clients' behalf; credit and debit clients' accounts; change money from one currency to another, as requested by clients; make records of all transactions and reconcile them with cash balance; and receive mail, sell postage stamps and conduct other post office counter business.

**4212 BOOKMAKERS, CROUPIERS AND RELATED GAMING WORKERS** determining risks to decide odds and to hedge or refuse bets; preparing and issuing lists of appropriate odds; distributing cards, rolling dice or spinning a roulette wheel; explaining and interpreting operating rules of a gambling establishments.

**4213 PAWN BROKERS AND MONEY LENDERS** evaluate articles offered as pledges, calculating interest, and lending money; returning articles when the loan is paid or, in the event of non-payment, selling pledges articles, lending money as personal loans against success of future harvest and other similar undertakings; collect loans when the pledge involved the success of future harvest and other similar undertakings.

**4214 DEBT COLLECTORS AND RELATED WORKERS** tracing and locating debtors; telephoning, visiting or writing to customers to collect money or arrange for later payments; preparing reports including amounts collected and maintaining records and files related to collection work.

**4221 TRAVEL CONSULTANTS AND CLERKS** obtain information about the availability, cost and convenience of different types of transport and accommodation, ascertaining customers' requirements and advising them on travel arrangements; providing information about local and regional attractions, sightseeing tours, restaurants, arts and entertainment and providing maps and brochures; making and confirming reservations for travel tours and accommodation, issuing tickets, boarding passes and vouchers.

**4222 CONTACT CENTER INFORMATION CLERKS** deal with incoming calls and messages from clients, whether to answer queries, handle calls for service or sort out complaints; identify requirements and entering events into a computer system; invoicing and handling payments.

**4223 TELEPHONE SWITCHBOARD OPERATORS** operate a telephone switchboard or a section thereof, and deal with local or long distance calls and various telephone enquiries; making connections for outgoing calls; dealing with telephone inquiries and recording messages.

**4224 HOTEL RECEPTIONISTS** maintaining an inventory of rooms available for occupancy, reservations and room assignments; welcome, register guests in hotels and other establishments that provide accommodation services; provide information regarding hotel services and services available in the community; contact housekeeping or maintenance services when guest report problems; provide information about availability of accommodation and making room reservations.

**4225 INQUIRY CLERKS** respond to personal, written and electronic mail and telephone inquiries and complaints about the organization's goods and services and policies to other services; issue relevant forms, information kits and brochures to interested parties.

**4226 RECEPTIONISTS (GENERAL)** receive clients or patients, noting inquiries and providing relevant information; make appointments for clients or patients; deal with telephone requests for information or appointments; direct clients or patients to appropriate location or person; make reservations and arrange registration for hotel guests or patients; keep records, or present bills on departure; and supply information pamphlets, brochures or forms.

**4227 SURVEY AND MARKET RESEARCH INTERVIEWERS (ENUMERATORS)** contact individuals by telephone or in person and explaining the purpose of the interview; asking questions following the outlines of questionnaires and surveys; recording responses on paper or entering responses directly into a computer database; identify and resolving inconsistencies in responses.

**4229 CLIENT INFORMATION WORKERS NOT ELSEWHERE CLASSIFIED** includes client information workers not included elsewhere in Minor group 422: Client Information Workers; workers who obtain and process information from clients needed to determine eligibility for service.

### **43: NUMERICAL AND MATERIAL RECORDING CLERKS**

**4311 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; Checking figures, posting and documents for correct entry, mathematical accuracy and proper codes; Operating computers programmed with accounting software to record, store and analyse information; Classifying, recording and summarizing numerical and financial data to compile and keep financial records, using journals and ledgers or computers; Calculating, preparing and issuing bills, invoices, account statements and other financial statements according to established procedures; 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.

**4312 STATISTICAL, INSURANCE AND FINANCE 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; Processing insurance enrolments, cancellations, claims transactions, policy changes and payments; obtaining and compiling statistical or actuarial data based on routine or special sources of information; Calculating totals, averages, percentages and other details and presenting them in the required tabular form; Preparing financial documents, and calculating interest or brokerage charges and stamp duties payable; Maintaining records of bonds, shares and other securities bought or sold on behalf of clients or employers

**4313 PAYROLL CLERKS** collect, verify and process payroll information and compute pay and benefit entitlements for employees within a department, company or other establishment; Maintaining records of employee attendance, leave and overtime to calculate pay and benefit entitlements, using manual or computerized systems; 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; Preparing employee payments and benefit payments by cheque or electronic transfer; Reviewing time sheets, work charts, wage computation and other information to detect and reconcile payroll discrepancies; verifying attendance, hours worked and pay adjustments, and posting information into designated records

**4321 STOCK CLERKS** maintain records of goods produced and production materials received, weighed, issued, dispatched or put into stock; arranging and controlling receipt and dispatch of goods and keeping relevant records; maintaining stock records, verifying issue of goods, estimating needs and making requisitions of new stocks; receiving, storing and issuing tools, spare parts or various equipment, and maintaining relevant records; weighing goods received or produced, or for issue or dispatch, and maintaining relevant records; compiling inventories of furniture and other items received for storage.

**4322 PRODUCTION CLERKS** compute quantities of materials required at specified dates for manufacturing, construction and similar production programmes, and prepare and check production operation schedules; computing quantities, qualities and types of materials required by production programmes; preparing production requirements schedules, ensuring that materials are available when needed, and keeping relevant records; preparing or assisting in the preparation of production operation schedules on the basis of customers orders and production capacity and performance; verifying stocks, arranging deliveries and investigating delays; recording and coordinating the flow of work and materials between departments.

**4323 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; Keeping records of operational aspects and coordinating the timing of passenger and freight transport; Directing train routings within a division or zone of a railway system and keeping related records; Directing, controlling and keeping records of freight handling at a railway yard; 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; Coordinating and keeping records of operational activities concerning air transport of passengers and freight, such as passenger list and freight manifests; Preparing reports for management.

**4411 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; issuing and receiving library books and other materials; placing books and other library materials on shelves; performing clerical activities such as manual and electronic filing, word processing and occasional typing; maintaining journal subscriptions; assisting library users in accessing basic library materials and making interlibrary loans; maintaining library records relating to the acquisition, issue and return of books and other materials.

**4412 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 ; Performing mail-handling duties in public post offices or privately owned delivery establishment; Sorting and delivering mail to private houses and businesses; Providing delivery confirmation records when requested by the client; Sorting and keeping simple records of incoming and outgoing correspondence and dispatching outgoing mail in various establishments.

**4413 CODING, PROOF-READING AND RELATED CLERKS** convert information into codes, verify and correct proofs, and perform a number of miscellaneous clerical duties; converting information into codes and classifying information by codes for data processing purposes; comparing proofs of texts and related material prepared for printing with original material, correcting errors and marking texts for the printer according to the established rules; sorting forms and marking them with identification numbers; sorting documents for filling or to collate sets of pages; addressing circulars and envelopes by hand.

**4414 SCRIBES AND RELATED CLERKS** write letters and complete forms on behalf of persons who are unable to read or write; reading letters and other written matter to persons who are unable to read or write and providing necessary interpretation and information; writing letters and completing forms on behalf of others; offering advice to individuals and interpreting and helping with the completion of government and other official forms.

**4415 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; sorting or classifying materials according to guidelines such as content, purpose, user criteria, or chronological, alphabetical or numerical order; filing material in drawers, cabinets and storage boxes; locating and removing materials from files when requested; keeping records of materials filed and removed; Photocopying, scanning or faxing documents.

**4416 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; updating information on employment history, salaries, performance evaluations, qualifications and training, and leave taken and accumulated; Initiating records for newly appointed workers and checking records for completeness; Processing applications for employment and promotions and advising applicants of results; Receiving and answering inquiries about employment entitlements and conditions; Sending out job applications and announcements of job openings and job examinations; Maintaining and updating manual and computerized filing and registration systems, and compiling and preparing reports and documents relating to personnel activities; Storing and retrieving personnel records and files on request

**4419 OTHER CLERICAL SUPPORT WORKERS NOT ELSEWHERE CLASSIFIED** 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; receiving customers' orders for classified advertising, writing and editing copy, calculating advertising rates and billing customers; writing business and government correspondence such as replies to requests for information and assistance, damage claims, credit and billing inquiries and service complaints; assisting in the preparation of periodicals, advertisements, catalogues, directories and other material for publication; reading newspapers, magazines, press releases and other publications to locate and file articles of interest to staff and clients.

## **5 SERVICES AND SALES WORKERS**

### **51 PERSONAL SERVICE WORKERS**

**5111 TRAVEL ATTENDANTS AND TRAVEL STEWARDS** greeting passengers entering aircraft or ships, checking tickets or boarding passes, and directing passengers to their seats or berths; announcing, explaining and demonstrating safety and emergency procedures such as the use of oxygen masks, seat belts and life jackets; assembling and serving pre-prepared meals and beverages; selling duty free and other goods; taking care of general needs and comfort of passengers, answering inquiries, and keeping cabins clean and tidy; directing and assisting passengers and following prescribed procedures in the event of an emergency, such as evacuating an aircraft following an emergency landing; verifying that first aid kits and other emergency equipment are in working order; administering first aid to passengers in distress; attending pre-flight briefings concerning weather, altitudes, routes, emergency procedures, crew coordination, lengths of flights, food and beverage services offered, and numbers of passengers; preparing passengers and aircraft for take-off and landing; determining special assistance needs of passengers such as small children, the elderly or disabled persons.

**5112 TRANSPORT CONDUCTORS** collecting and issuing tickets, passes or fares, and checking the validity of tickets issued previously; attending to sleeping-cars and their occupants on passenger trains; providing assistance with boarding, seating and luggage as required, especially to elderly, sick or injured people; opening and closing doors for passengers; performing equipment safety checks prior to departure; signalling to drivers to stop or proceed; greeting passengers boarding transportation equipment, and announcing routes and stops; ensuring that safety regulations are respected; responding to passengers requests and complaints and providing information about stops and connections; taking appropriate action in case of emergencies or accidents.

**5113 TRAVEL GUIDES** escorting and guiding tourists on cruises and sightseeing tours; escorting visitors through places of interest such as museums, exhibitions, theme parks, factories and other industrial establishments; describing and providing information on points of interest and exhibits and responding to questions; conducting educational activities for school children; monitoring visitors activities to ensure compliance with establishment or tour regulations and safety practices; greeting and registering visitors and tour participants, and issuing any required identification badges or safety devices; distributing brochures, showing audio visual presentations, and explaining procedures and operations at tour sites; providing for physical safety of groups, and performing activities such as providing first aid and directing emergency evacuations; resolving and problems with tour itineraries, service or accommodation.

**5120 COOKS** planning meals and preparing and cooking foodstuffs; planning, supervising and coordinating the work of kitchen helpers; checking the quality of food; weighing, measuring and mixing ingredients according to recipes and personal judgment; regulating the temperature of ovens, grills, roasters and other cooking equipment; inspecting and cleaning the kitchen, kitchen equipment and serving areas to ensure safe and sanitary food handling practices; operating large volume cooking equipment such as grills, deep fat fryers or griddles.

**5131 WAITERS** setting tables with clean linen, cutlery, crockery and glassware; greeting customers and presenting them with menus and beverage lists; advising on food and beverage choices; taking orders for food and drinks and passing orders to kitchen or bar staff; serving food and beverages to clients at tables; clearing tables and returning dishes and cutlery to the kitchen; presenting bills, accepting payment and operating point of sales machines and cash registers

**5132 BARTENDERS** taking beverage orders from serving staff or directly from patrons; preparing and serving alcoholic and non-alcoholic drinks at a bar; washing used glassware, and cleaning and maintaining bar service areas, tea-and coffee making areas and equipment such as espresso machines; collecting payment for sales, operating cash registers and balancing cash receipts; tapping kegs and attaching supply lines; assisting in keeping the bar properly stocked and arranging bottles and glasses; checking identification of customers to verify age requirement for purchase of alcohol; taking steps to limit problems related to excessive drinking, such as persuading customers to stop drinking, declaring further service or ordering transportation; mixing ingredients to prepare cocktails and other drinks; service snacks or other food items to customers at the bar.

**5141 HAIRDRESSERS** cutting, washing, tinting and waving hair; shaving or trimming beards and moustaches; giving scalp treatments; fitting wigs according to customers' requirements; providing advice on hair care, beauty products and hairstyles; styling hair into dreadlocks and braids and adding hair extensions; arranging appointments and collecting payments; cleaning work areas and sanitizing instruments

**5142 BEAUTICIANS AND RELATED WORKERS** cleaning and applying creams, lotions and related products to face and other parts of the body; giving facial and body massage; applying make-up to clients of a beauty parlor or to actors and other performers; cleaning, shaping and polishing finger and toenails and treating ailments of the human foot such as corns, calluses or deformed toenails; attending to clients taking baths and administering elementary massage; using waxing, sugaring and depilation techniques to remove unwanted bodily hair; advising clients on diet and exercise to assist in weight loss and slimming; arranging appointments and collecting payments

**5151 CLEANING AND HOUSEKEEPING SUPERVISORS IN OFFICES, HOTELS AND OTHER ESTABLISHMENTS** engaging, training, discharging, organizing and supervising helpers, cleaners and other housekeeping staff; purchasing or controlling the purchase of supplies; controlling storage and issue of supplies; supervising general welfare and conduct of individuals in institutions; sweeping, vacuum cleaning, washing and polishing floors, furniture and other fixtures; making beds, cleaning bathrooms and supplying towels, soap and related items; cleaning kitchens and generally helping with kitchen work, including dishwashing; restocking mini-bars and replenishing items such as drinking glasses and writing equipment

**5152 DOMESTIC HOUSEKEEPERS** supervising workers employed in households as domestic staff; purchasing or controlling the purchase of supplies; controlling storage and issue of supplies; assisting in cases of minor injury or illness by performing tasks such as taking temperature, giving medicine and putting on bandages; sweeping, vacuum cleaning, washing and polishing floors, furniture and other fixtures; making beds, cleaning bathrooms and supplying towels, soap and related items; taking care of household pets and plants, receiving visitors, answering telephones, delivering messages and shopping for groceries; preparing and cooking meals, setting and clearing tables and serving food and beverages; cleaning kitchens and generally helping with kitchen work, including dishwashing

**5153 BUILDING CARETAKERS** supervising the work of cleaning, housekeeping and building maintenance staff and contractors; participating in cleaning, simple repairs and maintenance of building interiors; tending furnaces and boilers to ensure provision of heat and hot water; regulating conduct of tenants and visitors in such matters as noise abatement or misuse of property; providing small services to absent tenants such as accepting deliveries on their behalf or providing requested information to callers; notifying management and owners of buildings of the need for major repairs; patrolling buildings to ensure security is maintained; filling out registration forms and providing tenants with copies of rules.

