



**MALAYSIA STANDARD  
CLASSIFICATION  
OF OCCUPATIONS  
1998**

**A publication of  
Manpower Department  
Ministry of Human Resources,  
Malaysia**

THE TASKS AND DUTIES DESCRIBED IN THIS CLASSIFICATION AT MAJOR GROUP LEVEL, SUB-MAJOR GROUP, MINOR GROUP OR UNIT GROUP LEVEL ARE NOT ALWAYS, NOR SHOULD THEY ALWAYS BE PERFORMED COMPLETELY BY ALL OCCUPATIONS LISTED UNDER THE RESPECTIVE GROUP.

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## PREFACE

The first national occupational classification of Malaysia, commonly known as the Dictionary of Occupational Classification (DOC) was published in 1969. Constant updating of the document was pursued with the accelerated growth of national development and introduction of new occupations or redundancy of existing jobs. Subsequently, in 1992 the DOC was translated into Bahasa Malaysia (*Kamus Pengkelasan Pekerjaan*). Basically, the occupational classification of the DOC was structured along the International Standard Classification of Occupations (ISCO) 1968 under the auspices of the International Labour Organisation.

The International Labour Organisation introduced major changes to the international standard for classification of occupations, both in terms of structure as well as principles of occupational classification in 1988. The Malaysia Standard Classification of Occupations (MASCO) is fundamentally aligned to ISCO-88 with modifications to suit national requirements, reflecting the economic, technological and organisational changes of the country. Prominent structural differences between the DOC and MASCO include the disaggregation of the Major Group 0/1 *Professional, Technical and Related Workers* of the DOC into two major groups, that is, Major Group 2 *Professionals* and Major Group 3 *Technicians and Associate Professionals* of the MASCO; the combination of both Major Group 4 *Sales Workers* and Major Group 5 *Service Workers* of the DOC under Major Group 5 *Service Workers and Shop and Market Sales Workers*; the disaggregation of Major Group 7/8/9 *Production and Related Workers, Transport Equipment Operators and Labourers* into Major Group 7 *Craft and Related Trades Workers*, Major Group 8 *Plant and Machine Operators and Assemblers* and Major Group 9 *Elementary Occupations*; and the introduction of *Armed Forces* (Major Group 0). In addition, the MASCO introduced new occupational groups and consolidated a number of occupations into a general occupational title. In terms of principles of occupational classification, the MASCO is a skill-based classification which groups occupations according to the similarity of tasks performed.

The MASCO will provide a common framework for occupational classification, enabling data sharing as well as ensuring consistency and comparability among producers and users of data. We hope that this publication is useful for both the public and private sectors particularly in manpower, educational and training planning, labour market surveys and analyses, job placement and recruitment services, vocational/career guidance and in other aspects of labour administration. Complementing this publication is the development of a user-friendly computer-assisted coding system of the MASCO known as AUTOMASCO to facilitate accurate occupational coding using computer. The AUTOMASCO will enable one to search the MASCO code alphabetically or systematically and to extract complete and instant information from the 1998 MASCO Manual.

We record our deep appreciation to the contribution of many individuals, government and private organisations, professional associations and unions who were involved in developing the MASCO and participating in the surveys. Special appreciation is extended to the Economic Planning Unit, Prime Minister's Department for their generous support. The compilation of the MASCO would not have materialised without the financial support of the Asian Development Bank. We are also indebted to Mr. Johannes Bekkers of the Netherlands Economic Institute, the occupational classification expert, who shared his vast experience and provided training in the field of occupational classification to the officers of the Manpower Department. We would once again like to take this opportunity to express our sincere gratitude to all involved for the successful compilation and publication of the MASCO.

(MOHD. NAWI BIN HA'JI AHMAD)  
Director-General,  
Manpower Department,  
Ministry of Human Resources,  
Malaysia.

## PRINCIPLES OF CLASSIFICATION OF OCCUPATIONS

The two main concepts used in occupational classification are the concept of the kind of work performed or job and the concept of skill.

Job is defined as a set of tasks and duties performed by one person. A set of jobs whose main tasks and duties are similar is referred to an occupation. In other words, persons who perform similar main tasks are considered doing the same type of work and are classified in the same occupational group, regardless of the level of authority, responsibility or work experience. For instance, chief civil engineer is classified among civil engineers (unit group 2142) and chief accountant among accountants and auditors (unit group 2410).

Skill is defined as the ability to perform tasks and duties of an occupation and has, for the purpose of the MASCO 1998, the following two dimensions:

- (a) Skill level - which is a function of the complexity and range of tasks and duties involved; and
- (b) Skill specialisation - defined by the field of knowledge required, the tools and machinery used, the materials worked on or with, as well as the kinds of goods and services provided.

The operational definitions of the four main skill levels are summarised as follows:

<b>Skill Level</b>	<b>Educational Level</b>
First	Primary education
Second	Secondary or post-secondary education
Third	Tertiary education leading to an award not equivalent to a first university level
Fourth	Tertiary education leading to a university or postgraduate university degree or equivalent

The use of the educational categories to define the four skill levels does not mean that the skills necessary to perform the tasks and duties of a given occupation can be acquired only through formal education. The skills may be, and often are, acquired through informal training and experience. So, when classifying an occupation as for example engineer, it does not mean that the post can only be occupied by a formal, registered engineer, although the activities will correspond quite close to those undertaken by the said engineer. In addition, the focus is on the skills required to carry out the tasks and duties and not on whether a worker having a particular occupation is more or less skilled than another worker in the same occupation.

The Major Groups of the MASCO 1998 can be categorised according to the following four common skill levels:

<b>Skill Level</b>	<b>Major Groups</b>
Fourth	2 Professionals
Third	3 Technicians and Associate Professionals
Second	4 Clerical Workers
	5 Service Workers and Shop and Market Sales Workers
	6 Skilled Agricultural and Fishery Workers
	7 Craft and Related Trades Workers
	8 Plant and Machine-operators and Assemblers
First	9 Elementary Occupations

However, the concept of skill level is not applicable to Major Group 1: Legislators, Senior Officials and Managers and Major Group 0: Armed Forces. For these two groups, the skill level concept does not reflect the main skill requirements for distinguishing them from other Major Groups.

## STRUCTURE OF CLASSIFICATION

The occupational classification structure has four main levels, namely, major groups, sub-major groups, minor groups and unit groups as tabulated as follows:

	<i>Major Groups (1-digit)</i>	<i>Sub-major Groups (2- digit)</i>	<i>Minor Groups &lt;3-digit)</i>	<i>Unit Groups (4-digit)</i>
1	Legislators, Senior Officials and Managers	3	8	31
2	Professionals	6	19	52
3	Technicians and Associate Professionals	6	21	64
4	Clerical Workers	5	10	20
5	Service Workers and Shop and Market Sales Workers	2	8	19
6	Skilled Agricultural and Fishery Workers	2	6	19
7	Craft and Related Trades Workers	4	15	55
8	Plant and Machine-operators and Assemblers	3	20	65
9	Elementary Occupations	3	9	22
0	Armed Forces	1	1	1
10	Total	35	117	348

In the classification all occupations are categorised into ten (10) major groups (1-digit). Subsequently, the major groups are divided into 35 sub-major groups (2-digit) which comprise 117 minor groups (3-digit). The minor groups are further sub-divided into 348 unit groups (4-digit).

A number of occupational titles are classified within each unit group. Occupational titles classified in the same unit group are assigned different sub-codes. The numeral 9 in the last digit of a two-, three-, four- or five-digit code refers to all other groups. Residual occupational category or miscellaneous group usually has 'not elsewhere classified' at the end.

The following example depicts the finer details of several occupations:

<i>Group</i>	<i>Title</i>	<i>Code</i>
Major Group	Professionals	2
Sub-major Group	Physical, Mathematical and Engineering Science Professionals	21
Minor Group	Architects, Engineers and Related Professionals	214
Unit Group	Civil Engineers	2142
	Engineer, civil	21421
	Engineer, civil/building construction	21422
	Engineer, civil/highways and roads	21423
	Engineer, civil/geotechnic Engineer, civil/bridge construction Engineer,	21424
	civil/irrigation Engineer,	21425
	civil/hydraulics Engineer, sewerage and sanitary	21426
	Other civil engineers	21427
		21428
		21429

## NOTES ON SOME PARTICULAR OCCUPATIONS

Supervisory occupations, as well as those of a foreman, which are mainly concerned with the control of the professional or technical quality of the work done, are classified together with the jobs whose tasks they supervise. However, if the main tasks and duties of a job consist of planning, organising and directing the daily work activities of a group of subordinate workers, the occupation should be considered as a managerial occupation and classified in the appropriate group belonging either to Sub-major Group 12: Directors and Specialised Managers or 13: General Managers (Medium/Small Enterprises). Only in large enterprises, with many levels of decision making, where between the supervisor and the operators there is at least one other supervisory level, and at the same time there is one or more levels between the supervisor and the management, supervisors may be grouped in Sub-major Group 35: Supervisors.

Working proprietors are not listed as a special group, but classified according to their activities. A shop owner, who spends most of the day behind the counter, helping customers, should be classified under Sub-major Group 52: Sales Workers, Demonstrators and Models. If however, his/her activities consist mainly of managing resources, finance and personnel, he/she should be classified under Sub-major Group 13: General Managers (Medium/Small Enterprises).

Occupations mainly concerned with on-the-job training by continuous observation, assessment and guidance are classified with the occupations whose workers they instruct, in a particular trade, craft or machine-operating task.

Apprentices and trainees are classified according to the tasks and duties actually performed, and not according to their future occupation.

## **SUMMARY OF MAJOR GROUPS**

### **1 LEGISLATORS, SENIOR OFFICIALS AND MANAGERS**

Legislators, senior officials and managers determine, formulate, direct or advise on government policies, as well as those of special-interest organisations, formulate laws, public rules and regulations, represent governments and act on their behalf, oversee the interpretation and implementation of government policies and legislation, or plan, direct, -and co-ordinate the policies and activities of enterprises or organisations, or their internal departments or sections. Reference to skill level has not been made in defining the scope of this major group.