**5161 ASTROLOGERS, FORTUNE TELLERS AND RELATED WORKERS** casting horoscopes of individuals at birth or later to recount past and forecast future events and conditions of their lives; 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; forecasting future events on the basis of these interpretations; determining auspicious times for various human activities such as inaugurations, marriages, journeys and religious and other ceremonies; giving warnings and advice on possible courses of action; advising individuals on precautions to be taken to avoid evil influences

**5162 COMPANIONS AND VALETS** providing companionship to the employer by accompanying him/her to various places, reading, conversing and participating in activities such as sports; assisting in entertaining visitors in the employers home; keeping wardrobe and personal effects of the employer in good order.

**5163 UNDERTAKERS, EMBALMERS AND RELATED WORKERS** making arrangements for and conducting funerals, cremations and burials; embalming human remains to retard or arrest the process of decay; conforming to the health and sanitation and ensuring that legal requirements concerning embalming are met; incising and closing incisions on various parts of the body and reshaping or reconstructing disfigured or maimed human remains when necessary; dressing human bodies and placing them in caskets; 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.

**5164 PET GROOMERS AND OTHER ANIMAL CARE WORKERS** bathing and feeding animals; leading or carrying animals to treatment rooms and holding them during treatment; cleaning and sterilizing veterinary surgical instruments; labeling drugs, chemicals and other pharmaceutical preparations and replenishing stock; sterilizing bottles, beakers and other equipment; cleaning, organizing and disinfecting animal quarters such as pens, stables, cages and yards, and animal equipment such as saddles and bridles; collecting and recording animal information such as weight, size, physical condition, treatments received, medications given and food intake; training animals to develop and maintain desired behaviors for competition, entertainment, obedience, security, riding and other activities; grooming animals by performing tasks such as washing, brushing, clipping and trimming coats, cutting nails and cleaning ears.

**5165 DRIVING INSTRUCTORS** instructing students under actual driving conditions, and explaining and demonstrating the operation of brakes, clutch, gear selection, automatic transmission, signals and lights; teaching road traffic regulations; teaching road craft and safety; advising students when they are ready to undergo driving examination; advising on and teaching advanced driving techniques required for emergency situations; illustrating and explaining handling and mechanical operation of motor vehicles and driving techniques, using blackboard diagrams and audiovisual aids.

**5169 PERSONAL SERVICE WORKERS NOT ELSEWHERE CLASSIFIED** personal service worker not classified elsewhere 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; accompanying clients to restaurants and other outings; acting as a dancing partner; welcoming clients to a night club and ensuring that they are entertained well.

**5211 STALL AND MARKET SALESPERSONS** obtaining permission to set up a stand at a particular place in streets, markets or other open spaces; determining product mix, stock and price levels for goods to be sold; buying or contracting a regular supply of goods to be sold from wholesale suppliers or directly from producers; erecting and dismantling stalls and stands, and transporting, storing, loading and unloading goods for sale; demonstrating and selling goods and accepting payment; stacking and displaying goods for sale, and wrapping and packing goods sold; keeping accounts and maintaining a record of stock levels.

**5212 STREET FOOD SALESPERSONS** obtaining permission or a license, where required, to sell food and drinks on the street or in a public place; obtaining food and drinks for sale; preparing, either before or on the spot, food and drinks for sale; loading and unloading, pushing, pedaling or carrying handcarts, trucks, trays or baskets to bring food and drinks to the desired place in the street, or to public places such as stations or cinemas; displaying and selling food and drinks and accepting payment.

**5221 SHOPKEEPERS** determining product mix, stock and price levels for goods to be sold; purchasing and ordering goods for sale from markets, wholesalers and other suppliers; budgeting and maintaining records of stock levels and financial transactions; determining prices and displaying goods for sale; selling goods to customers and advising them on product use; examining returned goods and deciding on appropriate action; taking inventory of goods in stock.

**5222 SHOP SUPERVISORS** planning and preparing work schedules and assigning staff to specific duties; instructing staff on sales procedures, including how to handle difficult or complex cases; ensuring that customers receive prompt service; participating in and providing advice to managers on interviewing, hiring, training, evaluating, promoting and dismissing staff, and resolving staff grievances; examining returned goods and deciding on appropriate action; taking inventory of goods for sale and ordering new stock; ensuring that goods and services are correctly priced and displayed; ensuring that safety procedures are enforced

**5223 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; determining customer requirements and advising on product range, price, delivery, warranties and product use and care; demonstrating and explaining to customers the establishments goods and services; selling goods and services, accepting payment by a variety of payment methods, preparing sales invoices and recording sales using cash registers; assisting with the on-going management of stock such as product inventories, and participating in stock takes; stacking and displaying goods for sale, and wrapping and packing goods sold.

**5230 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; receiving and verifying payment by cash, cheque, credit card or automatic debit in stores, ticket offices or similar establishments; giving change and issuing receipts; issuing tickets for attendance at sporting and cultural events; counting and recording money received or paid out and balancing against cash register sales records; receiving incoming cash, checking it against sales slips and other documents, and preparing it for deposit at a financial institution; operating cash registers to calculate totals to be paid from or to clients; scanning, weighing and recording prices of goods; wrapping and placing merchandise in bags.

**5241 FASHION AND OTHER MODELS** wear and display clothing and accessories and pose for photographs, film and video, advertising, still photography or for artistic creation; dressing in sample apparel of new or current styles or of type wanted by customers; walking, turning and posing to demonstrate, to best advantage, style and characteristics of garments, fashion accessories and other merchandise; posing as subject for sculpture, painting and other types of visual art; posing for still photography for magazines and other advertising media; posing for television, video and cinema commercials and other productions.

**5242 SALES DEMONSTRATORS** demonstrate goods at commercial premises, exhibitions and private homes; 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; answering questions and offering advice on the use of goods; selling goods or directing customers to sales staff; taking orders and making arrangements for paying, delivering and collection of goods; offering sample goods and distributing catalogues and advertising material

**5243 DOOR-DOOR HAWKERS AND SALESPERSONS** describe, demonstrate and sell goods and services and solicit business for establishments by approaching or visiting potential customers, usually residents in private homes, by going from door to door; giving details of various goods or services and of terms of sale by visiting clients and potential clients in private homes; demonstrating or describing goods or services on offer; recording orders and transactions and placing orders received with suppliers; preparing invoices and sales contracts and accepting payment; distributing letters, information sheets and other documents to clients; compiling lists of prospective clients and calling on them to obtain new business; travelling between sales areas and clients and transporting samples or goods for sale.

**5244 CONTACT CENTRE 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; promoting goods and services by telephone or electronic mail, following scripts and working from lists of contacts; creating interest in goods and services, and seeking a sale or an agreement to see sales representatives; arranging processing and dispatch of goods and services, information kits and brochures to customers; arranging appointments for sales representative; recording notes for follow up action and updating marketing databases to reflect changes to the status of each customer; reporting competitor activities and issues raised by contacts for attention by managers; maintaining statistics of calls made and successes achieved; submitting periodic reports on telemarketing activities and results.

**5245 SERVICE STATION/PETROL ATTENDANTS** sell fuel, lubricants and other automotive products and provide services such as fuelling, cleaning, lubricating and performing minor repairs to motor vehicles; filling fuel tanks and containers to level specified by customer; checking and replenishing air pressure in vehicle tyres, oil and other vehicle fluid levels; washing vehicle windscreens and windows; performing minor repair work to vehicles such as replacing tyres, light bulbs and wind screen wiper blades; maintaining and operating automatic car wash facilities; collecting payments from customers for purchases; cleaning petrol pumps and surrounding driveways, shops and facilities; undertaking stock control and preparing reports on fuel, oil, accessories and other items sold.

**5246 FOOD SERVICE COUNTER ATTENDANTS** serve customers at food counters and finish preparation of simple food items in restaurants, cafes, hotels, fast food outlets, cafeterias, hospitals and other settings; service food to customers at counters; ascertaining the products desired by customers, assisting them in making choices and taking orders; cleaning, peeling, slicing and trimming food stuffs, using manual and electric appliances; preparing simple food items and reheating prepared meals; portioning and wrapping food or placing it directly on plates for service to patrons; packaging takeaway food; stocking refrigerators and salad and buffet bars and keeping records of the quantities of food used; receiving payment for food items purchased.

**5249 OTHER SALESPERSONS/WORKERS NOT ELSEWHERE CLASSIFIED** This unit group includes sales workers not classified elsewhere in Sub-major Group 52, Sales Workers.

**5311 CHILD CARE WORKERS** provide care and supervision for children in residential homes and in before school, after school, vacation and day care centers; assisting children to wash, dress and feed themselves; taking children to and from school or outdoors for recreation; playing games with children or entertaining them by reading or storytelling; assisting in the preparation of materials and equipment for children's education and recreational activities; managing children's behavior and guiding their social development; disciplining children and recommending or initiating other measures to control behavior, such as caring for own clothing and picking up toys and books; observing and monitoring children's play activities; keeping records on individual children, including daily observations and information about activities, meals served and medications administered.

**5312 TEACHERS AIDES** perform non-teaching duties to assist teaching staff, and provide care and supervision for children in schools and pre-schools; demonstrating, supervising and participating in activities that enhance the physical, social, emotional and intellectual development of children in schools and pre-schools; preparing indoor and outdoor areas for learning and recreational activities; assisting children with intellectual, physical, behavioral and other learning difficulties with their studies; assisting children individually to learn social skills; assisting with preparing teaching materials, and copying and collating written and printed material; operating audiovisual equipment, computers and other teaching aids; distributing and collecting lesson material.

**5321 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; providing care, support and treatment to patients and residents of medical, rehabilitative and residential care facilities according to treatment plans established by medical, nursing and other health professionals; 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; 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; providing massage and other non-pharmacological pain relief measures, such as during pregnancy and labour; observing patients condition, responses and behavior and reporting changes to a health professional.

**5322 HOME BASED CARE PERSONAL CARE WORKERS** 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 according to care plans established by a health professional; 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; positioning and lifting clients with physical mobility challenges, and helping transport them in wheelchairs and motor vehicles; providing clients and families with emotional support, information and advice on topics such as nutrition, hygiene, exercise, caring for infants or adapting to disability or illness; maintaining clients environmental hygiene standards, such as changing bed linen, washing clothes and dishes, and cleaning living quarters; providing psychological support to clients such as through conversation or reading aloud

**5329 PERSONAL CARE WORKERS IN HEALTH SERVICES NOT ELSEWHERE CLASSIFIED** This unit group covers providers of routine health and personal care support services not classified elsewhere in Minor Group 532 and personal Care Workers in Health Services, for instance, the group includes occupations such as dental aide, sterilization aide, hospital orderly, medical imaging assistant and pharmacy aide; cleaning and sterilizing surgical, dental and pharmaceutical instruments, bottles, beakers and other equipment; labeling drugs, chemicals and other pharmaceutical preparations and replenishing stock on shelves; lifting, turning and moving patients and transporting them in wheelchairs or on movable beds; preparing patients for examination or treatment; setting up instrument trays, preparing materials, and assisting dentists or radiographers during procedures; exposing diagnostic X-rays.

**5411 FIRE FIGHTERS** prevent, fight and extinguish fires and assist in other emergencies, protect life and property and conduct rescue efforts; responding to fire alarms and other calls for assistance, such as automobile and industrial accidents, bomb threats and other emergencies; controlling and extinguishing fires using manual and power equipment and firefighting chemicals; fighting special types of fires and using special equipment in industrial establishments; rescuing people from burning buildings and accident sites and those trapped in dangerous situations; preventing or limiting the spread of dangerous substances in case of fires or accidents; informing the public about fire prevention.

**5412 POLICE OFFICERS** maintain law and order, patrolling public areas, enforcing laws and regulations and arresting suspected offenders; patrolling a specific area to maintain public order, responding to emergencies, protecting people and property and enforcing laws and regulations; identifying, pursuing and arresting suspects and perpetrators of criminal acts; directing traffic and assuming authority in the event of accidents; providing emergency assistance to victims of accidents, crimes and natural disasters.

**5413 PRISON GUARDS** watch over and maintain order among inmates of prisons, reformatories or penitentiaries; searching arriving prisoners, putting their valuables in safekeeping, escorting prisoners to cells and locking them in; making periodic inspection tours of cells and inspecting and maintaining the security of locks, windows, doors and gates; supervising prisoners at work and meals, and during recreation periods; observing the conduct and behavior of prisoners to prevent disturbances and escapes; patrolling prison areas to prevent escapes; assisting with the implementation of rehabilitation programmes; escorting prisoners in transit and during temporary leave

**5414 SECURITY GUARDS** patrol premises and checking doors, windows and gates to prevent and detect signs of unauthorized entry; controlling access to establishments, monitoring and authorizing the entrance or departure of employees and visitors, checking identification and issuing security passes; circulating among visitors, patrons or employees to preserve order, protect property from theft or vandalism and enforce the regulations of the establishment; responding to alarms, investigating disturbances and contacting superiors, police or firefighters as appropriate; performing security checks of passengers and luggage at airports; picking up and ensuring the safe delivery of cash and valuables to banks, automated teller machines and retail establishments.

**5419 PROTECTIVE SERVICES WORKERS NOT ELSEWHERE CLASSIFIED** This unit group covers protective services workers not classified elsewhere in Minor Group 541; Protective Services Workers. For instance, the unit group includes lifeguards, crossing guards and animal control officers; patrolling beaches and swimming pools to prevent accidents and to rescue bathers from drowning; monitoring traffic flow to locate safe gaps through which pedestrians can cross streets; responding to citizen complaints concerning stray domestic animals, livestock and wildlife, issuing warnings and citations to owners and impounding lost, homeless and dangerous animals; patrolling an assigned area to enforce parking regulations; directing traffic.

## **6 SKILLED AGRICULTURAL, FORESTRY AND FISHERY WORKERS**

### **61 MARKET ORIENTED SKILLED AGRICULTURAL, FORESTRY AND FISHERY WORKERS**

**6111 FIELD CROP AND VEGETABLE GROWERS** plan, organize and perform farming operations to grow and harvest various types of field crop such as wheat and other cereals, rice, beetroot, sugar cane, groundnuts, tobacco, reed or other field crops, and potatoes, cabbages or other field vegetables, for sale or delivery on a regular basis to wholesale buyers, marketing organizations or at markets; monitoring market activity and conditions, determining types and quantities of crops to be grown, and planning and coordinating production accordingly; preparing soil by hand or machine, and spreading fertilizers and manure; selecting and sowing seeds, and planting seedlings; maintaining crops by cultivating soil, by transplanting, pruning or thinning plants, and by setting up and operating irrigation equipment; controlling weeds, pests and diseases by applying herbicides and pesticides; harvesting crops and destroying diseased or superfluous crops; inspecting, cleaning, grading, packaging, storing and loading crops for sale or delivery to market; tending working animals and maintaining farm buildings, structures, equipment and water supply systems; storing and carrying out some processing of produce.

**6112 TREE AND SHRUB CROP GROWERS** monitoring market activity and conditions, determining types and quantities of crops to be grown, and planning and coordinating production accordingly; preparing soil by hand or machine, and spreading fertilizers and manure; selecting and sowing seeds, and planting seedlings; maintaining crops by cultivating soil, by transplanting, pruning or thinning trees and shrubs, and by setting up and operating irrigation equipment; controlling weeds, pests and diseases by applying herbicides and

pesticides; tending trees or bushes, collecting sap and harvesting crops; inspecting, cleaning, grading, packaging, storing and loading crops for sale or delivery to market; tending working animals and maintaining farm buildings, structures, equipment and water supply systems; string and carrying out some processing of produce; promoting and marketing products, arranging the sale, purchase and transportation of produce and supplies, and maintaining and evaluating records of farm activities and transactions; training and supervising workers in crop production, maintenance duties and health and safety precautions, and hiring and discharging workers and contractors.

**6113 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; monitoring market activity and conditions determining kinds and amounts of vegetables and horticultural and nursery products to be grown, and planning and coordinating production accordingly; preparing land by conditioning soil, leveling ground and installing and operating irrigation and drainage systems; planting trees, hedges, garden plants and grass; pruning and trimming trees, shrubs and hedges, installing plant supports and protection, and rolling, mowing, aerating and edging lawns; constructing features and facilities within gardens, such as paths or paved areas, walls, rockeries, garden beds, ponds and water features, sheds and fences; checking the health of plants and trees, identifying and treating weeds, pests and diseases, and applying mulch and fertilizers.

**6114 MIXED CROP GROWERS** plan, organize and perform farming operations to grow and harvest specific combinations of field crops, field vegetables, trees and shrub crops, and garden, horticultural and nursery products, for sale or delivery to wholesale buyers, marketing organizations or at markets; monitoring market activity and conditions, determining types and quantities of crops to be grown, and planning and coordinating production accordingly; preparing soil by hand or machine, and spreading fertilizers and manure; selecting and sowing seeds, and planting seedlings; maintaining crops by cultivating soil, by transplanting, pruning or thinning crops, trees and shrubs, and by setting up and operating irrigation equipment; growing flowers and vegetables by intensive cultivation; producing saplings, bulbs and seeds; harvesting crops and inspecting, cleaning, grading, packaging, storing and loading products for sale or delivery to market; tending working animals and maintaining farm buildings, structures, equipment and supply systems.

**6121 LIVESTOCK AND DAIRY 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, milk and other dairy products, skins and wool or for use as working, sporting or recreational animals, for sale or delivery to wholesale buyers, marketing organizations or at markets; monitoring market activity and conditions, determining kinds and amounts of stock to produce, and planning and coordinating production accordingly; cultivating pastures and providing and monitoring fodder and water supplies to maintain appropriate nutritional levels and condition of livestock; monitoring and examining animals to detect illness, injury or diseases, and to check physical condition such as rate of weight gain; grooming, marking, clipping, trimming, drenching and/or casting animals, and shearing coats to collect hair or wool; herding livestock to pastures for grazing or to scales, sheds, vehicles or other enclosures; milking animals by hand or using milking machines; mixing feed, additives and medicines in prescribed portions and distributing or hand feeding to animals for consumption performing duties related to livestock reproduction, such as breeding, artificial insemination and helping with animal births.

**6122 POULTRY PRODUCERS** plan, organize and perform farming operations to breed and raise chickens, turkeys, geese, ducks and other poultry to produce meat, eggs and breeding stock for sale or delivery to wholesale buyers, marketing organizations or at markets; monitoring market activity, planning and coordinating production accordingly, and maintaining and evaluating records of farming activities; growing and purchasing feed and other supplies needed to maintain appropriate nutrition levels and condition of poultry; monitoring and examining poultry to detect illness, injury or disease and to check physical condition such as rate of weight gain, and removing weak, ill and dead poultry from flock; mixing feed and feed additives and filling feed and water containers; vaccinating poultry via drinking water, injection or dusting of air; collecting and storing eggs and packaging them for sale or delivery to market; determining sex of chicks and facilitating breeding, artificial insemination and hatching of eggs; renting or investigating in, and maintaining and cleaning, farm buildings, machinery, equipment and structures; slaughtering and dressing poultry for sale or delivery to market; storing and carrying out some processing of produce; arranging the sale, purchasing and transportation of stock, produce and supplies; training and supervising workers in poultry production procedures, maintenance duties and health and safety precautions, and hiring and discharging workers and contractors.

**6123 APIARISTS AND SERI-CULTURISTS** plan, organize and perform operations to breed, raise and tend insects such as honey bees, silk worms and other species to produce honey, beeswax, silk and other products for sale or delivery to wholesale buyers, marketing organizations or at markets; monitoring market activity and conditions, determining kinds and amounts of insect products to produce, and planning and coordinating production accordingly; purchasing insects and growing or purchasing feed and other supplies; breeding, raising and tending insects and collecting their products; renting or investing in, and maintaining and cleaning, buildings, machinery, equipment and structures; storing and carrying out some processing of produce; arranging the sale, purchase and transportation of stock, produce and supplies, and maintaining and evaluating records of farming activities; training and supervising workers in production procedures, maintenance duties and health and safety precautions, and hiring and discharging workers and contractors.

**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 births (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. monitoring market activity and conditions, determining kinds and amounts of products to produce, and planning and coordinating production accordingly; raising, feeding and tending animals; 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.

**6130 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 or delivery to wholesale buyers, marketing organizations or at markets; 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; purchasing seeds, fertilizer and other supplies; performing operations such as land preparation and sowing, planting, cultivating and harvesting crops; producing or buying fodder and other food supplies; breeding, raising and tending animals; killing and skinning, and preparing animals or animal products for markets; renting or investing in, and maintaining and leaning, farm buildings, machinery, equipment and structures; storing and carrying out some processing of produce; 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; training and supervising workers in animal care procedures, maintenance duties and health and safety precautions, and hiring and discharging workers and contractors.

## **62 MARKET-ORIENTED SKILLED FORESTRY, FISHERY AND HUNTING WORKERS**

**6210 FORESTRY AND RELATED WORKERS** assessing sites for reforestation, selecting seedlings and planting trees using manual planting tools and establishing and caring for forest stands; locating trees to be felled and estimating volume of timber; operating chainsaw and other power saws to thin 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, completing 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 subsequent operations; training and supervising other workers in forestry procedures, including forestry labourers and plant operators

**6221 AQUACULTURE WORKERS** breeding, raising and cultivating fish, mussels, oysters and other forms of aquatic life as cash crops or for release into freshwater or saltwater; collecting and recording growth, production and environment data; conducting and supervising stock examinations in order to identify diseases or parasites; monitoring environments to ensure maintenance of optimum conditions for aquatic life; directing and monitoring trapping and spawning of fish, egg incubation and fry rearing, applying knowledge of management and fish culturing techniques; clearing, freezing, icing or salting catch on or offshore, and preparing fish and other products for shipment; maintaining buildings, tanks, machinery, boats and other equipment; delivering or marketing products; renting or investing in buildings, equipment and machinery, and purchasing food and other supplies; supervising and training aquaculture and fish hatchery support workers.

**6222 INLAND AND COASTAL WATERS FISHERY WORKERS** preparing and repairing nets and other fishing gear and equipment; selecting areas for fishing, plotting courses and computing navigational positions using compass, charts and other aids; operating fishing vessels to, from and at fishing grounds; baiting, setting, operating and hauling in fishing gear by hand or using hoisting equipment; gathering various forms of aquatic life from shores and shadow waters; maintaining engine fishing gear and other on-board equipment; keeping records of transactions, fishing activities and weather and sea conditions, and estimating costs and budgets; sorting and storing catch in holds with salt ice; removing catches from fishing equipment, measuring them to ensure compliance with legal size and returning undesirable or illegal catches to the water; directing fishing operations, and supervising fishing crew members.

**6224 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; setting traps to catch mammals, birds or reptiles; killing trapped or free mammals, birds or reptiles with firearms or other weapons; skinning and otherwise treating killed mammals, birds or reptiles to obtain desired products for sale or delivery; delivering or selling trapped live mammals, birds or reptiles; repairing and maintaining equipment

## **63 SUBSISTENCE FARMERS, HUNTERS, FISHERS, TRAPPERS AND GATHERERS**

**6310 SUBSISTENCE CROP FARMERS** grow and harvest field or tree and shrub crops, vegetables and fruit, in order to provide food, shelter and, in some cases, a minimum of cash income for themselves and their households; preparing the soil and sowing, planting, tending and harvesting field crops; growing vegetables, fruit and other tree and shrub crops; fetching water and gathering firewood; storing 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.

**6320 SUBSISTENCE LIVESTOCK FARMERS** cultivating pastures or managing grazing lands, and monitoring feed and water supplies needed to maintain condition of livestock; monitoring and examining animals to detect illness, injury or disease, and to check physical condition; grooming and marking animals and shearing coats to collect hair or wool; herding or leading livestock to pastures, grazing land and water supplies; raising, tending, feeding and milking animals or draining blood from them; breeding animals and helping with animal births; slaughtering and skinning animals and preparing them and their products for consumption or sale; carrying out some processing of animal products; building and maintaining houses and other shelters; making tools, clothes and utensils for use by the household; fetching water and gathering firewood; buying, bartering and selling animals and some products.

**6330 SUBSISTENCE MIXED CROP & LIVESTOCK FARMERS** grow and harvest field or tree and shrub crops, vegetables and fruit, gather wild fruits and 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, in some cases, a minimum of cash income for themselves and their households; preparing the soil and sowing, planting, tending and harvesting field crops; growing vegetables, fruit and other tree and shrub crops; gathering wild fruits and medicinal and other plants; breeding, tending and feeding animals and poultry mainly to obtain meat, eggs, milk, hair, skin or other products; 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.

**6340 SUBSISTENCE, HUNTERS, FISHERS, TRAPPERS AND GATHERERS** gathering wild fruits, roots and medicinal and other plants; hunting or trapping animals mainly to obtain meat, milk, hair, skin or other products; fetching water and gathering firewood; catching fish and gathering other forms of aquatic life; storing or carrying out some processing of their 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.

## **7 CRAFT AND RELATED TRADES WORKERS**

### **71 BUILDING AND RELATED TRADES WORKERS (EXCLUDING ELECTRICIANS)**

**7111 HOUSE BUILDERS** preparing ground for erecting building or other structures; erecting structures to support roofs, and building and covering walls with appropriate materials; fixing rafters to roofs and covering with roofing material; leveling floors to make them smooth and serviceable; maintaining and repairing existing structures; arranging for specialized work such as bricklaying, painting, plumbing and electrical wiring to be done by subcontractors; coordinating and supervising the activities of subcontractors, labourers and other workers.

**7112 BRICKLAYERS AND RELATED WORKERS** 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; laying footpaths, kerbs and pavements; laying bricks or other masonry to build patios, garden walls and other decorative installations.

**7113 STONEMASONS, STONE CUTTERS, SPLITTERS AND CARVERS** driving wedges into quarried stone to break it into slabs or blocks; selecting and grading slabs and blocks of granite, marble and other stone; cutting, shaping and finishing building and monumental stone such as granite or marble using hand tools or hand held power tools; making patterns and marking shapes on stone for subsequent sawing, planning, drilling and other dressing and cutting operations; cutting and carving characters, figures or designs on stone blocks used for monuments or memorials; setting stone in the erection of monuments and memories; repairing and replacing stonework on old buildings, churches and monuments.