### **2 PROFESSIONALS**

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

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

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

### **4 CLERICAL WORKERS**

Clerical workers record, organise, store and retrieve information related to the work in question, compute financial, statistical and other numerical data, and perform a number of client-oriented clerical duties especially in connection with money-handling operations, travel arrangements and business information and appointments. Most occupations in this major group require skills at the second skill level.

### **5 SERVICE WORKERS AND SHOP AND MARKET SALES WORKERS**

Service workers and shop and market sales workers provide personal and protective services related to travel, housekeeping, catering, personal care, or protection against fire and unlawful acts, or they pose as models for artistic creation and display, or demonstrate and sell goods in wholesale or retail shops and similar establishments, as well as at stalls and markets. Most occupations in this major group require skills at the second skill level.

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

Skilled agricultural and fishery workers grow and harvest field or tree and shrub crops, gather wild fruits and plants, breed, tend or hunt animals, produce a variety of animal husbandry products, cultivate, conserve and exploit forests, breed or catch fish and cultivate or gather other forms of aquatic life. Most occupations in this major group require skills at the second skill level.

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

Craft and related workers apply their specific knowledge and skills in the fields of mining and construction, form metal, erect metal structures, make, fit, maintain and repair machinery, equipment or tools, carry out printing work as well as produce or process foodstuffs, textiles, or wooden, metal and other articles.

The work is carried out by hand and by hand-powered and other tools which are used to reduce the amount of physical effort and time required for specific tasks, as well as to improve the quality of the products. The tasks call for an understanding of all stages of the production process, the materials and tools used, and the nature and purpose of the final product. Most occupations in this major group require skills at the second skill level.

## **8 PLANT AND MACHINE-OPERATORS AND ASSEMBLERS**

Plant and machine-operators and assemblers operate and monitor industrial and agricultural machinery and equipment, drive and operate trains, motor vehicles and mobile machinery and equipment, or assemble products from component parts according to strict specifications and procedures.

The work mainly calls for experience with and an understanding of industrial and agricultural machinery and equipment as well as an ability to cope with machine-paced operations and to adapt to technological innovations. Most occupations in this major group require skills at the second skill level.

## **9 ELEMENTARY OCCUPATIONS**

Elementary occupations perform simple and routine tasks which mainly require the use of hand-held tools and in some cases considerable physical effort. Most occupations in this major group require skills at the first skill level.

## **10 ARMED FORCES**

Members of the armed forces are those personnel who are currently serving in the armed forces and who are not free to accept civilian employment. Included are regular members of the army, navy, air force and other military services. Excluded are persons in civilian employment of government establishments concerned with defence issues; police (other than military police); customs inspectors and members of border or other armed civilian services, and members of military reserves not currently on active service. Reference to a skill level has not been used in defining the scope of this major group.

# MAJOR, SUB-MAJOR, MINOR AND UNIT GROUP TITLES

## MAJOR GROUP 1 **LEGISLATORS, SENIOR OFFICIALS AND MANAGERS**

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### **11 LEGISLATORS AND SENIOR OFFICIALS**

#### **111 LEGISLATORS**

1110 Legislators

#### **112 SENIOR GOVERNMENT AND STATUTORY BOARD OFFICIALS**

1120 Senior Government And Statutory Board Officials

#### **113 TRADITIONAL CHIEFS AND HEADS OF VILLAGES**

1130 Traditional Chiefs And Heads Of Villages

#### **114 SENIOR OFFICIALS OF SPECIAL-INTEREST ORGANISATIONS**

1141 Senior Officials Of Political-party Organisations

1142 Senior Officials Of Employers', Workers' And Other Economic-interest Organisations

1143 Senior Officials Of Humanitarian And Other Special-interest Organisations

### **12 DIRECTORS AND SPECIALISED MANAGERS**

#### **121 COMPANY DIRECTORS**

1210 Company Directors

#### **122 PRODUCTION AND OPERATION DEPARTMENT MANAGERS**

1221 Production And Operation Department Managers Of Goods

1222 Production And Operation Department Managers In Transport, Storage And Communications

1223 Production And Operation Department Managers In Lodging And Catering

1224 Production And Operation Department Managers In Wholesale And Retail Trade

1225 Production And Operation Department Managers In Business Services

1226 Production And Operation Department Managers In Personal Care, Cleaning And Related Services

1229 Production And Operation Department Managers Not Elsewhere Classified

#### **123 SPECIALISED DEPARTMENT MANAGERS**

1231 Finance And Administration Department Managers

1232 Personnel And Industrial Relations Department Managers

1233 Sales And Marketing Department Managers

1234 Advertising And Public Relations Department Managers

1235 Supply And Distribution Department Managers

1236 Information Technology Department Managers

1237 Research And Development Department Managers

1239 Specialised Department Managers Not Elsewhere Classified

### **13 GENERAL MANAGERS (MEDIUM/SMALL ENTERPRISES)**

#### **130 GENERAL MANAGERS**

1301 General Managers In Agriculture, Hunting, Forestry And Fishing

1302 General Managers In Manufacturing

1303 General Managers In Construction

1304 General Managers In Wholesale And Retail Trade

1305 General Managers In Lodging And Catering Services

1306 General Managers In Transport, Storage And Communications

1307 General Managers In Business Services

1308 General Managers In Personal Care, Cleaning And Related Services

1309 General Managers Not Elsewhere Classified

## **MAJOR GROUP 2 PROFESSIONALS**

### **21 PHYSICAL, MATHEMATICAL AND ENGINEERING SCIENCE PROFESSIONALS**

#### **211 PHYSICAL SCIENCE PROFESSIONALS**

- 2111 Physicists And Astronomers
- 2112 Meteorologists
- 2113 Chemists
- 2114 Geologists And Geophysicists

#### **212 MATHEMATICIANS, STATISTICIANS AND RELATED PROFESSIONALS**

- 2121 Mathematicians, Operation Research Analysts And Actuaries
- 2122 Statisticians

#### **213 COMPUTING PROFESSIONALS**

- 2131 Computer Systems Designers And Analysts
- 2132 Computer Programmers
- 2139 Computing Professionals Not Elsewhere Classified

#### **214 ARCHITECTS, ENGINEERS AND RELATED PROFESSIONALS**

- 2141 Architects, Town And Traffic Planners
- 2142 Civil Engineers
- 2143 Electrical Engineers
- 2144 Electronics And Telecommunications Engineers
- 2145 Mechanical Engineers
- 2146 Chemical Engineers
- 2147 Mining Engineers And Metallurgists
- 2148 Surveyors
- 2149 Architects, Engineers And Related Professionals Not Elsewhere Classified

### **22 LIFE SCIENCE AND HEALTH PROFESSIONALS**

#### **221 LIFE SCIENCE PROFESSIONALS**

- 2211 Biologists, Botanists, Zoologists And Related Professionals
- 2212 Pharmacologists, Pathologists And Related Professionals
- 2213 Environmental And Agricultural Science Professionals

#### **222 HEALTH PROFESSIONALS (EXCEPT NURSING)**

- 2221 Medical Doctors
- 2222 Dentists
- 2223 Veterinarians
- 2224 Pharmacists
- 2229 Health Professionals (Except Nursing) Not Elsewhere Classified

### **23 TEACHING PROFESSIONALS**

#### **231 UNIVERSITY, POLYTECHNIC AND HIGHER EDUCATION TEACHING PROFESSIONALS**

- 2310 University, Polytechnic And Higher Education Teaching Professionals

#### **232 PRE-UNIVERSITY AND SECONDARY EDUCATION TEACHING PROFESSIONALS**

- 2320 Pre-University And Secondary Education Teaching Professionals

#### **233 SPECIAL EDUCATION TEACHING PROFESSIONALS**

- 2330 Special Education Teaching Professionals

- 239 TEACHING PROFESSIONALS NOT ELSEWHERE CLASSIFIED**
- 2391 Education Specialists
- 2392 School Inspectors
- 2399 Other Teaching Professionals Not Elsewhere Classified

**24 BUSINESS PROFESSIONALS**

- 241 ACCOUNTANTS AND AUDITORS**
- 2410 Accountants And Auditors
- 242 FINANCIAL ANALYSTS AND RELATED PROFESSIONALS**
- 2420 Financial Analysts And Related Professionals
- 243 PERSONNEL AND CAREERS PROFESSIONALS**
- 2430 Personnel And Careers Professionals
- 249 BUSINESS PROFESSIONALS NOT ELSEWHERE CLASSIFIED**
- 2490 Business Professionals Not Elsewhere Classified

**25 LEGAL PROFESSIONALS**

- 250 LEGAL PROFESSIONALS**
- 2501 Lawyers
- 2502 Judges, Presidents, Magistrates And Related Judicial Officers
- 2509 Legal Professionals Not Elsewhere Classified

**29 PROFESSIONALS NOT ELSEWHERE CLASSIFIED**

- 291 ARCHIVISTS, CURATORS AND LIBRARIANS**
- 2911 Archivists And Curators
- 2912 Librarians And Related Professionals
- 292 SOCIAL SCIENCE AND RELATED PROFESSIONALS**
- 2921 Economists
- 2922 Philosophers, Historians And Political Scientists
- 2923 Psychologists
- 2924 Sociologists, Anthropologists And Related Professionals
- 2925 Social Work Professionals
- 293 WRITERS AND CREATIVE OR PERFORMING ARTISTS**
- 2931 Authors, Journalists And Other Writers
- 2932 Sculptors, Painters And Related Artists
- 2933 Composers, Musicians And Singers
- 2934 Choreographers And Dancers
- 2935 Film, Stage And Related Producers, Directors And Actors
- 294 RELIGIOUS PROFESSIONALS**
- 2940 Religious Professionals

**MAJOR GROUP 3**

**TECHNICIANS AND ASSOCIATE PROFESSIONALS**

**31 PHYSICAL AND ENGINEERING SCIENCE ASSOCIATE PROFESSIONALS**

- 311 PHYSICAL SCIENCE AND ENGINEERING TECHNICIANS**
- 3111 Chemical And Physical Science Technicians