**7114 CONCRETE PLACERS, CONCRETE FINISHERS AND RELATED WORKERS** constructing and repairing reinforced concrete floors, walls, tanks, silos and other concrete structures; making shuttering or assembling prefabricated forms for moulding concrete; cement openings in walls or casting for wells; finishing and smoothing surfaces of concrete structures; applying a durable smooth surfacing composed of cement, sand pigment and marble particles to floors, known as a terrazzo finish.

**7115 CARPENTERS AND JOINERS** making, altering and repairing structural and other woodwork at a workbench or on a construction site; constructing, erecting and installing heavy framed wooden structures on building sites; fitting, assembling and altering internal and external fixtures of buildings, such as walls, doors, door and window frames, facings and paneling; making, repairing and fitting scenic equipment for theatrical performances and motion picture or television productions; constructing, assembling, altering and repairing wooden fixtures and fittings in train coaches, aircraft, ships, boats, floats and other vehicles.

**7119 BUILDING FRAME AND RELATED TRADES WORKERS NOT ELSEWHERE CLASSIFIED** This unit group covers building frames and related trades workers not classified elsewhere in Minor Group 711, Building Frame and Related Trades Workers. For instance, the unit group includes steeplejacks, scaffolders and demolition workers; climbing and performing miscellaneous construction and building maintenance work on tall structures such as towers, chimneys and spires; erecting temporary metal or wooden scaffolding on building sites; demolishing buildings and other structures.

**7121 ROOFERS** studying drawings, specifications and construction sites to determine materials required; covering roof frameworks with slate and prefabricated tiles to cover pitched roofs; laying a waterproof shield and fixing metallic or synthetic materials to a buildings frame; sizing and cutting roofing materials to fit around edges, corners and protuberances such as chimneys; using natural materials such as thatching to provide roof coverings; creating temporary structures such as scaffolding and ladders.

**7122 FLOOR LAYERS AND TILE SETTERS** preparing floor areas for covering with a variety of materials; assembling carpet, tiles or other materials and laying them on floors according to design and other specifications; preparing wall areas for covering with tiles or other materials for decorative or other purposes such as acoustic insulation; setting tiles and constructing and laying mosaic panels to walls, floors and other surfaces.

**7123 PLASTERERS** apply one or more coats of plaster to interior walls and ceilings of buildings to produce a finished surface; measuring, marking and installing ornament plaster panels, and casting and trimming ornamental plaster cornices; measuring, marking and cutting plasterboard, lifting and positioning panels and securing them to walls, ceiling and battens; covering joints and nail holes with wet plaster and sealing compounds, and smoothing them using wet brushes and sandpaper; applying protective and decorative coverings of cement, plaster and similar materials to exterior building surfaces; making and installing decorative plaster fixtures of fibrous plaster; applying and finishing acoustic, insulating and fireproofing materials bonded with plaster, plastic cement and similar materials.

**7124 INSULATION WORKERS** apply and repair insulating materials to buildings, boilers, pipes or refrigeration and air conditioning equipment; cutting insulation material by size and shape; applying slabs and sheets of insulating or sound absorbing materials to walls, floors and ceilings of buildings; blowing and packing insulating or sound absorbing materials into cavities between walls, floors and ceilings of buildings with power driven machines; examining plans, specifications and work sites to determine the type, quality and quantity of insulation material required; applying insulating materials to exposed surfaces of equipment such as boilers, pipes and tanks; insulating refrigeration and air conditioning equipment.

**7125 GLAZIERS** measure, cut, finish, fit and install flat glass and mirrors; selecting the type of glass to be used, cutting to right size and shape and installing in windows, doors, showers and partitions of building; installing glass and mirrors in skylights, display cases, interior walls and ceilings; installing or replacing windscreens in vehicles or boats; creating decorative glass features such as glass walls, staircases, balustrades and stained glass widows

**7126 PLUMBERS AND PIPE FITTERS** examining blueprints, drawings and specifications to determine the layout of plumbing and ventilation systems and materials required; measuring, cutting, threading, bending, jointing, assembling, installing, maintaining and repairing pipes, fitting and fixtures of drainage, heating, ventilation, water supply and sewage systems; installing gas appliances, dishwashers and water heaters, sinks and toilets using hand and power tools; laying clay, concrete or cast-iron pipes in ditches to form sewers, drains or water mains, or for other purposes; inspecting, examining and testing installed systems and pipes, using pressure gauge, hydrostatic testing, observation or other methods.

**7127 AIR CONDITIONING AND REFRIGERATION MECHANICS** interpreting blueprints, drawings and other specifications; assembling, installing and repairing components such as compressors, motors, condensers, evaporators, switches and gauges for air conditioning and refrigeration systems; connecting piping and equipment by bolting, riveting, welding or brazing; testing systems, diagnosing faults and performing routine maintenance or servicing

**7131 PAINTERS AND RELATED WORKERS** cleaning and preparing walls and other surfaces of buildings for painting or wallpapering; selecting and preparing paints to required colours by mixing pigments and additives; applying or spraying paint, varnish and similar materials to surfaces, fixtures and fitting of buildings; measuring and hanging wallpaper or other fabrics on interior walls and ceilings; applying paints, varnishes and stains to surfaces using brushes, rollers and sprays.

**7132 SPRAY PAINTERS AND VANISHERS** preparing surfaces to be coated using a variety of methods to remove grease, dirt and rust; painting cars, buses, trucks and other vehicles, and applying varnish and other protective coatings; applying paint as well as protective coatings of enamel or varnish on metal, wooden and other manufactured products, usually with a hand spraying device.

**7133 BUILDING STRUCTURE CLEANERS** 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; removing soot from flues, chimneys and connecting pipes; removing asbestos, mould and fire damaged surfaces from buildings.

## **72 METAL, MACHINERY AND RELATED TRADES WORKERS**

**7211 METAL MOULDERS AND CORE MAKERS** 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; making cores for use in metal molds; cleaning and smoothing molds and core boxes, and repairing surface imperfections; moving and posing work pieces such as mold sections, patterns and bottom boards, using cranes, or signaling others to move work pieces; positioning patterns inside mold sections and clamping sections together; cutting spouts, runners holes and sprue holes into molds; lifting upper mold sections from lower sections and removing molded patterns.

**7212 WELDERS AND FLAME-CUTTERS** welding metal parts using gas flame, or an electric arc, thermite compound or other methods; operating resistance welding machines; using blowtorches to make and repair lead lining, pipes, floors and other lead fixtures brazing metal parts together; cutting metal pieces using gas flame or an electric arc; joining metal parts by hand soldering monitoring the fitting, burning and welding processes to avoid overheating of parts or warping, shrinking, distortion or expansion of material; examining work pieces for defects and measuring work pieces with straight edges or templates to ensure conformity with specifications.

**7213 SHEET METAL WORKERS** marking sheet metal for cutting and shaping; making and repairing household utensils and other articles in tin, copper and light alloys, or ornamental articles and fittings; making and repairing boilers, tanks, vats and similar containers; installing and repairing sheet metal parts of vehicles and aircraft; converting blueprints into shop drawings to be followed in the construction and assembly of sheet metal products; determining project requirements, including scope, assembly sequences and required methods and materials, according to blue prints, drawings and written or verbal instructions; inspecting product quality and installation to ensure conformity with specifications.

**7214 STRUCTURAL METAL PREPARERS AND ERECTORS** marking metal framework as a guide when drilling, cutting and shaping metal stock for use in buildings, ships and other structures; drilling, cutting and shaping structural steel in a workshop; erecting steel framework for buildings, bridges and other constructions; assembling and erecting the framework and other metal parts of ships' structures; shaping and fitting structural steel plates of ships under construction or repair; riveting structural metal members by hand, machine or pneumatic riveter.

**7215 RIGGERS AND CABLE SPLICERS** estimate the size, shape and weight of objects to be moved and deciding on the type of equipment to move them; installing and repairing cables, ropes, wires, pulleys and other tackle; joining, repairing and fitting attachments to wires, ropes and cables; working as member of a crew erecting and repairing derricks for drilling water, gas and oil wells; lifting and mounting scenery, lighting and other equipment in theatres and on film sets; installing and maintaining communication towers, aerial cableways, funicular railways, ski lifts and similar infrastructure.

**7221 BLACKSMITHS, HAMMERSMITH AND FORGING PRESS WORKERS** heating metal in forge furnaces and manufacturing and repairing articles by drawing, bending, cutting, hammering metal on an anvil, punching, shearing, joining and hardening or tempering; shaping heated metal into forgings on power hammers equipped with open dies; operating closed die drop hammers to forge metal articles; operating a power press machine equipped with closed dies to forge metal articles; reading work orders or blueprints to determine specified tolerances and sequences of operations for machine setup; measuring and inspecting machine parts to ensure conformity with product specifications

**7222 TOOL MAKERS AND RELATED WORKERS** read and interpreting engineering drawings and specifications of tools, dies, prototypes or models; preparing templates and sketches, and determining work processes; visualizing and computing dimensions, sizes, shapes and tolerances of assemblies, based on specifications; positioning, securing and measuring metal stock or castings to lay out for machining; setting up, operating and maintaining conventional and computer numerically controlled machine tools to cut, turn, mill, plane, drill, bore, grind or otherwise shape work pieces to prescribed dimensions and finish; fitting and assembling parts to make and repair jigs, fixtures and gauges; repairing and modifying sports guns and other small arms; making, fitting, assembling, repairs and installing lock parks and locks; making and repairing metal patterns for preparation of foundry moulds; laying out lines and reference points on metal stock to guide other workers who cut, turn, mill, grind or otherwise shape metal; verifying dimensions, alignments and clearances of finished parts for conformity with specifications, using precision measuring instruments and testing completed items for proper operation.

**7223 METAL WORKING MACHINE TOOL SETTERS AND OPERATORS** setting one or more types of machine tool for production of metal articles in standardized series; operating and monitoring metal working machines such as lathes and milling, planning, boring, drilling, grinding or honing machines, including multipurpose numerically controlled metal working machines; performing similar tasks when machining plastics and other metal substitutes; observing machine operations to detect work piece defects or machine malfunctions, and adjusting machines as necessary; inspecting work pieces for defects, and measuring work pieces to determine accuracy of machine operation, using rules, templates or other measuring instruments; changing worn machine accessories such as cutting tools and brushes, using hand tools

**7224 METAL POLISHERS, WHEEL GRINDERS AND TOOL SHARPENERS** operate fixed or portable buffing and polishing machines; sharpening cutting tools and instruments using grinding wheels or mechanically operating grinding machines; repairing, adjusting and sharpening saw blades and metal teeth of cylinders in textile carding machines; dressing grinding wheels according to specifications; monitoring machine operations to determine whether adjustments are necessary, and stopping machines when problems occur; inspecting, feeling and measuring work pieces to ensure that surfaces and dimensions meet specifications; selecting and mounting grinding wheels on machines according to specifications, using hand tools and applying knowledge of abrasives and grinding procedures.

**7231 MOTOR VEHICLE MECHANICS AND REPAIRERS** determine and diagnosing faults in engines and parts; fitting, examining, testing and servicing motor vehicle and motorcycle engines; replacing engines components or complete engines; fitting, examining, adjusting, dismantling, rebuilding and replacing defective parts of motor vehicles; installing or adjusting motors and brakes, and adjusting steering or other parts of motor vehicles installing, adjusting, servicing and replacing mechatronics components of motor vehicles; 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; reassembling engines and parts after being required.

**7232 AIRCRAFT ENGINE MECHANICS AND REPAIRERS** fitting, examining, testing and servicing aircraft engines; replacing engine components or complete engines; examining and inspecting airframes aircraft components, inspecting landing gear, hydraulic systems and deicers to detect wear, cracks, breaks, leaks or other problems; maintaining, repairing, overhauling, modifying and testing aircraft structural, mechanical and hydraulic systems; reading and interpreting manuals, service bulletins and other specifications to determine the feasibility and method of repairing or replacing malfunctioning or damaged components; 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; inspecting completed work to certify that maintenance meets standards and the aircraft is ready for operation.

**7233 AGRICULTURAL AND INDUSTRIAL MACHINERY MECHANICS AND REPAIRERS** fitting installing, examining, servicing and repairing engines, machinery and mechanical equipment; oiling and greasing stationary engines and machinery; inspecting and testing new machinery and mechanical equipment for conformity with standards and specifications; disassembling machinery and equipment to remove parts and make repairs; examining parts for defects such as breakage and excessive wear; operating newly repaired machinery and equipment to verify the adequacy of repairs; recording repairs and maintenance performed

**7234 BICYCLE AND RELATED REPAIRERS** examining, servicing and repairing bicycles and other non-motorized transport equipment; cleaning and lubricating bearings and other moving parts; replacing and repairing components and accessories such as brakes, gears, driving chain mechanisms, wheels and handlebars; changing tyres and controlling air pressure; spray-painting frames; assembling new bicycles, wheelchairs and similar non-motorized equipment.

## **73 HANDICRAFT AND PRINTING WORKERS**

**7311 PRECISION-INSTRUMENT MAKERS AND REPAIRERS** make, calibrate, repair, maintain, adjust and install mechanical watches and clocks, and nautical, meteorological, optical and other precision instruments and equipment, and set them for correct performance; cleaning, rinsing and drying timepiece parts, using solutions and ultrasonic or mechanical watch-cleaning machines; testing timepiece accuracy and performance, using meters and other electronic instruments; testing accuracy of meters, gauges, indicators or other recording or controlling instruments to locate defective components and for conformity with standards; calibrating instruments or scales, using hand tools and computers or electronic devices; inspecting components, connections and drive mechanisms to detect defects.