- 3112 Civil Engineering Technicians
- 3113 Electrical Engineering Technicians
- 3114 Electronics And Telecommunications Engineering Technicians
- 3115 Mechanical Engineering Technicians
- 3116 Chemical Engineering Technicians
- 3117 Mining And Metallurgical Technicians
- 3118 Draughtspersons
- 3119 Physical And Engineering Science Technicians Not Elsewhere Classified
- 312 COMPUTER SUPPORT TECHNICIANS**
- 3120 Computer Support Technicians
- 313 OPTICAL AND ELECTRONIC EQUIPMENT OPERATORS**
- 3131 Photographers And Image And Sound Recording Equipment Operators
- 3132 Broadcasting And Telecommunications Equipment Operators
- 3139 Optical And Electronic Equipment Operators Not Elsewhere Classified
- 314 TRANSPORT CONTROLLERS AND TECHNICIANS**
- 3141 Ship's Engineers
- 3142 Ship's Deck Officers And Pilots
- 3143 Aircraft Pilots And Related Associate Professionals
- 3144 Air Traffic Controllers
- 3145 Transport Controllers
- 3149 Transport Controllers And Technicians Not Elsewhere Classified
- 315 BUILDING, PUBLIC HEALTH AND SAFETY AND QUALITY INSPECTORS**
- 3151 Building And Fire Inspectors
- 3152 Safety, Health And Quality Inspectors
  
- 32 LIFE SCIENCE AND HEALTH ASSOCIATE PROFESSIONALS**
  
- 321 LIFE SCIENCE TECHNICIANS AND RELATED ASSOCIATE PROFESSIONALS**
- 3211 Life Science Technicians
- 3212 Agronomy And Forestry Technicians
- 3213 Farming And Forestry Advisers
- 322 MODERN HEALTH ASSOCIATE PROFESSIONALS (EXCEPT NURSING)**
- 3221 Medical Assistants
- 3222 Sanitarians
- 3223 Dieticians And Nutritionists
- 3224 Optometrists And Opticians
- 3225 Dental Assistants
- 3226 Physiotherapists and Related Associate Professionals
- 3227 Veterinary Assistants
- 3228 Pharmaceutical Assistants
- 3229 Modern Health Associate Professionals (Except Nursing) Not Elsewhere Classified
- 323 NURSING AND MIDWIFERY ASSOCIATE PROFESSIONALS**
- 3231 Nursing Associate Professionals (Except Dental)
- 3232 Midwifery Associate Professionals
- 324 TRADITIONAL MEDICINE PRACTITIONERS AND FAITH HEALERS**
- 3241 Traditional Medicine Practitioners
- 3242 Faith Healers

- 33 TEACHING ASSOCIATE PROFESSIONALS**
- 331 PRIMARY EDUCATION TEACHERS**
- 3310 Primary Education Teachers
- 332 PRE-PRIMARY EDUCATION TEACHERS**
- 3320 Pre-Primary Education Teachers
- 339 TEACHING ASSOCIATE PROFESSIONALS NOT ELSEWHERE CLASSIFIED**
- 3390 Teaching Associate Professionals Not Elsewhere Classified
- 34 FINANCE, SALES AND RELATED BUSINESS ASSOCIATE PROFESSIONALS**
- 341 FINANCE AND SALES ASSOCIATE PROFESSIONALS**
- 3411 Assistant Accountants
- 3412 Securities And Finance Dealers And Brokers
- 3413 Insurance Representatives
- 3414 Real Estate Agents
- 3415 Technical And Commercial Sales Representatives
- 3416 Buyers And Purchasing Officers
- 3417 Appraisers, Valuers And Auctioneers
- 3419 Finance And Sales Associate Professionals Not Elsewhere Classified
- 342 BUSINESS SERVICES AGENTS AND TRADE BROKERS**
- 3420 Business Services Agents And Trade Brokers
- 35 SUPERVISORS**
- 350 SUPERVISORS**
- 3501 Plantation Conductors
- 3509 Other Supervisors
- 39 ASSOCIATE PROFESSIONALS NOT ELSEWHERE CLASSIFIED**
- 391 GOVERNMENT ASSOCIATE PROFESSIONALS**
- 3911 Government/Statutory Board Executive Officers
- 3912 Police Inspectors And Detectives
- 392 STATISTICAL, ADMINISTRATIVE AND RELATED ASSOCIATE PROFESSIONALS**
- 3921 Statistical, Mathematical And Related Associate Professionals
- 3922 Administrative And Related Associate Professionals
- 393 SOCIAL WORK ASSOCIATE PROFESSIONALS.**
- 3930 Social Work Associate Professionals
- 394 PHILOLOGISTS, TRANSLATORS AND INTERPRETERS**
- 3940 Philologists, Translators And Interpreters
- 395 ARTISTIC, ENTERTAINMENT AND SPORTS ASSOCIATE PROFESSIONALS**
- 3951 Decorators And Commercial Designers
- 3952 Radio And Television Announcers And Related Associate Professionals
- 3953 Street, Night-club And Related Musicians, Singers And Dancers
- 3954 Clowns, Magicians, Acrobats And Related Associate Professionals
- 3955 Animal/Bird Keepers And Trainers
- 3956 Athletes, Sportspersons And Related Associate Professionals
- 396 RELIGIOUS ASSOCIATE PROFESSIONALS**
- 3960 Religious Associate Professionals

**MAJOR GROUP 4  
CLERICAL WORKERS**

**41 OFFICE CLERKS**

**411 SECRETARIES AND KEYBOARD-OPERATING CLERKS**

- 4111 Secretaries And Verbatim Reporters
- 4112 Word-processor And Related Operators
- 4113 Data Entry Operators

**412 ADMINISTRATIVE CLERKS**

- 4120 Administrative Clerks

**413 ACCOUNTING AND FINANCE CLERKS**

- 4130 Accounting And Finance Clerks

**414 STATISTICAL CLERKS AND COMPUTER OPERATORS**

- 4141 Statistical Clerks
- 4142 Computer Operators

**415 MATERIAL-RECORDING CLERKS**

- 4151 Stock Clerks
- 4152 Production Clerks

**42 CUSTOMER SERVICES CLERKS**

**421 CASHIERS, TELLERS AND RELATED CLERKS**

- 4211 Cashiers And Ticket Clerks
- 4212 Tellers And Other Counter Clerks
- 4213 Pawnbrokers And Moneylenders
- 4219 Cashiers And Related Clerks Not Elsewhere Classified

**422 CLIENT INFORMATION CLERKS**

- 4221 Travel Agency And Related Clerks
- 4222 Receptionists And Information Clerks
- 4223 Telephone Operators
- 4229 Client Information Clerks Not Elsewhere Classified

**43 MAIL DISTRIBUTION CLERKS**

**430 MAIL DISTRIBUTION CLERKS**

- 4300 Mail Distribution Clerks

**44 TRANSPORT CLERKS**

**440 TRANSPORT CLERKS**

- 4400 Transport Clerks

**49 CLERICAL WORKERS NOT ELSEWHERE CLASSIFIED**

**490 CLERICAL WORKERS NOT ELSEWHERE CLASSIFIED**

- 4900 Clerical Workers Not Elsewhere Classified

**MAJOR GROUP 5**

**SERVICE WORKERS AND SHOP AND MARKET SALES WORKERS**

**51 PERSONAL AND PROTECTIVE SERVICES WORKERS**

**511 TRAVEL ATTENDANTS AND RELATED WORKERS**

- 5111 Travel Attendants And Travel Stewards
- 5112 Transport Conductors And Related Workers

- 5113 Travel Guides
- 512 HOUSEKEEPING AND CATERING SERVICES WORKERS**
- 5121 Housekeepers And Related Workers
- 5122 Cooks
- 5123 Waiters And Bartenders
- 513 PERSONAL CARE AND RELATED WORKERS**
- 5131 Hairdressers, Barbers, Beauticians And Related Workers
- 5132 Undertakers And Embalmers
- 5139 Personal Care And Household Service Workers Not Elsewhere Classified
- 514 PROTECTIVE SERVICE AND RELATED WORKERS**
- 5141 Fire Fighters
- 5142 Police Officers
- 5143 Prison Guards
- 5144 Private Security Guards
- 5145 Private Detectives
- 5149 Protective Service And Related Workers Not Elsewhere Classified
- 515 ASTROLOGERS, FORTUNE TELLERS AND RELATED WORKERS**
- 5150 Astrologers, Fortune Tellers And Related Workers
  
- 52 SALES WORKERS, DEMONSTRATORS AND MODELS**
  
- 521 SHOP SALES WORKERS AND DEMONSTRATORS**
- 5210 Shop Sales Workers And Demonstrators
- 522 STALL AND MARKET SALES WORKERS**
- 5220 Stall And Market Sales Workers
- 523 FASHION AND OTHER MODELS**
- 5230 Fashion And Other Models

## **MAJOR GROUP 6**

### **SKILLED AGRICULTURAL AND FISHERY WORKERS**

#### **61 AGRICULTURAL AND RELATED WORKERS**

- 611 MIXED FARMING WORKERS**
- 6111 Mixed Crop Growers (No Husbandry)
- 6112 Mixed Product Farmers (Crops And Husbandry)
- 612 PLANTATION WORKERS**
- 6121 Rubber Plantation Workers
- 6122 Oil Palm Plantation Workers
- 6129 Other Plantation Workers
- 613 SPECIALISED FARMING WORKERS**
- 6131 Field Crop And Vegetable Farm Workers
- 6132 Tree And Shrub Crop Farm Workers
- 6133 Horticultural And Nursery Farm Workers
- 6134 Livestock And Dairy Farm Workers
- 6135 Poultry Farm Workers
- 6136 Apiary And Sericulture Workers
- 6137 Skilled Mixed Animal Husbandry Farm Workers
- 614 FORESTRY WORKERS AND LOGGERS**
- 6141 Forestry Workers And Loggers
- 6142 Charcoal Burners And Related Workers