**7312 MUSICAL INSTRUMENT MAKERS AND TUNERS** fabricating and assembling musical instruments and instrument parts of wood, ebonite, metal, leather and other materials; repairing or replacing musical instrument parts and components such as strings, bridges, felts and keys, using hand and power tools; playing and inspecting instruments to evaluate their sound quality and to locate any defects; adjusting string tensions to achieve proper tone or pitch of stringed instruments; adjusting lips, reeds or toe holes of organ pipes, using hand tools, to regulate airflow and loudness of sound; tuning and servicing pipe organs by adjusting pitch of organ pipes to conform with pitch of the tuning fork and adjusting pitch of other pipes with reference to pitch of tuned pipes; installing new drumheads in percussion instruments.

**7313 JEWELLERY AND PRECIOUS METAL WORKERS (INC. SORTING, CUTTING AND POLISHING OF DIAMONDS)**, casting jewellery and other non-ferrous metal articles by hand; creating new jewellery designs and modifying existing designs, using computers as necessary; cutting designs in moulds or other materials to be used as models in the fabrication of metal and jewellery products; altering existing jewellery mountings in order to reposition jewels or to adjust mountings; repairing, reshaping and restyling old jewellery or precious metal ware following designs or instructions; making complete jewellery articles such as rings, necklaces, bangles, brooches and bracelets from materials such as gold, silver, platinum and precious or semi-precious stones; examining gem surfaces and internal structures, using polariscopes, refract meters, microscopes and other optical instruments to differentiate between stones, to identify rare specimens, or to detect flaws, defects or peculiarities affecting gem values.

**7314 POTTERS AND RELATED WORKERS** making articles of pottery and porcelain; making clay or plaster-of-pairs moulds; reading technical drawings to know the customer's requirements; forming articles on the potters' wheel by pressing thumbs into centres of revolving clay to form hollows, and pressing on the inside and outside of emergency clay cylinders with hands and fingers, gradually raising and shaping clay to desired forms and sizes; adjusting wheel speeds according to the feel of the clay as pieces enlarge and walls become thinner; operating jigger machines to form ceramic ware such as bowls, cups, plates and saucers; adjusting and setting controls of pug mills that mix, extrude, cut and deposit clay charges in or over moulds as specified; smoothing surfaces of finished pieces, using rubber scrapers and wet sponges.

**7315 GLASS MAKERS, CUTTERS, GRINDERS AND FINISHERS** heat glass to pliable stage using gas flames or ovens, and rotating glass to heat it uniformly; blowing and bending glass tubing into specified shapes to form scientific apparatus such as flasks, retorts and pipettes; grinding and polishing glass objects or parts to correct defects or to prepare surfaces for further finishing and smoothing and polishing rough edges, using belt sanders or polishing wheels; examining glass stock and finishing products and marking or discarding items with defects such as spots, stains, scars, snags, chips, scratches or unacceptable shapes or finishes; reading work orders to determine dimensions, cutting locations and quantities to cut; observing gauges, computers printouts and video monitors to verify specified processing conditions and make adjustments as necessary; positioning patterns or drawings on glass, measuring dimensions, and marking cutting lines, using glass cutting tools and cutting glass along marked outlines or around pattern; setting up, operating and adjusting computerized or robotic glass cutting equipment.

**7316 SIGN-WRITERS, DECORATIVE PAINTERS, ENGRAVERS AND ETCHERS** decorate articles made of wood, metal, textiles, glass, ceramics and other materials. They plan, layout and paint letters, figures, monograms and designs to make signs and engrave and etch ornamental and floral designs on glass and other articles; laying out and painting in one or more languages letters, figures, monograms and designs to make signs; sketching or tracing designs or letters onto work pieces or pattern materials to prepare patterns or stencils; designing patterns or lettering to paint work pieces such as signs, glassware, pottery or zinc plates; using software and routing equipment to produce three-dimensional carved images for application onto larger signage as well as engraved and inlaid signs; designing and producing normal flat cut lettering, or lettering that is shadowed with applied vinyl, or lettering that is ready cut for application; writing, painting or printing signs or show cards used for display or other purposes; cutting out letters and signs for display purposes from wallboard or cardboard, by hand or machines such as electrically powered jigsaws or bandsaws.

**7317 HANDICRAFT WORKERS IN WOOD, BASKETRY AND RELATED MATERIALS** apply traditional techniques such as seasoning or impregnation to prepare wood, straw, rattan reeds, clay, shells and other materials, and carve, moulds, 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 such as bristles, nylon, fibre, bass, whisker and wire to make wicker furniture, brushes and brooms, and to weave various kinds of baskets; painting freehand decorative designs on glass and pottery or porcelain ware; 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; carving, assembling, weaving and painting various decorative articles such as statutes and other sculptures, chess pieces, jewellery and similar objects; making wicker furniture from peeled and softened rattan, reeds, rushes, willow branches and similar materials.

**7318 HANDICRAFT WORKERS IN TEXTILE, LEATHER AND RELATED MATERIALS** apply traditional techniques and related materials apply traditional techniques and patterns to produce woven fabrics, knitted, embroidered, woven and other garments and articles for household use, as well as traditional footwear, handbags, belts and other accessories; spinning and dyeing with natural dyestuffs, wool, cotton and other fibres; lace making, and weaving, knitting or embroidering various garments and articles for household use; preparing and dyeing hides with natural dyestuffs and making traditional footwear or handbags, belts and other accessories; spinning and winding yarn by hand; drawing warp threads into looms by hand; weaving plain or figured cloth, tapestry, lace, carpets or other fabrics on hand looms; making carpets by using a knotting technique; knitting garments or by hand.

**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

**7321 PRE-PRESS TECHNICIANS** operating graphic cameras and other photographic equipment to reproduce camera-ready copy onto films, plates and digital output devices; using computer applications to generate images, text, layouts and impositions for print and other visual media displays; operating plate-making equipment to reproduce images from film to printing plates, digital output devices and presses; operating computer screen-based equipment for scanning, colour separation, colour 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; carrying out digital and chemical proofing from digital systems, and negative and positive films; evaluating printed proofs, checking and correcting them for quality; preparing and exposing carbon tissue for laying on cylinders by transfer method, and developing images.

**7322 PRINTERS** setting, adjusting and monitoring substrate feed mechanisms, delivery mechanisms, inking systems and other printing machine functions; mixing ink and solvents to standard, and regulating paper and ink supply during print runs; monitoring, evaluating and determining press to check print quality standards against proofs and detect malfunctions; producing a variety of printed products using digital, relief, lithographic, flexographic and gravure printing presses, and inline finishing systems; preparing plates, blankets and impression cylinders on small offset lithographic printing presses

**7323 PRINT FINISHING AND BINDING WORKERS** setting up and supervising the operation of automatic binding and finishing equipment; binding full, half and limp-bound books, and repairing bindings; folding, collating and sewing signatures by machine and hand; operating paper guillotines for pre-press and post-press paper cutting and trimming, and programming electronically operated units; operating systems to insert printed material into newspapers, magazines and envelopes; embellishing printed products automatically and manually; operating photographic and electronic reproduction devices.

## **74 ELECTRICAL AND ELECTRONICS TRADES WORKERS**

**7411 BUILDING AND RELATED ELECTRICIANS** installing, maintaining and repairing electrical wiring systems and related equipment in various buildings such as schools, hospitals, commercial establishments, residential buildings and other structures; examining blueprints, wiring diagrams and specifications to determine sequences and methods of operation; planning layout and installation of electrical wiring, equipment and fixtures, based on job specifications and relevant, equipment and components to identify hazards, defects and the need for adjustment or repair; selecting, cutting and connecting wire and cable to terminals and connectors; measuring and laying out installation reference points; positioning and installing electrical switchboards.

**7412 ELECTRICAL MECHANICS AND FITTERS** 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; fitting, adjusting and repairing electrical parts in domestic appliances, industrial machines and other appliances; inspecting and testing manufactured electrical products; installing, testing, connecting, commissioning, maintaining and modifying electrical equipment, wiring and control systems; designing, installing, maintaining, servicing and repairing electric and hydraulic passenger and freight lifts, escalators, moving walkways and other lift equipment; connecting electrical systems to the power supply; replacing and repairing defective parts.

**7413 ELECTRICAL LINE INSTALLERS AND REPAIRERS** installing and repairing overhead and underground electrical power and electrical traction lines; making joins in overhead and underground cables; adhering to safety practices and procedures, such as checking equipment regularly and erecting barriers around work areas; opening switches or attaching grounding devices to remove electrical hazards from disturbed or fallen lines or to facilitate repairs; climbing poles or using truck-mounted buckets to access equipment; identifying defective sectionalizing devices, circuit breaks, fuses, voltage regulators, transformers, switches, relays or wiring, using wiring diagrams and electrical-testing instruments.

**7421 ELECTRONICS MECHANICS AND SERVICERS** examining and testing machines, instruments, components, control systems and other electronic equipment to identify faults; adjusting, repairing and replacing worn and defective parts and wiring, and maintaining machines, equipment and instruments; reassembling, test operating and adjusting equipment; installing electronic instruments and control systems; coordinating work with that of engineers, technicians and other maintenance personnel; interpreting test data to diagnose malfunctions and systemic performance problems; installing, adjusting, repairing or replacing electrical and electronic components, assemblies and systems, using hand tools, power tools or soldering irons; connecting components to assemblies such as radio systems, instruments, magnetos, inverters and in-flight refuelling systems.

**7422 INFORMATION AND COMMUNICATIONS TECHNOLOGY INSTALLERS AND SERVICERS** maintaining, troubleshooting, testing and repairing computers, data transmission equipment and computer peripherals; fitting and adjusting computer hardware; 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 and repairing cabling for computer, radio, telephone and television transmission; joining telecommunications and data cables, and sealing sheaths; installing, maintaining and repairing antennae used in communications.

## **75 FOOD PROCESSING, WOODWORKING, GARMENT AND OTHER CRAFT AND RELATED TRADES WORKERS**

**7511 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; boning, cutting and dressing meat and fish for sale or further processing; preparing ingredients and making sausages and similar products using chopping, mixing and shaping machines; operating smokehouses or ovens to smoke meat, fish and other foodstuffs; cooking or in other ways preparing meat, fish and related food items for sale; selling meat or fish to customers, including wrapping, weighing and labelling products, and receiving payment.

**7512 BAKERS, PASTRY COOKS AND CONFECTIONERY MAKERS** making bread, cakes, biscuits, pastries, pies and other flour products; making handmade confectionery from mixtures of sugar, chocolate and other ingredients, using hand tools and some machines; combining measured ingredients in bowls of mixing, blending or cooking machinery; checking the quality of raw materials to ensure that standards and specifications are met; applying glazes, icings or other toppings to baked goods, using spatulas or brushes; checking the cleanliness of equipment and operation of premises before production runs to ensure compliance with occupational health and safety regulations.

**7513 DAIRY PRODUCTS MAKERS** boiling or pasteurizing milk to achieve specified butter fat content; separating cream from milk and churning cream into butter; dumping measured amounts of starter and other ingredients into milk; curdling milk, heating curd until it reaches desired firmness, draining curd and placing cheese into moulds to press it into shape; salting cheese and piercing or smearing cheese with cultured wash to develop mould growth; placing and turning cheese blocks on shelves to cure cheese; monitoring product quality before packaging by inspecting, taking samples and adjusting treatment conditions when necessary.

**7514 FRUITS AND VEGETABLES PRESERVERS** process or preserve fruit, nuts and related foods in various ways including cooking, drying and salting, or juice or oil extraction; extracting juices from various fruits; extracting oils bearing seeds, nuts or fruits; cooking, salting or drying fruit, vegetables and related foods; mixing and adding ingredients such as pectin, sugar, spices and vinegar to assist preservation and enhance texture, appearance and flavour; transferring preserved foods to sterile jars, bottles or other containers.

**7515 FOOD AND BEVERAGE MAKERS, TASTERS AND GRADERS** inspecting, testing, tasting and smelling agricultural products, food and beverages at various stages of processing; determining quality, acceptability to consumer tastes and approximate value of products, and grading them into appropriate classes; discarding inferior products; recording the grade and/or identification numbers on tags and receiving or sales sheets; weighing and measuring products.

**7516 TOBACCO PREPARERS AND TOBACCO PRODUCTS MAKERS** prepare tobacco leaves and make various tobacco products; grading cured tobacco leaves by type, quality and locality where grown; mixing tobacco leaves according to formula to obtain a blend of distinct flavour; tending vacuum containers which moisten tobacco for further processing; removing midribs and stalks from tobacco leaves and shredding tobacco; making cigars, cigarettes, snuff and other tobacco products by hand or with simple machines.

**7521 WOOD TREATERS** operate and tending kilns, treating tanks and other equipment to dry lumber, prepare and season wood and other wood products, and to impregnate wood products with preservatives; monitoring equipment operation, gauges and panel lights in order to detect deviations from standards and to ensure that processes are operating according to specifications; operating valves to admit treating solution into treatment vessels, maintain specified heat, vacuum and hydraulic pressure and levels of solution during each phase of the treatment cycle; activating vacuum and hydraulic pressure pumps that remove air and steam from retorts and force treating solution into pores of wood to accelerate the treatment processes; assisting in maintaining processing equipment and machines as required.

**7522 CABINET MAKERS AND RELATED TRADES WORKERS** 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 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 or applying veneer and carving designs.

**7523 WOODWORKING MACHINE TOOL SETTERS AND OPERATORS** set up, operate and monitor automatic or semi-automatic woodworking machines such as precision sawing, shaping, planing, boring, turning and woodcarving machines to fabricate or repair wooden parts for furniture, fixtures and other wooden products; operating preset special purpose wood working machines to fabricate wooden products such as coat hangers, mop handles, clothespins and other products; selecting knives, saws, blades, cutter heads, cams, bits or belts according to work piece machine functions and product specifications; installing and adjusting blades, cutter heads, boring bits and sanding belts, and using hand tools and rules; setting and adjusting various kinds of wood working machines for operation by others; reading and interpreting specifications or following verbal instructions.

**7531 TAILORS, DRESSMAKERS, FURRIERS AND HATTERS** fabricate, fit, alter and repair tailored or handmade 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 customers' and clothing manufacturer's specifications; selecting textile fabrics, leather or fur pelts, matching the desired size, colour, texture and quality of the garment, cutting to shape them to garment pattern and arranging them on the pattern according to the design of the garment; making garment style changes, such as tapering trouser legs or narrowing lapels, and adding or removing padding; selecting and modifying commercial patterns to customers' and clothing manufacturers' specifications and fit; fitting, altering and repairing tailored clothing, dresses, coats and other made to measure garments according to customers' requests; making and caring for costumes used in theatrical, television and motion picture productions; 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.

**7532 GARMENT AND RELATED PATTERNMAKERS AND CUTTERS** create precision master patterns for the production of garments and other textile, leather or fur products. They mark, cut, shape and trim textiles, light leather and other materials according to blueprints or specifications in the manufacture of garments, hats and caps, gloves and miscellaneous products. They mark, cut, shape and trim textiles, light leather and other materials according to blueprints or specifications in the manufacture of garments, hats and caps, gloves and miscellaneous products; creating the blueprint or pattern pieces for a particular apparel design with the aid of a computer; calculating dimensions of patterns according to sizes, considering stretching of material; 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; positioning templates or measuring materials to locate specified points of cuts or to obtain maximum yields, and marking fabric accordingly.

**7533 SEWING, EMBROIDERY AND RELATED TRADES 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; repairing defective or damaged portions of cloths or garments by hand, using matching thread and needle; removing stitches from garments to be altered, using rippers or razor blades; selecting thread according to specifications or colour of parts, or dyeing thread to match colour and shade of cloth to be darned; patching holes, sewing tears and ripped seams, or darning defects in items, using needle and thread; pulling knots to the wrong sides of garments, using hooks; trimming ends with scissors to make mended portions look uniform with the pattern of cloth; sewing ornamental designs by hand over stamped, printed or stencilled patterns on fabric, using needle and coloured thread; embroidering ornamental designs on cloth by hand or machine, using needle and coloured thread.

**7534 UPHOLSTERERS AND RELATED TRADES 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; discuss upholstery fabric, colour and style for upholstering furniture or other items; making upholstery patterns from sketches, customer descriptions or blueprints; laying out, measuring and cutting upholstery materials following patterns, templates, sketches or design specifications; installing, arranging and securing springs, padding and covering material to furniture frames; sewing upholstery materials by hand to seam cushions and joining sections of covering materials; sewing rips or tears in material, or creating tufting, using needle and thread; tacking, gluing or sewing ornamental trims, buckles, braids, buttons and other accessories to covers or frames on upholstered items.

**7535 PELT DRESSERS, TANNERS AND FELL-MONGERS** 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; sorting and grading pelts, hides and skins according to colour, shading, size and density; scraping particles of flesh, fat or protective tissue from skins or pelts to clean and soften them; removing long, coarse hair from pelts and trimming underlying hair to even length; tanning and dressing pelts to improve lustre and beauty or to restore the natural appearance of pelts.

**7536 SHOEMAKERS AND RELATED TRADES 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; checking the texture, colour and strength of leather to ensure that it is adequate for a particular purpose; removing and examining shoes, shoe parts and designs to verify conformity with specifications, such as proper embedding of stitches in channels.

**7541 UNDER WATER DIVERS** work under the surface of water, with or without the aid of underwater breathing apparatus, to inspect, install, repair and remove equipment and structures, conduct tests or experiments, rig explosives, photograph structures or marine life, collect various forms of aquatic life for commercial or research purposes, and find and recover missing items and persons; taking safety precautions, such as monitoring dive lengths and depths, and registering with authorities before diving expeditions begin; checking and maintaining diving equipment such as helmets, masks, air tanks, diving suits, harnesses and gauges; descending into water with the aid of diver helpers, using scuba gear or diving suits; working under water to lay and repair bridges, piers and harbor-wall foundations; inspecting for suspected damage and making minor repairs to ships' hulls and underwater installations; reporting on the condition of wrecked ships; performing various underwater tasks connected with salvage work or recovering dead bodies; gathering shellfish, sponges and other aquatic life forms.

**7542 SHOT FIRERS AND BLASTERS** ensuring that workplace safety and explosives handling, storage and transport procedures and regulations are followed; planning and giving instructions for the layout, depth and diameter of blast holes; checking depth and cleanliness of blast holes; determining quantity and type of explosives to be used; loading explosives into blast holes; assembling, or directing other workers to assemble, primer charges using detonators and explosive cartridges, and attaching electrical wires, fuses and detonating cords to primers; connecting wires, fuses and detonator cords into series, testing electrical circuits and repairing malfunctions, and connecting series to blasting machines; covering charges, filling blast holes with rock dust, sand and other materials, and tamping material to compact charges.

**7543 PRODUCT GRADERS AND TESTERS** inspecting and testing products, parts and materials for conformity with specifications and standards; grading and classifying natural textile fibres for spinning and winding; discarding or rejecting products, materials and equipment not meeting specifications; analysing and interpreting blueprints, data, manuals and other materials to determine specifications, inspection and testing procedures; notifying supervisors and other personnel of production problems, and assisting in identifying and correcting these problems; recording inspection or test data such as weights, temperatures, grades or moisture content, and quantities inspected or graded.

**7544 FUMIGATORS AND OTHER PEST AND WEED CONTROLLERS** operate and monitor equipment for spraying pests and weeds; mixing chemicals according to instructions; covering areas to specified depths with pesticides, applying knowledge of weather conditions, droplet sizes, elevation to distance ratios, and obstructions; spraying or releasing chemical solutions or toxic gases, and setting traps to kill pests and vermin, such as mice, termites and roaches; lifting, pushing and swinging nozzles, hoses and tubes in order to direct spray over designated areas; filling sprayers tanks with water and chemicals; cleaning and servicing machinery to ensure operating efficiency.

**7549 CRAFT AND RELATED TRADES WORKERS NOT ELSEWHERE CLASSIFIED** includes craft and trade occupations not classified elsewhere in Major Group 7: Crafts and related Trade workers. This includes those who heat, mould and press optical glass to make lens blanks; grinding and polishing lens blanks.

### 81 STATIONARY PLANT AND MACHINE OPERATORS

**8111 MINERS AND QUARRIERS** positioning, operating and monitoring the performance of a variety of underground and surface mining equipment including continuous mining, cutting and channeling plant; setting up and operating drilling equipment in underground and surface mines and quarries; operating machinery and using hand or power tools to remove loosened rock, ore, coal and other deposits; preparing, fitting and installing supports in underground workings including rock bolts; operating machinery to open new shafts, drives, air vents and rises; operating auxiliary plant such as pumps to expel air, water and mud; performing minor maintenance and repairs and lubricating and cleaning plant, machines and tools.

**8112 MINERAL AND STONE PROCESSING PLANT OPERATORS** 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; positioning blocks and slabs of stone onto machines for sawing, cutting and further working; monitoring and maintaining the flow of unprocessed rocks, minerals and stones from conveyors into machines; operating washing, separating, leaching, precipitating, filtering, extracting and combining equipment to remove waste material and recover minerals; combining mineral ores with solvents to facilitate further processing; separating metal and mineral concentrates from ore and alluvial deposits by thickening, flotation, gravity separation, filtration, or magnetic and electrostatic separation; observing meters, gauges and control panels, adjusting valves and controls to ensure the safe and efficient operation of equipment, detecting malfunctions and assisting with plant and machinery maintenance and repair; examining processed materials visually or with hands to ensure compliance with established standards and job specifications, and collecting samples for testing in laboratories.

**8113 WELL DRILLERS AND BORERS** dismantling, moving and assembling drilling rigs and auxiliary equipment; assembling and dismantling pipes, casings and drill heads, and replacing dysfunctional equipment; operating controls to lower and raise drill pipes and castings in and out of wells, regulate pressure in the well and control the speed of tools; preparing drilling fluid and checking the operation of pumps to ensure adequate circulation of fluid in drill pipes and wells; monitoring gauges and other indicators, listening to equipment to detect malfunctions and unusual well conditions, and determining the need to change drilling or equipment.

**8114 CEMENT, STONE, GLASS, CERAMIC AND OTHER MINERAL PRODUCTS MACHINE OPERATORS** operating extrusion, molding, mixing, pumping, compacting, grinding and cutting machinery to manufacture and finish precast concrete and stone products; operating plant to produce cement, lime and clinker, including loading and unloading ingredients and operating continuous feed equipment such as pumps and conveyors; operating plant and machines which weigh and mix sand, gravel, cement, water and other ingredients to make concrete; operating plant and machinery which assemble and fill molds with concrete and artificial stone mixtures, remove castings from molds and finish surfaces of precast products; cutting, grinding, drilling, sandblasting and polishing concrete products and stone blocks, slabs and products to the specifications for the job; checking production plans and specifications to determine and select materials, ingredients, procedures, components, settings and adjustments for extrusion, molding, mixing and compacting machines; monitoring plant and machines during operation by observing instruments such as temperature and pressure gauges, adjusting controls and reporting malfunctions as necessary.

**8121 METAL PROCESSING PLANT OPERATORS** 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; operating single function machinery to grind, separate, filter, mix, treat, cast, roll, refine or otherwise process metals and mineral ores; observing gauges, meters, computer printouts, video monitors and products to ensure the correct operation of machines and verify specified processing conditions; adjusting equipment, valves, pumps, controls and process equipment; controlling the preparation, measuring and feeding of raw materials and processing agents into the plant.

**8122 METAL FINISHING PLANT OPERATORS** operating and monitoring equipment which cleans metal articles in preparation for electroplating, galvanizing, enameling or similar processes; operating and monitoring electroplating equipment; operating and monitoring hot dip equipment used to coat iron and steel products; operating and monitoring machines which automatically coat wire with non-ferrous metal; operating and monitoring equipment used to spray molten metal or other substances onto metal products to provide a protective or decorative coating or to build up worn or damaged surfaces; operating and monitoring equipment used to impart a rust-resistant finish to metal articles by treating them with chemicals and heating them; checking proper thickness of plating using micrometers, calipers or other devices, recording data and writing production logs.

**8131 CHEMICAL PRODUCTS PLANT AND MACHINE OPERATORS** set up, starting, controlling, adjusting and stopping machines and plant; monitoring reaction processes and transfers of products in conformity with safety procedures; monitoring meters, gauges and electronic instrumentation on one or more chemical or formulation units, such as mixers, kettles, blenders, dryers, or tableting, encapsulation, granulation and coating machines; measuring, weighing and loading chemical ingredients following formulation cards; making samples and performing routine chemical and physical tests of products and recording production data; cleaning and performing minor repairs to machines and plant.

**8132 PHOTOGRAPHIC PRODUCTS PLANT AND MACHINE OPERATORS** operating and monitoring equipment which makes photographic film and paper; operating, monitoring and testing photographic processing and printing equipment, and maintaining operational standards; preparing exposed film for different processing batches in dark rooms and dark chambers; inspecting images, films and prints, and adjusting settings on printmaking equipment to produce the required colour, brightness, contrast, number, size and type of prints; adjusting settings and running automatic developing equipment; operating equipment to transfer film to videotape or other electronic media; performing photographic processing related tasks.

**8141 RUBBER PRODUCTS MACHINE OPERATORS** operating and monitoring machines which knead, mix and blend rubber and rubber compounds for further processing; operating and monitoring machines which produce sheets of rubber or rubberized fabric by a rolling process; operating and monitoring machines which extrude compounded rubber or shape vulcanized rubber by molding; operating and monitoring machines which build up tyres on a form, vulcanize tyres and mold or rebuild used tyres; examining outputs for defects and conformity to specifications; locating defects and repairing worn and faulty tyres by vulcanizing or other processes.

**8142 PLASTIC PRODUCTS MACHINE OPERATORS** operating and monitoring machines which knead and blend compounds to obtain plastic materials; operating and monitoring machines which shape plastic materials by molding, extrusion, blowing, cutting and other means; operating and monitoring machines which cut, fold and glue paper to make envelopes and paper bags, or which form bags from other similar material.

**8143 PAPER PRODUCTS MACHINE OPERATORS** monitor and operate machines which produce boxes; envelopes, bags, and other goods from paper, paperboard, cardboard and similar materials.

**8151 FIBRE PREPARING, SPINNING AND WINDING MACHINE OPERATORS** operating and monitoring machines for tearing woolen rags into fiber; operating and monitoring machines for cleaning and turning woolen yarn waste into fluffed wool; operating and monitoring machines which combine textile fibers into uniform blends; 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; operating draw frames (machines) having numbers of drawing sets, each set combining several slivers into one of nearly the same weight and thickness as any of the original slivers; operating and monitoring machines which spin thread and yarn from roving, wind two or more threads onto a 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; operating and monitoring spinning frames that draw out and twist roving or sliver into yarn; operating and monitoring machines for drawing slivers received from drawing machines into loosely twisted strands.