## **62 FISHERY WORKERS, HUNTERS AND TRAPPERS AND GATHERERS**

### **621 FISHERY WORKERS**

- 6211 Aquatic Life Cultivation Workers
- 6212 Inland And Coastal Water Fishery Workers
- 6213 Deep-sea Fishery Workers

### **622 HUNTERS AND TRAPPERS AND GATHERERS**

- 6221 Hunters And Trappers
- 6222 Gatherers Of Wild Fruits, Herbs And Vegetables

## **MAJOR GROUP 7**

## **CRAFT AND RELATED TRADES WORKERS**

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### **71 EXTRACTION AND CONSTRUCTION TRADES WORKERS**

#### **711 MINERS, SHOTFIRERS, STONE CUTTERS AND CARVERS**

- 7111 Miners And Quarry Workers
- 7112 Stone Splitters, Cutters And Carvers

#### **712 BUILDING FRAME AND RELATED TRADES WORKERS**

- 7121 Bricklayers And Stonemasons
- 7122 Concrete Placers, Concrete Finishers And Related Workers
- 7123 Carpenters And Joiners
- 7129 Building Frame And Related Trades Workers Not Elsewhere Classified

#### **713 BUILDING FINISHERS AND RELATED TRADES WORKERS**

- 7131 Roofers
- 7132 Floor Layers And Tile Setters
- 7133 Plasterers
- 7134 Insulation Workers
- 7135 Glaziers
- 7136 Plumbers And Pipe Fitters

#### **714 PAINTERS, BUILDING STRUCTURE CLEANERS AND RELATED TRADES WORKERS**

- 7141 Painters And Related Workers
- 7142 Varnishers And Related Painters
- 7143 Building Structure Cleaners

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

#### **721 METAL MOULDERS, WELDERS, SHEET METAL WORKERS, STRUCTURAL METAL PREPARERS AND RELATED TRADES WORKERS**

- 7211 Metal Moulders And Coremakers
- 7212 Welders And Flame Cutters
- 7213 Sheet Metal Workers
- 7214 Structural Metal Preparers And Erectors
- 7215 Riggers And Cable Splicers
- 7216 Underwater Workers

#### **722 BLACKSMITHS, TOOLMAKERS AND RELATED TRADES WORKERS**

- 7221 Blacksmiths, Hammersmiths And Forging-Press Workers
- 7222 Toolmakers And Related Workers
- 7223 Metal Grinders, Polishers And Tool Sharpeners

#### **723 MACHINERY MECHANICS AND FITTERS**

- 7230 Machinery Mechanics And Fitters

#### **724 ELECTRICAL AND ELECTRONIC EQUIPMENT MECHANICS AND FITTERS**

- 7241 Electrical Mechanics And Fitters

- 7242 Electronics Fitters, Mechanics And Servicers
- 7243 Telegraph And Telephone Installers And Servicers
- 7244 Electrical Line Installers, Repairers And Cable Jointers

### **73 PRECISION, PRINTING AND RELATED TRADES WORKERS**

#### **731 PRECISION WORKERS IN METAL AND RELATED MATERIALS**

- 7311 Precision Instrument Makers And Repairers
- 7312 Musical Instrument Makers And Tuners
- 7313 Jewellery And Precious-metal Workers

#### **732 POTTERS, GLASS MAKERS AND RELATED TRADES WORKERS**

- 7321 Potters And Related Workers
- 7322 Glass Makers, Cutters, Grinders And Finishers
- 7323 Glass Engravers And Etchers

#### **733 PRINTING AND RELATED TRADES WORKERS**

- 7331 Compositors, Typesetters And Related Workers
- 7332 Stereotypers And Electrotypers
- 7333 Bookbinders And Related Workers
- 7334 Printing And Photo Engravers And Etchers
- 7335 Silk Screen, Block And Textile Printers

### **74 FOOD PROCESSING, WOODWORKING, TEXTILE, LEATHER AND RELATED TRADES WORKERS**

#### **741 FOOD PROCESSING AND RELATED TRADES WORKERS**

- 7411 Meat And Fish Preparers
- 7412 Bakers, Pastry Cooks And Confectionery Makers
- 7413 Fruit, Vegetable And Related Preservers
- 7414 Food And Beverage Tasters And Graders
- 7415 Tobacco Preparers And Tobacco Products Makers

#### **742 WOOD TREATERS, CABINET MAKERS AND RELATED TRADES WORKERS**

- 7421 Wood Treaters
- 7422 Cabinet Makers And Related Workers
- 7423 Basketry Weavers, Brush Makers And Related Workers Not Elsewhere Classified

#### **743 TEXTILE, GARMENT AND RELATED TRADES WORKERS**

- 7431 Fibre Preparers
- 7432 Tailors, Dressmakers And Hatmakers
- 7433 Textile, Leather And Related Pattern-makers And Cutters
- 7434 Upholsterers And Related Workers
- 7439 Textile, Garment And Related Trades Workers Not Elsewhere Classified

#### **744 PELT, LEATHER AND SHOEMAKING TRADES WORKERS**

- 7441 Pelt Dressers, Tanners And Fellmongers
- 7442 Shoemakers And Related Workers

## **MAJOR GROUP 8**

### **PLANT AND MACHINE-OPERATORS AND ASSEMBLERS**

#### **81 STATIONARY PLANT AND RELATED OPERATORS**

##### **811 MINING AND MINERAL PROCESSING PLANT OPERATORS**

- 8111 Well Drillers, Borers And Related Workers
- 8112 Mineral Ore And Stone Processing Plant Operators

##### **812 METAL PROCESSING PLANT OPERATORS**

- 8121 Ore And Metal Furnace-operators
- 8122 Metal Melters, Casters And Rolling Mill Operators

8123 Metal Heat Treating Plant Operators  
8124 Metal Drawers And Extruders  
**813 GLASS, CERAMICS AND RELATED PLANT OPERATORS**  
8131 Glass And Ceramics Kiln And Related Machine-operators  
8139 Glass, Ceramics And Related Plant Operators Not Elsewhere Classified  
**814 WOOD PROCESSING AND PAPERMAKING PLANT OPERATORS**  
8141 Wood Processing Plant Operators  
8142 Paper Pulp Plant Operators  
8143 Papermaking Plant Operators  
**815 CHEMICAL PROCESSING PLANT OPERATORS**  
8151 Crushing, Grinding And Chemical Mixing Machinery Operators  
8152 Chemical Heat Treating Plant Operators  
8153 Chemical Filtering And Separating Equipment Operators  
8154 Chemical Still And Reactor Operators (Except Petroleum And Natural Gas)  
8155 Petroleum And Natural Gas Refining Plant Operators  
8159 Chemical Processing Plant Operators Not Elsewhere Classified  
**816 POWER GENERATING AND RELATED PLANT OPERATORS**  
8161 Power Generating Plant Operators  
8162 Steam Engine And Boiler Operators  
8169 Incinerator, Water Treatment And Related Plant Operators Not Elsewhere Classified  
**817 AUTOMATED ASSEMBLY LINE AND INDUSTRIAL ROBOT OPERATORS**  
8170 Automated Assembly Line And Industrial Robot Operators

## **82 MACHINE-OPERATORS AND ASSEMBLERS**

**821 METAL AND MINERAL PRODUCTS MACHINE-OPERATORS**  
8211 Machine-tool Setter-operators  
8212 Cement And Other Mineral Products Machine-operators  
**822 CHEMICAL PRODUCTS MACHINE-OPERATORS**  
8221 Pharmaceutical And Toiletry Products Machine-operators  
8222 Metal Finishing, Plating And Coating Machine-operators  
8223 Photographic Products Machine-operators  
8229 Chemical Products Machine-operators Not Elsewhere Classified  
**823 RUBBER AND PLASTIC PRODUCTS MACHINE-OPERATORS**  
8231 Rubber Products Machine-operators  
8232 Plastic Products Machine-operators  
**824 WOOD PRODUCTS MACHINE-OPERATORS**  
8240 Wood Products Machine-operators  
**825 PRINTING, BINDING AND PAPER PRODUCTS MACHINE-OPERATORS**  
8251 Printing Machine-operators  
8252 Bookbinding Machine-operators  
8253 Paper Products Machine-operators  
**826 TEXTILE PRODUCTS MACHINE-OPERATORS**  
8261 Spinning And Winding Machine-operators  
8262 Weaving And Knitting Machine-operators  
8263 Sewing And Embroidering Machine-operators  
8264 Textile Bleaching, Dyeing And Cleaning Machine-operators  
8265 Leather Preparing Machine-operators  
8266 Shoemaking And Related Machine-operators  
8269 Textile And Leather Products Machine-operators Not Elsewhere Classified  
**827 FOOD AND RELATED PRODUCTS MACHINE-OPERATORS**  
8271 Meat And Fish Processing Machine-operators  
8272 Dairy Products Machine-operators  
8273 Grain And Spice Milling Machine-operators  
8274 Baked And Cereal Products Machine-operators

- 8275 Fruit, Vegetable And Nut Processing Machine-operators
- 8276 Sugar Processing And Refining Operators
- 8277 Brewers, Wine And Other Beverage Machine-operators
- 8278 Tobacco Products Machine-operators
- 8279 Food And Related Products Machine-operators Not Elsewhere Classified
- 828 ASSEMBLERS**
- 8281 Mechanical Machinery Assemblers
- 8282 Electrical And Electronic Equipment Assemblers
- 8283 Leather, Metal, Rubber And Plastic Products Assemblers
- 8289 Other Assemblers Not Elsewhere Classified
- 829 MACHINE-OPERATORS NOT ELSEWHERE CLASSIFIED**
- 8290 Machine-operators Not Elsewhere Classified

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

#### **831 RAILWAY ENGINE DRIVERS AND RELATED WORKERS**

- 8311 Railway Engine And LRT Train Drivers
- 8312 Railway Brakers And Related Workers

#### **832 MOTOR VEHICLE DRIVERS**

- 8321 Motorcycle Drivers
- 8322 Car, Taxi And Light Goods Vehicle Drivers
- 8323 Bus, Tram And Related Drivers
- 8324 Heavy Truck And Lorry Drivers