**8152 WEAVING AND KNITTING MACHINE OPERATORS** setting up and operating batteries of automatic, link-type knitting machines to knit garments of specified pattern and design; threading yarn, thread and fabric through guides, needles and rollers of machines for weaving, knitting or other processing; tending automatic looms that simultaneously weave pile yarn, filling yarn and warp yarn material to produce carpets and rugs with various coloured designs; operating and monitoring looms on which yarn or twist is intersected and knotted at regular intervals to form mesh; 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 matters coverings; tending circular knitting machines with automatic pattern controls that knit seamless hose; operating and monitoring knitting machines to knit hosiery to shape of foot and leg; operating and monitoring machines for knitting heels and toes of socks into ribs or tops cut from circular fabric.

**8153 SEWING MACHINE OPERATORS** operating or tending sewing machines to perform garment sewing operations such as joining, reinforcing, seaming or decorating garments or garment parts; attaching buttons, hooks, zippers, fasteners or other accessories to fabric, using feeding hoppers or clamp holders; tending semiautomatic sewing machines with multiple-sewing heads controlled by pattern chains that embroider various designs on garments; operating machines such as single or double needle sergers and flat-bed felling machines to automatically join, reinforce or decorate material or articles; operating fur sewing machines to

join fur pelt strips to required size and shape and join pelts into garment sections or shells; operating stitching machines to sew leather parts together for leather garments, hand bags, gloves or similar items; monitoring machine operations to detect problems such as defective stitching, breaks in thread or machine malfunctions; performing equipment maintenance tasks such as replacing needles.

**8154 BLEACHING, DYEING AND FABRIC CLEANING MACHINE OPERATORS** starting and controlling machines and equipment to bleach, dye or otherwise process and finish fabric, yarn, thread and/or other textile goods; tending machines that shrink woven or knitted cloth to predetermined size or strengthen the weave by interlocking the fibers; tending a variety of automatic machines that comb and polish furs; operating and monitoring machines that treat silk to give it body and weight; operating and monitoring machines that impregnate textiles with chemicals to render them waterproof; dyeing articles to change or restore their colours; operating and monitoring machines that stretch or impart luster or other type of finish to textiles; tending and regulating equipment that fumigates and removes foreign matter from furs.

**8155 FUR AND LEATHER PREPARING MACHINE OPERATORS** operating and monitoring machines which remove flesh and fat from hides or pelts to clean and soften them prior to processing; operating and monitoring machines which remove long course hair from fur pelts, trim hair to even length and dye, stretch and smooth dressed pelts; operating and monitoring machines to remove epidermis hair roots, pigment cells and lime salts from the grain side of skin; operating and monitoring machines to reduce thickness of hide or skin to uniform size; operating and monitoring machines to polish or roughen hides or skins to specified finishes; operating and monitoring machines which separate residual wool from skins, or flesh and hair from hides; operating and monitoring machines in which hides are split edgeways to form two or more pieces or to give uniform thickness; operating and monitoring machines which treat hides and skins in solutions to convert them into leather; treating surfaces of leather with oil and operating glazing machines to give glossy finishes of leather.

**8156 SHOEMAKING AND RELATED MACHINE OPERATORS** operating and monitoring machines which mark patterns and cut shoe parts; operating and monitoring machines which sew shoe parts together, or edge, polish or apply ornaments and perform finishing tasks; operating and monitoring machines which produce luggage, handbags, belts and other accessories, as well as other items such as saddles, collars or harnesses.

**8157 LAUNDRY MACHINE OPERATORS** sorting articles for cleaning according to the type, colour, fabric and cleaning treatment required; placing sorted articles into receptacles and onto conveyor belts for moving to repair and cleaning areas; checking and removing stains from garments, replacing buttons and making minor repairs; smoothing articles and guiding them through cleaning and pressing machines; stopping and starting machines to untangle, straighten and remove articles; placing articles on shelves and hanging articles for delivery and collection

**8159 TEXTILE, FUR AND LEATHER PRODUCTS MACHINE OPERATORS NOT ELSEWHERE CLASSIFIED** covers textile, fur and leather products machine operators not classified elsewhere in Major Group 815: textile, fur and leather products machine operators; operating and monitoring machines which form and make hats out of textiles, fur or leather; operating and monitoring machines which make miscellaneous articles such as braids or other trimmings; operating and monitoring machines which fold cloth into measured length; operating and monitoring machines which wind thread, twine or yarn into balls preparatory to shipping or further processing; operating and monitoring machines to measuring size of pieces of leather.

**8160 FOOD AND RELATED PRODUCTS MACHINE OPERATORS** operating and monitoring machinery used to restrain, stun and slaughter animals and to 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.

**8171 PULP AND PAPERMAKING PLANT OPERATORS** operating and monitoring screening and bleaching equipment, digesters, mixing tanks, washers and other pulp processing machinery and equipment to carry out one or more cellulose processing steps; operating and monitoring papermaking and finishing process machinery and equipment to dry, calendar, laminate, coat, slit, trim, wind or carry out other papermaking and finishing process steps; controlling start-up and shut-down of machinery and equipment, and observing equipment and machinery panel indicators, gauges and other equipment to detect machinery and equipment

malfunctions and ensure that process steps are carried out according to specifications; communicating with process control operators to make process adjustments and to start up or shut down machinery and equipment as required; analyzing instrument readings and production test samples and making adjustment to the production process and equipment as required.

**8172 WOOD PROCESSING PLANT OPERATORS** 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; operating and monitoring log in-feed and conveyor systems; operating and monitoring head saws, re-saws and multi-blade saws to saw logs, cants, flitches, slabs or wings and remove rough edges from sawn timber into dressed lumber of various sizes, and to saw or split shingles and shakes; operating and monitoring plywood core-laying machines and hot-plate plywood presses and machines which cut veneer; cleaning and lubricating sawmill equipment.

**8181 GLASS AND CERAMICS PLANT AND MACHINE OPERATORS** operating and monitoring glass-making furnaces to make glass by melting and fusing pre-mixed ingredients; tending hot or cold end spray equipment used to coat glassware with surface hardener; operating and maintaining machines that press or blow molten glass into molds to form or shape containers such as bottles, jars and drinking glasses; operating hand presses to mold glass into required shape; operating drawing kilns to process molten glass into continuous sheets of flat glass; operating and monitoring floating-glass production plants; operating and maintaining finishing machines to grind, drill, sand, bevel, decorate, wash or polish glass or glass products; setting and operating press machines to mold ceramic articles from moist clay; operating machines to mix clay with water to knead it into a suitable plastic condition or knead it into a suitable plastic condition or semi-liquid form for making ceramic products; operating and monitoring kilns which bake pottery, porcelain ware, bricks and tiles

**8182 STEAM ENGINE AND BOILER OPERATORS** 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 that boiler water, chemicals and fuel 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 arranging 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 the ship's engineer officer on watch.

**8183 PACKAGING, BOTTLING AND LABELING MACHINE OPERATORS** operating and monitoring machines that weigh, wrap, seal and pack various products; 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; operating and monitoring machines that, by gluing or other methods, label products, packages and various containers.

**8189 OTHER STATIONERY 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.

## **82 PLANT AND MACHINE ASSEMBLERS**

**8211 MECHANICAL MACHINERY ASSEMBLERS** assembling and installing prefabricated parts or components to form subassemblies, mechanical machinery, engines and finished motor vehicles; 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; rejecting faulty assemblies and components.

**8212 ELECTRICAL AND ELECTRONIC EQUIPMENT ASSEMBLERS** assemble components parts and electrical and electronic systems and positioning, aligning and fastening units to assemblies, subassemblies or frames using hand or power tools and soldering and micro-welding equipment; reviewing work orders, specifications, diagrams and drawings to determine materials needed and assembly instructions; recording production and operational data on special forms; operating wire coiling machines to wind wire coils used in electrical equipment and components such as registers, transformers, armature wires, electric motors and generators; inspecting and testing completed components and assemblies, wiring installations and circuits, and rejecting faulty assembly components.

**8219 OTHER PLANT AND MACHINE ASSEMBLERS NOT ELSEWHERE CLASSIFIED** assemble component parts and positioning, aligning and fastening units to assemblies, subassemblies or frames using hand or power tools and soldering and micro-welding equipment; 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 components and completed assemblies; rejecting faulty products.

## **83 DRIVERS AND MOBILE MACHINE/PLANT OPERATORS**

**8311 LOCOMOTIVE ENGINE DRIVERS** drive or assist in driving a steam, electric or diesel-electric locomotive engine; driving an underground or elevated passenger train; driving a locomotive to haul carriages underground or on the surface of a mine or quarry; watching for track hazards and observing signals and indicator gauges; operating communications systems to communicate with train crews and traffic controllers to ensure safe operation and scheduling of trains.

**8312 RAILWAY BRAKES, SIGNAL, SHATTER AND SWITCH OPERATORS** take charge of and safeguarding freight trains during runs; controlling the flow of railway traffic over sections of line by operating signals and switches from control panels or signal boxes; switching and coupling rolling stock in railway yards and sidings in accordance with orders about loading, unloading and make up of trains; making up trains for hauling by locomotive or cable and directing their movement along haulage ways in a mine or quarry; checking train systems and equipment such as air-conditioning and heating systems, brakes and brake hoses prior to train run.

**8321 MOTORCYCLE DRIVERS** drive and tend motorcycles or motorized tricycles to transport materials, goods and passengers; observing traffic rules and signals; cleaning and washing vehicles as well as performing maintenance and minor repairs; keeping a record of journeys.

**8322 CAR, TAXI AND VAN DRIVERS** drive and tend passengers vans, cars or taxis; driving and tending cars, vans or small trucks to deliver mail or goods; assisting passengers with handling of luggage; collecting fares, payments for deliveries, or documents certifying deliveries; operating telecommunications equipment to report location and availability, and following directions of control centre; determining most appropriate route; assisting physically challenged passengers; operating equipment to facilitate the loading and unloading of physically challenged passengers.

**8331 BUS TRUCK AND TRAM DRIVERS** drive and tend motor buses, trolley buses or motor coaches to transport local or long distance passengers, mail or goods; driving and tending street tramcars transporting passengers; opening and closing doors before or after passengers board or alight; assisting passengers with luggage; controlling lighting, heating and ventilation on buses and trams; observing traffic to ensure safe progress; collecting fares or verifying that passengers have the necessary ticket.

**8332 HEAVY TRUCK AND LORRY DRIVERS** drive and tend 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; determining the most appropriate routes; ensuring that goods are stowed and securely covered to prevent loss and damage; assisting with or carrying out loading or unloading operations, using various lifting or tipping devices; carrying out minor maintenance to vehicles, and arranging major maintenance and repairs; estimating weights to comply with load limitations, and ensuring the safe distribution of weights.

**8341 MOBILE FARM AND FORESTRY PLANT OPERATORS** drive and tend tractor-drawn or self-propelled special-purpose farm machinery to plough land and sow, fertilize, cultivate and harvest crops; 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; preparing and positioning plant for operation; adjusting speed, height and depth of implements; operating plant to hold, lift and cut trees; operating attachments to lift, swing, release and sort trees and logs, and operating auxiliary plant such as chipping machines and log splitting machines; feeding felled trees into processors to strip limbs and cut into logs and loading logs onto stockpiles and into trucks; servicing machinery and performing minor repairs.

**8342 EARTHMOVING AND RELATED PLANT OPERATORS** operate and monitor excavating machinery equipment with moveable shovels, grab-buckets or dragline buckets, to excavate and move earth, rock, sand, gravel or similar materials; operating and monitoring machinery for digging trenches for sewers, drainage, water, oil, gas or similar pipelines; operating and monitoring machinery equipped with concave steel blades to move, distribute and level earth, sand, snow and other materials; operating and monitoring equipment to remove sand, gravel and mud from bottom of body of water; operating and monitoring machines for hammering wooden, concrete or steel piles into ground.

**8343 CRANE, HOIST AND RELATED PLANT OPERATORS** operate and monitor stationary or mobile cranes by raising and lowering jibs and booms to lift, move, position or place equipment and materials; operating and monitoring equipment for hoisting, lowering or raising workers and materials on construction sites or in mines; operating and monitoring ski-lifts and similar equipment; operating and monitoring machinery used to haul ferries or barges with goods, passengers and vehicles across short stretches of water; operating and monitoring machinery to open and close bridges for the passage of road and water traffic; operating and monitoring cranes equipped with dredging attachments to dredge water ways and other areas; operating cranes mounted on boats or barges to lift, move and place equipment and materials.

**8344 LIFTING-TRUCK OPERATORS** operate and monitor lifting truck and similar equipment to load and unload, transport, lift and stack goods and pallets in terminals, harbours, warehouses, factories and other establishments; positioning lifting devices under, over or around loaded pallets, skids and boxes, and securing material or products for transport to designed areas; inspecting equipment to identify wear and damage; performing routine maintenance on vehicles and equipment; keeping records of work undertaken and breakdowns of vehicles.

## **9 ELEMENTARY OCCUPATIONS**

### **91 CLEANERS AND HELPERS**

**9111 DOMESTIC CLEANERS AND HELPERS** sweep, vacuum clean, polish and wash floors and furniture, or washing windows and other fixtures; washing, ironing and mending linen and other textiles; washing dishes; helping with preparation, cooking and serving of meals and refreshments; purchasing food and various other household supplies; cleaning, disinfecting and deodorizing kitchens, bathrooms and toilets; cleaning windows and other glass surfaces

**9112 CLEANERS AND HELPERS OFFICES, HOTELS AND OTHER ESTABLISHMENTS** sweep, vacuum clean, washing and polishing floors, furniture and other fixtures in buildings, coaches, buses, trams, trains and aircraft; making beds, cleaning bathrooms and supplying towels, soap and related items; cleaning kitchens and generally helping with kitchen work, including dishwashing; picking up rubbish, emptying, garbage containers and taking contents to waste areas for removal.