#### **833 AGRICULTURAL AND OTHER MOBILE PLANT OPERATORS**

- 8331 Motorised Farm And Forestry Plant Operators
- 8332 Earth-Moving And Related Machinery Operators
- 8333 Crane, Hoist And Related Equipment Operators
- 8334 Lifting Truck Operators

#### **834 SHIP'S DECK CREWS AND RELATED WORKERS**

- 8340 Ship's Deck Crews And Related Workers

## **MAJOR GROUP 9**

### **ELEMENTARY OCCUPATIONS**

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#### **91 SALES AND SERVICES ELEMENTARY OCCUPATIONS**

##### **911 STREET VENDORS AND RELATED WORKERS**

- 9110 Street Vendors And Related Workers

##### **912 DOMESTIC AND RELATED HELPERS, CLEANERS AND LAUNDERERS**

- 9121 Domestic Helpers And Cleaners
- 9122 Helpers And Cleaners In Offices, Hotels And Related Establishments
- 9123 Laundry And Dry Cleaning Workers

##### **913 BUILDING CARETAKERS, WINDOW AND RELATED CLEANERS**

- 9131 Building Caretakers
- 9132 Vehicle, Window And Related Cleaners

##### **914 GARBAGE COLLECTORS AND RELATED WORKERS**

- 9141 Garbage Collectors
- 9142 Sweepers And Related Workers

#### **92 MESSENGERS, PORTERS, ATTENDANTS AND RELATED WORKERS**

##### **920 MESSENGERS, PORTERS, ATTENDANTS AND RELATED WORKERS**

- 9201 Messengers And Porters
- 9202 Attendants
- 9203 Watchmen, Doorkeepers And Related Workers
- 9204 Vending Machine-operators, Meter Readers And Related Workers

**93 LABOURERS AND RELATED WORKERS**

**931 AGRICULTURAL AND FISHERY LABOURERS AND RELATED WORKERS**

9311 Agricultural Farmhands And Labourers

9312 Landscape, Park And Garden Maintenance Workers

9319 Agricultural And Fishery Labourers And Related Workers Not Elsewhere Classified

**932 MANUFACTURING LABOURERS AND RELATED WORKERS**

9321 Rubber Processing Workers

9329 Manufacturing Labourers And Related Workers Not Elsewhere Classified

**933 MINING AND CONSTRUCTION LABOURERS AND RELATED WORKERS**

9331 Mining And Quarrying Labourers

9332 Construction And Maintenance Labourers

**934 TRANSPORT LABOURERS AND RELATED WORKERS**

9341 Material And Freight Handling Workers

9342 Pedal Vehicle Drivers/Trishaw Pedallers

9343 Drivers Of Animal-drawn Vehicles And Machinery

**MAJOR GROUP 0**

**ARMED FORCES**

**01 ARMED FORCES**

**01 ARMED FORCES**

0110 Armed Forces

# **MAJOR GROUP 1: LEGISLATORS, SENIOR OFFICIALS AND MANAGERS**

Legislators, senior officials and managers determine, formulate, direct or advise on government policies as well as those of special-interest organisations, formulate laws, public rules and regulations, represent governments and act on their behalf, oversee the interpretation and implementation of government policies and legislation, or plan, direct, and co-ordinate the policies and activities of enterprises or organisations or their internal departments or sections. Reference to skill level has not been made in defining the scope of this major group.

**This major group consists of the following sub-major groups:**

- 11 LEGISLATORS AND SENIOR OFFICIALS**
- 12 DIRECTORS AND SPECIALISED MANAGERS**
- 13 GENERAL MANAGERS (MEDIUM/SMALL ENTERPRISES)**

## **11 LEGISLATORS AND SENIOR OFFICIALS**

Legislators and senior officials determine, formulate or advise on and direct government policies, make, ratify, amend and repeal laws, public rules and regulations, represent governments and act on their behalf, oversee the interpretation and implementation of government policies and legislation, or carry out similar tasks on behalf of special-interest organisations.

**This sub-major group consists of the following minor groups:**

- 111 LEGISLATORS**
- 112 SENIOR GOVERNMENT AND STATUTORY BOARD OFFICIALS**
- 113 TRADITIONAL CHIEFS AND HEADS OF VILLAGES**
- 114 SENIOR OFFICIALS OF SPECIAL-INTEREST ORGANISATIONS**

### **111 LEGISLATORS**

Legislators determine, formulate and direct policies of national, state, regional or local governments, and make, ratify, amend or repeal laws, public rules and regulations.

#### **1110 LEGISLATORS**

Legislators determine, formulate and direct policies of national, state, regional or local governments, and make, ratify, amend or repeal laws, public rules and regulations.

**Tasks include:**

- \* presiding over or participating in the proceedings of legislative bodies and administrative councils of national, state, regional or local governments or legislative assemblies;
- \* determining, formulating and directing policies of national, state, regional or local governments;
- \* making, ratifying, amending or repealing laws, public rules and regulations within the framework of a Constitution determining their powers and fields of jurisdiction;
- \* serving on government administrative boards or official committees;

- \* promoting the interests of the constituencies which they represent;
- \* directing senior administrators and officials of government departments and agencies in the interpretation and implementation of government policies;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*11101 Member of parliament*

*11102 Minister*

*11103 State assemblyman*

*11104 Mayor/Datuk bandar*

## **112 SENIOR GOVERNMENT AND STATUTORY BOARD OFFICIALS**

Senior government and statutory board officials advise governments on policy matters, oversee the interpretation and implementation of government policies and legislation or represent their country abroad.

### **1120 SENIOR GOVERNMENT AND STATUTORY BOARD OFFICIALS**

Senior government and statutory board officials advise governments on policy matters, oversee the interpretation and implementation of government policies and legislation by government departments and agencies or represent their country abroad and act on its behalf.

**Tasks include:**

- \* advising national, state, regional or local governments on policy matters;
- \* advising on the preparation of government budgets, laws and regulations, including amendments;
- \* interpreting and implementing government policies and legislation by government departments and agencies;
- \* representing their country abroad;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*11201 Chief secretary, government*

*11202 Senior official, statutory board*

*11203 Ambassador*

*11204 Inspector-general, police*

## **113 TRADITIONAL CHIEFS AND HEADS OF VILLAGES**

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

## **1130 TRADITIONAL CHIEFS AND HEADS OF VILLAGES**

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

### **Tasks include:**

- \* allocating the use of communal land among households in the community or village;
- \* settling disputes between members of the community or village;
- \* disciplining members of the community or village for violation of rules and customs;
- \* performing ceremonial duties in connection with births, marriages, deaths, harvests and other traditional feasts;
- \* representing the community or village on local or regional councils;
- \* informing the community or village about government rules and regulations;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

*11301 Penghulu*

*11302 Ketua Kampung/Chief, village*

## **114 SENIOR OFFICIALS OF SPECIAL-INTEREST ORGANISATIONS**

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

### **1141 SENIOR OFFICIALS OF POLITICAL-PARTY ORGANISATIONS**

Senior officials of political-party organisations determine and formulate policies, rules and regulations of political-party organisations, direct their application, represent these organisations and act on their behalf.

#### **Tasks include:**

- \* determining and formulating the political-party's policies, rules and regulations;
- \* negotiating on behalf of the political party;
- \* planning and organising campaigns for the election of its candidates to political offices;
- \* planning and organising campaigns to recruit and educate political party members;
- \* planning, organising and directing the implementation of the political-party's policies, rules and regulations;
- \* performing related tasks;
- \* supervising other workers.

#### **Example of the occupations classified here: 11410**

*Senior official, political party organisation*

## **1142 SENIOR OFFICIALS OF EMPLOYERS', WORKERS' AND OTHER ECONOMIC-INTEREST ORGANISATIONS**

Senior officials of employers', workers' and other economic-interest organisations determine and formulate policies, rules and regulations of their respective organisations, direct their application, represent these organisations and act on their behalf.

### **Tasks include:**

- \* deciding and formulating the organisation's policies, rules and regulations;
- \* negotiating on behalf of the organisation;
- \* promoting the interests of the organisation before the legislature, government or general public;
- \* planning and organising campaigns to recruit and educate members;
- \* planning, organising and directing the implementation of the organisation's policies, rules and regulations;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

*11421 Senior official, employers' organisation*

*11422 Senior official, workers' organisation*

*11423 Senior official, other economic-interest organisation*

## **1143 SENIOR OFFICIALS OF HUMANITARIAN AND OTHER SPECIAL-INTEREST ORGANISATIONS**

Senior officials of humanitarian and other special-interest organisations determine and formulate policies, rules and regulations of humanitarian organisations, sports associations or other special-interest organisations, direct their application, represent these organisations and act on their behalf.

### **Tasks include:**

- \* determining and formulating the organisation's policies, rules and regulations;
- \* negotiating on behalf of the organisation and relevant special interest groups;
- \* promoting the interests of the organisation before the legislature, government or general public;
- \* planning and organising campaigns to recruit and educate members;
- \* planning, organising and directing the implementation of the organisation's policies, rules and regulations;
- \* performing related tasks;
- \* supervising other workers.

### **Example of the occupations classified here:**

*11430 Senior official, humanitarian/special-interest organisation*

## **12 DIRECTORS AND SPECIALISED MANAGERS**

Directors and specialised managers formulate policies, plan, direct, control and co-ordinate the activities of enterprises and organisations through departmental managers and executive subordinates.

**This sub-major group consists of the following minor groups:**

- 121 COMPANY DIRECTORS**
- 122 PRODUCTION AND OPERATION DEPARTMENT MANAGERS**
- 123 SPECIALISED DEPARTMENT MANAGERS**

### **121 COMPANY DIRECTORS**

Company directors head enterprises or organisations (except special-interest organisations) and, with the help of at least two (2) other managers, formulate policies and plan, direct, control and co-ordinate the activities of enterprises or organisations, usually within the guidelines set up by a board of directors or a governing body to whom they are answerable for the operations undertaken and results obtained.

#### **1210 COMPANY DIRECTORS**

Company directors head enterprises or organisations (except special-interest organisations) and, with the help of at least two (2) other managers, formulate policies and plan, direct, control and co-ordinate the general functioning of the enterprise or organisation, usually within the guidelines set up by a board of directors or a governing body, to whom they are answerable for the operations undertaken and results obtained.

#### **Tasks include:**

- \* formulating policies of the enterprise or organisation;
- \* planning, directing, controlling and co-ordinating the general functioning of the enterprise or organisation;
- \* determining and directing a particular policy, through consultation with subordinate managers;
- \* reviewing the operations and results of the enterprise or organisation and reporting to governing bodies;
- \* representing the enterprise or organisation in its dealings with outside bodies, including government or other authorities;
- \* performing related tasks;
- \* supervising other workers.

#### **Examples of the occupations classified here:**

- 12101 Director-general, enterprise*
- 12102 Principal, university*

### **122 PRODUCTION AND OPERATION DEPARTMENT MANAGERS**

Production and operation department managers of enterprises or organisations requiring a total of three or more managers, plan, direct and co-ordinate activities concerning the production of goods or the provision of services, under the broad guidance of directors and chief executives and in consultation with managers of other departments or sections.

## **1221 PRODUCTION AND OPERATION DEPARTMENT MANAGERS OF GOODS**

Production and operation department managers of goods plan, direct and co-ordinate activities concerning the production of goods in agriculture, fishing, forestry, hunting, manufacturing, construction and mining/quarry, under the broad guidance of directors and chief executives and in consultation with managers of other departments or sections.

### **Tasks include:**

- \* planning, directing and co-ordinating activities concerning the production of goods;
- \* ensuring the efficient use of resources and the fulfilment of production quotas;
- \* planning and directing daily operations;
- \* controlling expenditure;
- \* establishing and directing operational and administrative procedures;
- \* overseeing the application of work safety and related procedures;
- \* overseeing the selection, training and performance of staff;
- \* representing the department in its dealings with other parts of the enterprise or with outside bodies;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

*72277 Department manager, production and operation/agriculture*

*12212 Department manager, production and operation/fishing, forestry and hunting*

*12213 Department manager, production and operation/manufacturing*

*12214 Department manager, production and operation/construction*

*12215 Department manager, production and operation/mining and quarry*

## **1222 PRODUCTION AND OPERATION DEPARTMENT MANAGERS IN TRANSPORT, STORAGE AND COMMUNICATIONS**

Production and operation department managers in transport, storage and communications plan, direct and co-ordinate activities concerning the provision of relevant services, under the broad guidance of directors and chief executives and in consultation with managers of other departments or sections.

### **Tasks include:**

- \* planning, directing and co-ordinating activities concerning the provision of relevant services;
- \* ensuring the efficient use of resources and the fulfilment of service quota;
- \* planning and directing daily operations;
- \* controlling expenditure;
- \* establishing and directing operational and administrative procedures;
- \* overseeing the application of work safety and related procedures;

- \* overseeing the selection, training and performance of staff;
- \* representing the department in its dealings with other parts of the enterprise or with outside bodies;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 12221 Department manager, production and operation/transport*
- 12222 Department manager, production and operation/storage*
- 12223 Department manager, production and operation/communications*

**1223 PRODUCTION AND OPERATION DEPARTMENT MANAGERS IN LODGING AND CATERING**

Production and operation department managers in lodging and catering plan, direct and co-ordinate activities concerning the provision of accommodation, catering and related services, under the broad guidance of directors and chief executives and in consultation with managers of other departments or sections.

**Tasks include:**

- \* planning, directing and co-ordinating activities concerning the provision of accommodation, catering and related services;
- \* ensuring the efficient use of resources and the fulfilment of the schedules;
- \* planning and directing daily operations;
- \* controlling expenditure;
- \* establishing and directing operational and administrative procedures;
- \* overseeing the application of work safety and related procedures;
- \* overseeing the selection, training and performance of staff;
- \* representing the department in its dealings with other parts of the enterprise or with outside bodies;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 12231 Department manager, production and operation/hotel*
- 12232 Department manager, production and operation/restaurant*

**1224 PRODUCTION AND OPERATION DEPARTMENT MANAGERS IN WHOLESALE AND RETAIL TRADE**

Production and operation department managers in wholesale and retail trade plan, direct and co-ordinate activities concerning trade, under the broad guidance of directors and chief executives and in consultation with managers of other departments or sections.

**Tasks include:**

- \* planning, directing and co-ordinating activities concerning trade carried out by the enterprise;
- \* ensuring the efficient use of resources and the fulfilment of trade quotas;
- \* planning and directing daily operations;
- \* controlling expenditure;
- \* establishing and directing operational and administrative procedures;
- \* overseeing the application of work safety and related procedures;
- \* overseeing the selection, training and performance of staff;
- \* representing the department in its dealings with other parts of the enterprise or with outside bodies;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*12241 Department manager, production and operation/wholesale trade*

*12242 Department manager, production and operation/retail trade*

**1225 PRODUCTION AND OPERATION DEPARTMENT MANAGERS IN BUSINESS SERVICES**

Production and operation department managers in business services plan, direct and co-ordinate activities concerning the provision of external business services, under the broad guidance of directors and chief executives and in consultation with managers of other departments or sections.

**Tasks include:**

- \* planning, directing and co-ordinating activities concerning the provision of external business services such as banking, insurance, real estate, market research, accounting, architecture, engineering, building cleaning, technical testing and analysis, advertising or packaging;
- \* ensuring the efficient use of resources and the fulfilment of the schedules;
- \* planning and directing daily operations;
- \* controlling expenditure;
- \* establishing and directing operational and administrative procedures;
- \* overseeing the application of work safety and related procedures;
- \* overseeing the selection, training and performance of staff;
- \* representing the department in its dealings with other parts of the enterprise or with outside bodies;
- \* performing related tasks;
- \* supervising other workers.

**Example of the occupations classified here:**

*12250 Department manager, production and operation/business services*

## **1226 PRODUCTION AND OPERATION DEPARTMENT MANAGERS IN PERSONAL CARE, CLEANING AND RELATED SERVICES**

Production and operation department managers in personal care, cleaning and related services plan, direct and co-ordinate activities concerning the provision of relevant services, under the broad guidance of directors and chief executives and in consultation with managers of other departments or sections.

### **Tasks include:**

- \* planning, directing and co-ordinating activities concerning the provision of personal care, cleaning and related services;
- \* ensuring the efficient use of resources and the fulfilment of the schedules;
- \* planning and directing daily operations;
- \* controlling expenditure;
- \* establishing and directing operational and administrative procedures;
- \* overseeing the application of work safety and related procedures;
- \* overseeing the selection, training and performance of staff;
- \* representing the department in its dealings with other parts of the enterprise or with outside bodies;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

*12261 Department manager, production and operation/cleaning*

*12262 Department manager, production and operation/personal care*

## **1229 PRODUCTION AND OPERATION DEPARTMENT MANAGERS NOT ELSEWHERE CLASSIFIED**

This unit group covers department managers not classified elsewhere in Minor Group 122: Production And Operation Department Managers.

Here should be classified those who plan, direct and co-ordinate activities of the enterprise or organisation concerning government, administrative and other operations, public or private education, health and social services, recreational, cultural and sporting events, and operations of extra-territorial organisations and bodies.

### **Tasks include:**

- \* planning, directing and co-ordinating government operations concerning public service activities;
- \* planning, directing and co-ordinating activities concerning public and private education;
- \* planning, directing and co-ordinating activities concerning health and social services;
- \* planning, directing and co-ordinating activities concerning recreational, cultural and sporting operations and events;

- \* ensuring the efficient use of resources and the fulfilment of the schedules;
- \* planning and directing daily operations;
- \* controlling expenditure;
- \* establishing and directing operational and administrative procedures;
- \* overseeing the application of work safety and related procedures;
- \* overseeing the selection, training and performance of staff;
- \* representing the department in its dealings with other parts of the enterprise or with outside bodies;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*12291 Department manager, production and operation/education*

*12292 Director, musical*

*12293 Head, university faculty*

**123 SPECIALISED DEPARTMENT MANAGERS**

Specialised department managers of enterprises or organisations requiring a total of three or more managers, plan, direct and co-ordinate particular activities, under the broad guidance of the company directors and in consultation with managers of other departments or sections.

**1231 FINANCE AND ADMINISTRATION DEPARTMENT MANAGERS**

Finance and administration managers plan, direct and control the internal administration and finance of a public or private enterprise or organisation, under the broad guidance of the company directors and in consultation with managers of other departments or sections.

**Tasks include:**

- \* planning, directing, controlling and co-ordinating the internal administration and financial operations of the enterprise or organisation;
- \* assessing the financial situation of the enterprise or organisation, preparing budgets and overseeing various financial operations;
- \* controlling expenditure and ensuring efficient use of resources;
- \* establishing and directing operational and administrative procedures;
- \* planning and directing daily operations;
- \* overseeing the selection, training and performance of staff;
- \* representing the department in its dealing with other parts of the organisation or with outside bodies;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*12311 Department manager, administration*

*12312 Department manager, accounting*

**1232 PERSONNEL AND INDUSTRIAL RELATIONS DEPARTMENT MANAGERS**

Personnel and industrial relations department managers plan, direct and co-ordinate policies concerning personnel and the industrial relations activities of the enterprise or organisation, under the broad guidance of the company directors and in consultation with managers of other departments or sections.

**Tasks include:**

- \* planning, directing and co-ordinating policies concerning personnel and the industrial relations activities of the enterprise or organisation;
- \* planning and organising procedures for recruitment, training, promotion, determination of wage structures and negotiations about wages, liaison and consultation with workers, and related personnel matters;
- \* overseeing occupational health and safety and related programmes and activities, with the participation of all concerned;
- \* controlling expenditure and ensuring the efficient use of resources;
- \* establishing and directing operational and administrative procedures;
- \* planning and directing daily operations;
- \* overseeing the selection, training and performance of staff;
- \* overseeing the maintenance of personnel records and various human resource information system requirement;
- \* representing the department in its dealings with other parts of the organisation or with outside bodies;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*12321 Department manager, human resource*

*12322 Department manager, industrial relations*

*12323 Department manager, occupational health and safety*

**1233 SALES AND MARKETING DEPARTMENT MANAGERS**

Sales and marketing department managers plan, direct and co-ordinate the sales and marketing activities of the enterprise or organisation, under the broad guidance of the company directors and in consultation with managers of other departments or sections.