**9121 HAND LAUNDERERS AND PRESSERS** laundering and pressing linen, clothing, fabrics and similar articles by hand in a laundry or other establishment; cleaning, by hand and with chemical solutions, clothing, fabrics, leather goods and similar articles, in a dry-cleaning or other establishment; replacing buttons and making minor repairs; placing articles on shelves and hanging articles for delivery and collection.

**9122 VEHICLE CLEANERS** clean, washing and polishing cars and other vehicles, by hand or using hand-held power tools; vacuuming vehicles interiors and dry-cleaning carpets and upholstery; applying cleaning agents to remove stains from vehicle exteriors and interiors; washing tyres and wheel arches and blackening tyres; washing and polishing vehicle windows; emptying and cleaning compartments in vehicles-

**9123 WINDOW CLEANERS** wash windows or other glass surfaces with water or various solutions, and drying and polishing them; using ladders, swinging scaffolds, bosun's chairs, hydraulic bucket trucks and other equipment to reach and clean windows in multistory buildings; selecting appropriate cleaning or polishing implements.

**9129 OTHER CLEANING WORKERS NOT ELSEWHERE CLASSIFIED** clean carpets and upholstered furniture using cleaning machines and their attachments; selecting and applying cleaning agents to remove stains from carpets; treating carpets with soil repellent chemicals and deodorants, and treating for pests; cleaning stone walls, metal surfaces and fascias using high pressure water cleaners and solvents; applying chemicals and high pressure cleaning methods to remove micro-organisms from water and filtration systems; using wet vacuums and other suction equipment to remove scale, accumulated dirt and other deposits from swimming pools, cooling tower components and drains.

### **92 AGRICULTURAL, FISHERY AND FORESTRY LABOURERS**

**9211 CROP FARM LABOURERS** dig and shovel to clear ditches or for other purposes; loading and unloading supplies, produce and other materials; raking, pitching and stacking straw, hay and similar materials; watering, thinning and weeding crops by hand or using hand tools; picking fruit, nuts, vegetables and other crops; planting and harvesting field crops such as rice by hand; grading, sorting, bunching and packing produce into containers; performing minor repairs on fixtures, buildings, equipment and fences.

**9212 LIVESTOCK FARM LABOURERS INCL. HERDERS** dig and shovel to clear ditches or for other purposes; loading and unloading supplies, produce and other materials; feeding, watering and cleaning animals and keeping their quarters clean; monitoring livestock and reporting on their condition; assisting with maintaining the health and welfare of livestock; assisting with herding, droving and separating livestock for milking, shearing, transportation or slaughter, and between pastures; collecting eggs and placing in incubators; raking, pitching, stacking and storing hay, straw and other types of animals feed and bedding.

**9213 MIXED CROP & LIVESTOCK FARM LABOURERS** dig and shovel to clear ditches or for other purposes; loading and unloading supplies, produce and other materials; raking, pitching and stacking straw, hay and similar materials; watering, thinning and weeding crops by hand or using hand tools; picking fruit, nuts, vegetables and other crops and collecting eggs; planting and harvesting field crops such as rice by hand; feeding, watering and cleaning animals and keeping their quarters clean; monitoring livestock and reporting on their condition; assisting with herding, droving and separating livestock for milking, shearing, transportation or slaughter, and between pastures; grading, sorting, bunching and packing produce into containers; performing minor repairs on fixtures, buildings, equipment and fences.

**9214 GARDEN AND HORTICULTURAL LABOURERS** load, unload and move supplies, produce and equipment; preparing garden sites and plots using hand tools and simple machines assisting with planting and transplanting flowers, shrubs, trees and lawns; maintaining gardens by watering, weeding and moving lawns; cleaning gardens and removing rubbish; assisting with propagating, planting and potting seeds, bulbs and cuttings; tending plants by hand watering and weeding; harvesting and packaging plants for sale and transport; performing minor repairs on fixtures, buildings, equipment and fences.

**9215 FORESTRY LABOURERS** dig holes for tree planting; stacking and loading logs and timber; clearing undergrowth in forest stands and thinning young plantations; maintaining look-out for fires in forests; removing major branches and trees tops, trimming branches and sawing trunks into logs; operating and maintaining manual and hand-held machines saws to fell trees and cut felled trees and branches into logs; collecting seeds and planting seedlings; performing minor repairs and maintenance of forest roads, buildings, facilities and equipment

**9216 FISHERY, AQUACULTURE, HUNTING AND TRAPPING LABOURERS** clean the sea-bed and feeding fish and mollusks that are being cultivated; gathering seaweed, sea mosses, clams and other mollusks; preparing nets, lines and other fishing tackle and other deck equipment; operating fishing gear to catch fish and other marine life; cleaning, sorting and packing fish and seafood in ice and salt, and stowing catch in hold; cleaning deck surfaces and fish hold; handling mooring lines during docking.

## **93 LABOURERS IN MINING, CONSTRUCTION, MANUFACTURING AND TRANSPORT**

**9311 MINING AND QUARRYING LABOURERS** assist miners and quarry in maintaining machinery, equipment, and mine and quarry installations; assembling and dismantling mining equipment; removing tunnel supporters from disused workings in mines and quarries; removing dangerous projections from mine and quarry workings; removing waste and serviceable materials and equipment from work areas after extraction activities have been completed, and clearing rock and mineral spills; cleaning machinery, equipment, tools, roadways and haulage tracks; sorting, loading, unloading, stacking and storing tools, materials and supplies used by other mine workers.

**9312 CIVIL ENGINEERING LABOURERS** dig and fill holes and trenches using hand- held tools; shovelling and spreading gravel and related materials; trimming and cutting rocks and concrete and bitumen surfaces using jack hammers; loading and unloading construction materials, excavated material and equipment and transporting them around construction sites using wheelbarrows and hand trucks; cleaning work sites and removing obstructions.

**9313 BUILDING CONSTRUCTION AND MAINTENANCE LABOURERS** clean used building bricks and doing other simple work on demolition sites; mixing, pouring and spreading materials such as concrete, plaster and mortar; digging and filling holes and trenches using hand-held tools; spreading sand, soil, gravel and similar materials; loading and unloading construction materials, excavated material and equipment and transporting them around construction sites using wheelbarrows, hods and hands trucks; cleaning work sites and removing obstructions.

**9321 HAND PACKERS** weighing, wrapping, sealing and packing materials and various products by hand; filling bottles, cans, boxes, bags and other containers with products by hand; labelling products, packages and various containers by hand.

**9329 OTHER MANUFACTURING LABOURERS NOT ELSEWHERE CLASSIFIED** convey goods, material, equipment and other items to work areas, and removing finished pieces; loading and unloading vehicles, trucks and trolleys; clearing machine blockages, and cleaning machinery, equipment and tools; carrying out manual sorting of products or components.

**9331 HAND AND PEDAL VEHICLE DRIVERS** load and unload goods, or assisting passengers in getting on or off a vehicle; moving vehicle in the desired direction with due regard to other traffic and traffic regulations; inspecting vehicle components to identify wear and damage; maintaining vehicle, making minor repairs and installing replacement parts; collecting fares or charges.

**9332 DRIVERS OF ANIMAL DRAWN VEHICLES** harness animals and hitch them to vehicles or machinery; loading or unloading goods, or assisting passengers in getting on or off a vehicle; driving animals in the desired direction with due regard to other traffic and traffic regulations; collecting fares or charges; driving animals to haul wagons in mines or quarries; driving animals hitched to farm or other machinery; driving working elephants; maintaining vehicle or machinery, making minor repairs and installing replacement parts; grooming and feeding animals.

**9333 FREIGHT HANDLERS** pack office or household furniture, machines, appliances and related goods to be transported from one place to another; carrying goods to be loaded on or unloaded from vans, trucks, wagons, ships or aircraft; loading and unloading grain, coal, sand, baggage and other items by placing them on conveyor belts, pipes and other conveyances; 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; carrying and stacking goods in warehouses and similar establishments.

**9334 SHELF FITTERS** place goods neatly in bins and on racks, and stacking bulky goods on floors; filling shelves with goods and ensuring that goods with the earliest use by dates are at the front of shelves; removing goods with past due use by dates; maintaining shelf order by removing stock belonging in a different location; noting what has been sold and collecting goods needed from the stockroom; obtaining articles for customers from shelf or stockroom.

## **94 FOOD PREPARATION ASSISTANTS**

**9411 FAST FOOD PREPARERS** prepare simple or pre-prepared foods and beverages such as sandwiches, hamburgers, pizzas, fish and chips, salads and coffee; washing, cutting, measuring and mixing foods for cooking; operating large volume single process cooking equipment such as grills, deep fat fryers or griddles; re-heating pre-prepared food; cleaning food preparation areas, cooking surfaces and utensils; taking and serving food and beverage orders in eating places that specialize in fast service and carry out food; ordering and taking delivery of fast food ingredients.

**9412 KITCHEN HELPERS** clean kitchens, food preparation areas and service areas; assisting cooks and chefs in preparation of food by washing, peeling, chopping, cutting, measuring and mixing ingredients; assembling dishes for services; unpacking, checking, transferring, weighing and storing supplies in refrigerators, cupboards and other storage areas; washing dishes and cooking utensils and putting them away; preparing, cooking, toasting and heating simple food items

## **95 STREET AND RELATED SALES AND SERVICES ELEMENTARY OCCUPATIONS**

**9510 STREET AND RELATED SALES AND SERVICES WORKERS** clean kitchens, food preparation areas and service areas; assisting cooks and chefs in preparation of food by washing, peeling, chopping, cutting, measuring and mixing ingredients; assembling dishes for services; unpacking, checking, transferring, weighing and storing supplies in refrigerators, cupboards and other storage areas; washing dishes and cooking utensils and putting them away; preparing, cooking, toasting and heating simple food items.

**9520 STREET VENDORS (EXC. FOOD)** buy or receive items for sale, or making simple items; loading and unloading baskets, trays, pushcarts, bicycles, hand-trucks or other vehicles, to transport goods to the streets or public places such as stations or cinemas; displaying goods or calling out to attract customers attention; approaching potential customers on streets, or by going from house to house, to offer goods for sale; receiving immediate payment

## 96 REFUSE WORKERS AND OTHER ELEMENTARY OCCUPATIONS

**9611 GARBAGE AND RECYCLING COLLECTORS** collect rubbish and recyclable materials and locating them into bins and garbage and recycling trucks; riding on or in garbage and recycling trucks; lifting garbage bins and emptying contents into trucks and larger containers; unloading garbage and recycling trucks.

**9612 REFUSE SORTERS** search through refuse and collecting items for recycling from dump sites, domestic, commercial and industrial premises or from public places such as streets; sorting cardboard, paper, glass, plastic, aluminium or other recyclable materials by type; placing recyclable items and materials in designed compartments and containers for storage or transportation; identifying and setting aside items of furniture, equipment, machinery or components that are suitable for repair or re-use; transporting recyclable items by hand or using non-motorized vehicles; selling recyclable or reusable materials.

**9613 STREET SWEEPERS AND RELATED WORKERS/LABOURERS** sweeping streets, parks, airports, stations and similar public places; shoveling snow; beating dust out of carpets by using a carpet-beater; cleaning rubbish, leaves and snow from driveways and grounds.

**9621 MESSENGERS, PACKAGER DELIVERERS, LUGGAGE PORTERS AND CARRIERS** delivering messages, packages and other items within an establishment or between establishments or elsewhere; delivering various goods to and from enterprises, shops, households and other places; carrying and delivering luggage at hotels, stations, airports and elsewhere; receiving and marking baggage by completing and attaching claim checks; planning and following the most efficient route; sorting items to be delivered according to the delivery route.

**9622 ODD-JOB PERSONS** repairing broken windows, screens, doors, fences, barbecues, picnic tables, shelves, cupboards and other items; replacing defective items such as light bulbs; repairing and painting interior and exterior surfaces such as walls, ceiling and fences; adjusting doors and windows; replacing tap washers; putting up handrails and grab rails; unloading coal or wood and putting it into cellars of private households or establishments.

**9623 VENDING MACHINE MONEY COLLECTORS, METER READERS AND OTHER RELATED WORKERS** filling storage areas of vending machines and collecting money from their containers; collecting money from parking meters and similar coin boxes; reading electricity, gas or water meters and recording consumption; keeping records of merchandise distributed and money collected; proceeding along established routes to take readings of meter dials; verifying readings in cases where consumption appears to be abnormal, and recording possible reasons for fluctuations; inspecting meters for unauthorized connections, defects and damage such as broken seats.

**9624 WATER CARRIERS AND RELATED LABOURERS** cutting and collecting wood from forests for sale in market or as fuel or for own consumption; visiting forests or fields to pick pieces of dried wood from the ground and arranging them in heaps; cutting decayed branches and trunks of trees using axes and hand saws; tying collected wood into small faggots and carrying them or transporting them on a cart to the market for sale or to villages or households for use; drawing water from wells, rivers or ponds, etc. for domestic use; 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 households for drinking, cleaning of drains or storage in tanks.

**9629 ELEMENTARY WORKERS NOT ELSEWHERE CLASSIFIED** selling admission tickets and passes to patrons at entertainment events or collecting tickets, passes and tags from patrons; examining tickets or passes to verify authenticity, using criteria such as colour and date issued; guiding patrons to exits or providing other instructions or assistance in case of emergency; directing patrons to restrooms, concession stands and telephones; patrolling parking areas in order to prevent vehicle damage and vehicle property theft.

### ADDITIONAL CATEGORIES

## 0 ARMED FORCES OCCUPATIONS

**0110 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.

**0210 NON-COMMISSIONED ARMED FORCES OFFICERS** enforce military discipline and supervise the activities of those employed in Sub-major Group 03. 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.

**0310 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.