**Tasks include:**

- \* planning, directing and co-ordinating the sales and marketing activities of the enterprise or organisation;

- \* planning and organising special sales and marketing programmes based on sales records and market assessments;
- \* planning, administering and reviewing customer services and after-sales services and maintaining sound customer relations;
- \* determining price lists, discount and delivery terms, credit arrangements, product mix, geographical sales areas, sales promotion budgets, sales methods, customer service standards, special incentives and special campaigns;
- \* directing merchandising methods and distribution policy by co-ordinating the work of salespersons or organising agents and distributors;
- \* controlling expenditure and ensuring the efficient use of resources;
- \* monitoring customer service, invoicing, payments and administration costs;
- \* establishing and directing operational and administrative procedures;
- \* planning and directing daily operations;
- \* overseeing the selection, training and performance of staff;
- \* representing the department in its dealings with other parts of the organisation or with outside bodies;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

**12331** *Department manager, sales and marketing*

**12332** *Department manager, market research*

**1234 ADVERTISING AND PUBLIC RELATIONS DEPARTMENT MANAGERS**

Advertising and public relations department managers plan, direct and co-ordinate the advertising, public relations and public information activities of the enterprise or organisation, under the broad guidance of the company directors and in consultation with managers of other departments or sections.

**Tasks include:**

- \* planning, directing and co-ordinating the advertising and public relations activities of the enterprise or organisation;
- \* negotiating advertising contracts with officials of newspapers, radio and television stations, sports and cultural organisations and advertising agencies;
- \* planning and managing information programmes to inform legislators, the mass media and the general public about the plans, accomplishments and points of view of the enterprise or organisation;
- \* planning and managing fundraising activities for educational, humanitarian and other non profit-making organisations;
- \* controlling expenditure and ensuring the efficient use of resources;
- \* establishing and directing operational and administrative procedures;

- \* planning and directing daily operations;
- \* overseeing the selection, training and performance of staff;
- \* representing the department in its dealings with other parts of the organisation or with outside bodies;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*12341 Department manager, advertising*

*12342 Department manager, public relations*

**1235 SUPPLY AND DISTRIBUTION DEPARTMENT MANAGERS**

Supply and distribution department managers plan, direct and co-ordinate the supply and distribution activities of the enterprise or organisation, under the broad guidance of the company directors and in consultation with managers of other departments or sections.

**Tasks include:**

- \* planning, directing and co-ordinating the supply, storage and distribution activities of the enterprise or organisation;
- \* negotiating purchase contracts, agreeing a suitable price with suppliers and ensuring the quality of the goods purchased;
- \* planning and installing systems for inventory control;
- \* controlling expenditure and ensuring the efficient use of resources;
- \* establishing and directing operational and administrative procedures;
- \* planning and directing daily operations;
- \* overseeing the selection, training and performance of staff;
- \* representing the department in its dealings with other parts of the organisation or with outside bodies;
- \* performing related tasks;
- \* supervising other workers.

**Example of the occupations classified here:**

*12350 Department manager, purchasing*

**1236 INFORMATION TECHNOLOGY DEPARTMENT MANAGERS**

Information technology department managers plan, direct and co-ordinate the acquisition, development, maintenance and use of computer and telecommunications systems within organisations. They usually work under the broad guidance of the company directors and in consultation with managers of other departments or sections.

**Tasks include:**

- \* analysing information needs and specifying technology to meet those needs;
- \* directing the formulation of information technology strategies, policies and plans;
- \* directing the selection and installation of information technology and the provision of user training;
- \* directing information technology operations, integrating computer hardware, operating systems, communications, software application and data processing; • •
- \* setting priorities between system developments, maintenance and operations;
- \* controlling the security of the information technology systems;
- \* managing information technology development projects to ensure that the projects are completed on schedule, within budget and to the level of quality in accordance with objectives;
- \* controlling the budget and expenditure of the department or organisation;
- \* overseeing the selection, training and performance of staff;
- \* representing the department in its dealings with other parts of the organisation as with outside bodies;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*12361 Manager, information technology*

*12362 Manager, computer services*

**1237 RESEARCH AND DEVELOPMENT DEPARTMENT MANAGERS**

Research and development managers plan, direct and co-ordinate the research and development activities of the enterprise or organisation. They usually work under the broad guidance of the company directors and in consultation with managers of other departments or sections.

**Tasks include:**

- \* planning, directing and co-ordinating research and development activities, in-house or commissioned from external research organisations;
- \* planning the overall research and development programme of the enterprise or organisation, specifying goals and budgetary requirements;
- \* controlling expenditure and ensuring the efficient use of resources;
- \* establishing and directing operational and administrative procedures;
- \* planning and directing daily operations;
- \* overseeing the selection, training and performance of staff;
- \* representing the department in its dealings with other parts of the organisation or with outside bodies;
- \* performing related tasks;
- \* supervising other workers.

**Example of the occupations classified here:**

*12370 Department manager, research and development*

**1239 SPECIALISED DEPARTMENT MANAGERS NOT ELSEWHERE CLASSIFIED**

Workers in this group plan, direct, control and co-ordinate the activities and resources of enterprise or organisation not elsewhere classified in Minor Group 123: Specialised Department Managers. As such, they perform other managerial activities not elsewhere classified.

**13 GENERAL MANAGERS (MEDIUM/SMALL ENTERPRISES)**

General managers head various small or medium-sized business undertakings which they manage on their own behalf, or on behalf of the proprietor, with the assistance of no more than one other manager and some non-managerial help.

**This sub-major group consists of the following minor group:**

**130 GENERAL MANAGERS**

**130 GENERAL MANAGERS**

General managers head various small or medium-sized business undertakings which they manage on their own behalf, or on behalf of the proprietor, with the assistance of no more than one other manager and some non-managerial help.

**1301 GENERAL MANAGERS IN AGRICULTURE, HUNTING, FORESTRY AND FISHING**

General managers in agriculture, hunting, forestry and fishing head small or medium-sized agricultural farms or hunting, forestry or fishing businesses and, on their own, or on behalf of the proprietor, plan direct and co-ordinate the activities of the business, with the assistance of no more than one other manager and some non-managerial help.

**Tasks include:**

- \* planning and implementing policies;
- \* making budgetary estimates;
- \* negotiating with suppliers, customers and other organisations;
- \* planning and controlling the use of resources and hiring workers;
- \* managing daily operations;
- \* reporting to owners, if any;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*13011 General manager, agriculture*

*13012 General manager, fishing*

*13013 General manager, forestry*

*13014 General manager, hunting*

**1302 GENERAL MANAGERS IN MANUFACTURING**

General managers in manufacturing head small or medium-sized manufacturing businesses and, on their own, or on behalf of the proprietor, plan direct and co-ordinate the activities of the business, with the assistance of no more than one other manager and some non-managerial help.

**Tasks include:**

- \* planning and implementing policies;
- \* making budgetary estimates;
- \* negotiating with suppliers, customers and other organisations;
- \* planning and controlling the use of resources and hiring workers;
- \* managing daily operations;
- \* reporting to owners, if any;
- \* performing related tasks;
- \* supervising other workers.

**Example of the occupations classified here:**

*13020 General manager, manufacturing*

**1303 GENERAL MANAGERS IN CONSTRUCTION**

General managers in construction head small or medium-sized construction businesses and, on their own, or on behalf of the proprietor, plan direct and co-ordinate the activities of the business, with the assistance of no more than one other manager and some non-managerial help.

**Tasks include:**

- \* planning and implementing policies;
- \* making budgetary estimates;
- \* negotiating with suppliers, customers and other organisations;
- \* planning and controlling the use of resources and hiring workers;
- \* managing daily operations;
- \* reporting to owners, if any;
- \* performing related tasks;
- \* supervising other workers.

**Example of the occupations classified here:**

*13030 General manager, construction*

#### **1304 GENERAL MANAGERS IN WHOLESALE AND RETAIL TRADE**

General managers in wholesale and retail trade head small or medium-sized wholesale and retail businesses and, on their own, or on behalf of the proprietor, plan direct and co-ordinate the activities of the business, with the assistance of no more than one other manager and some non-managerial help.

**Tasks include:**

- \* planning and implementing policies;
- \* making budgetary estimates;
- \* negotiating with suppliers, customers and other organisations;
- \* planning and controlling the use of resources and hiring workers;
- \* managing daily operations;
- \* reporting to owners, if any;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*13041 General manager, wholesale trade*

*13042 General manager, retail trade*

#### **1305 GENERAL MANAGERS IN LODGING AND CATERING SERVICES**

General managers in lodging and catering services head small or medium-sized lodging and catering businesses and, on their own, or on behalf of the proprietor, plan direct and co-ordinate the activities of the business, with the assistance of no more than one other manager and some non-managerial help.

**Tasks include:**

- \* planning and implementing policies;
- \* making budgetary estimates;
- \* negotiating with suppliers, customers and other organisations;
- \* planning and controlling the use of resources and hiring workers;
- \* managing daily operations;
- \* reporting to owners, if any;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*13051 General manager, hotel*

*13052 General manager, restaurant*

*13053 General manager, discotheque*

## **1306 GENERAL MANAGERS IN TRANSPORT, STORAGE AND COMMUNICATIONS**

General managers in transport, storage and communications head small or medium-sized transport, storage and communications businesses and, on their own, or on behalf of the proprietor, plan direct and co-ordinate the activities of the business, with the assistance of no more than one other manager and some non-managerial help.

### **Tasks include:**

- \* planning and implementing policies;
- \* making budgetary estimates;
- \* negotiating with suppliers, customers and other organisations;
- \* planning and controlling the use of resources and hiring workers;
- \* managing daily operations;
- \* reporting to owners, if any;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

- 23061 General manager, transport*
- 13062 General manager, storage*
- 13063 General manager, communications*

## **1307 GENERAL MANAGERS IN BUSINESS SERVICES**

General managers in business services head small or medium-sized firms providing business services and, on their own, or on behalf of the proprietor, plan direct and co-ordinate the activities of the business, with the assistance of no more than one other manager and some non-managerial help.

### **Tasks include:**

- \* planning and implementing policies;
- \* making budgetary estimates;
- \* negotiating with suppliers, customers and other organisations;
- \* planning and controlling the use of resources and hiring workers;
- \* managing daily operations;
- \* reporting to owners, if any;
- \* performing related tasks;
- \* supervising other workers.

### **Example of the occupations classified here:**

- 13070 General manager, business services*

### **1308 GENERAL MANAGERS IN PERSONAL CARE, CLEANING AND RELATED SERVICES**

General managers in personal care, cleaning and related services head small or medium-sized businesses providing personal care, cleaning and related services and, on their own, or on behalf of the proprietor, plan direct and co-ordinate the activities of the business, with the assistance of no more than one other manager and some non-managerial help.

#### **Tasks include:**

- \* planning and implementing policies;
- \* making budgetary estimates;
- \* negotiating with suppliers, customers and other organisations;
- \* planning and controlling the use of resources and hiring workers;
- \* managing daily operations;
- \* reporting to owners, if any;
- \* performing related tasks;
- \* supervising other workers.

#### **Examples of the occupations classified here:**

*13081 General manager, personal care*

*13082 General manager, cleaning*

### **1309 GENERAL MANAGERS NOT ELSEWHERE CLASSIFIED**

This unit group covers general managers not elsewhere classified in Minor Group 130: General Managers.

Here could be classified those who head small or medium-sized businesses in the field of education, health or recreational, cultural or sporting activities and, on their own, or on behalf of the proprietor, plan direct and co-ordinate the activities of the business, with the assistance of no more than one other manager and some non-managerial help.

#### **Tasks include:**

- \* planning and implementing policies;
- \* making budgetary estimates;
- \* negotiating with suppliers, customers and other organisations;
- \* planning and controlling the use of resources and hiring workers;
- \* managing daily operations;
- \* reporting to owners, if any;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 13091 General manager, education*
- 13092 General manager, health*
- 13093 General manager, social work*
- 13094 General manager, cultural activities*
- 13095 General manager, recreation*
- 13096 General manager, maintenance*

## **MAJOR GROUP 2: PROFESSIONALS**

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

**This major group consists of the following sub-major groups:**

- 21 PHYSICAL, MATHEMATICAL AND ENGINEERING SCIENCE PROFESSIONALS**
- 22 LIFE SCIENCE AND HEALTH PROFESSIONALS**
- 23 TEACHING PROFESSIONALS**
- 24 BUSINESS PROFESSIONALS**
- 25 LEGAL PROFESSIONALS**
- 29 PROFESSIONALS NOT ELSEWHERE CLASSIFIED**

### **21 PHYSICAL, MATHEMATICAL AND ENGINEERING SCIENCE PROFESSIONALS**

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

**This sub-major group consists of the following minor groups:**

- 211 PHYSICAL SCIENCE PROFESSIONALS**
- 212 MATHEMATICIANS, STATISTICIANS AND RELATED PROFESSIONALS**
- 213 COMPUTING PROFESSIONALS**
- 214 ARCHITECTS, ENGINEERS AND RELATED PROFESSIONALS**

#### **211 PHYSICAL SCIENCE PROFESSIONALS**

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

##### **2111 PHYSICISTS AND ASTRONOMERS**

Physicists and astronomers conduct research, improve or develop concepts, theories and operational methods, or apply scientific knowledge relating to physics and astronomy in industrial, medical, military or other fields.

**Tasks include:**

- \* conducting research and improving or developing concepts, theories and operational methods related to physics and astronomy;
- \* conducting experiments, tests and analyses in fields such as mechanics, thermodynamics, optics, sonics, electricity, magnetism, electronics and nuclear physics, or astronomy;

- \* conducting experiments, tests and analyses of the structure and properties of matter in solid state and its behaviour under temperature, pressure, stress and other conditions;
- \* evaluating results of investigations and experiments and expressing conclusions, mainly using mathematical techniques and models;
- \* developing or improving industrial, medical, military and other practical applications of the principles and techniques of physics or astronomy;
- \* observing, analysing and interpreting celestial phenomena and developing methods and techniques to be used in fields such as navigation or space exploration;
- \* preparing scientific papers and reports;
- \* supervising and co-ordinating the work of technicians and technical officers;
- \* performing related tasks.

**Examples of the occupations classified here:**

- 21111** *Physicist*
- 21112** *Physicist, mechanics*
- 21113** *Physicist, light, heat and sound*
- 21114** *Physicist, electricity and magnetism*
- 21115** *Physicist, electronics*
- 21116** *Physicist, nuclear*
- 21117** *Astronomer*
- 21118** *Cosmologist*

**2112 METEOROLOGISTS**

Meteorologists conduct research, improve or develop concepts, theories and operational methods related to the composition, structure and dynamics of the atmosphere, and prepare detailed or long-term weather forecasts used in aviation, shipping, agriculture and other areas and for the information of the general public.

**Tasks include:**

- \* conducting research and improving or developing concepts, theories and operational methods related to the composition, structure and dynamics of the atmosphere;
- \* investigating direction and speed of air movements, pressures, temperatures, humidity and other phenomena such as cloud formation and precipitation, electrical disturbances or solar radiation;
- \* analysing and interpreting satellite photographs, remote sensing and other atmospheric phenomena and preparing weather maps and forecasts used in aviation, shipping, agriculture and other areas and for the information of the general public;
- \* preparing warnings relating to atmospheric phenomena such as storms or other hazards to life and property;
- \* studying climatic data and using statistical methods to determine and interpret climatic trends and predicting changes;
- \* reviewing observational networks and the dissemination of information;
- \* conducting experiments in haze dispersal, rain-making and other types of weather control;
- \* preparing scientific papers and reports;
- \* may participate in the development of computer modelling programmes;
- \* supervising the work of technicians and meteorological observers;
- \* performing related tasks.

**Examples of the occupations classified here:**

**21121** *Meteorologist*  
**21122** *Climatologist*  
**21123** *Forecaster, weather*

**2113 CHEMISTS**

Chemists conduct research, improve or develop concepts, theories and operational methods, or apply scientific knowledge relating to chemistry, mainly to test, develop and improve materials, and industrial products and processes.

**Tasks include:**

- \* conducting research and improving or developing concepts, theories and operational methods related to chemistry;
- \* conducting experiments, tests and analyses to investigate chemical composition and energy and chemical changes in various natural, artificial or synthetic substances, materials and products;
- \* evaluating results of investigations and experiments and deriving conclusions;
- \* managing and directing chemical quality control laboratories and chemical quality control or assurance, procedures and practices;
- \* managing and directing chemical laboratories, including verification, classification, assay and certification of products, process standards or specifications;
- \* developing practical applications of experimental and research findings;
- \* developing or improving pharmaceutical and other industrial materials, products and processes;
- \* developing and monitoring quality control procedures for manufacturers or users;
- \* preparing laboratory reports and scientific papers;
- \* supervising and training laboratory technicians;
- \* performing related tasks.

**Examples of the occupations classified here:**

**27737** *Chemist*  
**21132** *Chemist, organic*  
**21133** *Chemist, inorganic*  
**21134** *Chemist, physical*  
**21135** *Chemist, analytical*  
**21136** *Chemist, water purification*  
**21137** *Chemist, industrial*  
**21138** *Chemist, pharmaceutical*

**2114 GEOLOGISTS AND GEOPHYSICISTS**

Geologists and geophysicists conduct research, improve or develop concepts, theories and operational methods, or apply scientific knowledge relating to geology and geophysics in such fields as oil, gas and mineral exploitation, water conservation, civil engineering, telecommunications and navigation.

**Tasks include:**

- \* conducting research and improving or developing concepts, theories and operational methods related to geology and geophysics;
- \* studying composition and structure of the earth's crust, examining rocks, minerals, fossil remains, etc. to determine processes affecting the development of the earth, trace evolution and establish nature and chronology of geological formations;
- \* interpreting research data and preparing geological reports, maps, charts and diagrams;
- \* applying results of research to assess development potential of mineral, gas and oil deposits and underground water resources;
- \* applying geological knowledge to problems encountered in civil engineering projects such as the construction of dams, bridges, tunnels and large buildings;
- \* investigating and measuring seismic, gravitational, electrical, thermal and magnetic forces affecting the earth;
- \* investigating and measuring optical and acoustic phenomena in the atmosphere;
- \* charting the earth's magnetic field and applying this and other collected data for purposes of broadcasting and navigation;
- \* studying and measuring physical properties of seas and atmosphere and their inter-relationship such as the exchange of thermal energy;
- \* locating and determining the nature and extent of oil, gas and mineral deposits and of ground water resources, using seismological, gravimetric, magnetic, electrical or radiometric methods;
- \* preparing laboratory reports and scientific papers;
- \* may supervise the work of technical officers and technicians;
- \* performing related tasks.

**Examples of the occupations classified here:**

- 21141 Geologist*
- 21142 Geophysicist*
- 21143 Geologist, mining*
- 21144 Geologist, petroleum*
- 21145 Seismologist*
- 21146 Oceanographer*
- 21147 Geodesist*
- 21148 Hydrogeologist*

**212 MATHEMATICIANS, STATISTICIANS AND RELATED PROFESSIONALS**

Mathematicians, statisticians and related professionals conduct research, improve or develop mathematical, actuarial or statistical concepts, theories and operational methods and techniques, and apply this knowledge to a wide range of tasks in such fields as engineering, business or medicine as well as in other areas of natural, social or life sciences.

**2121 MATHEMATICIANS, OPERATIONS RESEARCH ANALYSTS AND ACTUARIES**

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

**Tasks include:**

- \* studying, improving and developing mathematical and actuarial theories and techniques;
- \* advising on or applying mathematical principles, models and techniques to a wide range of tasks in the fields of engineering, agronomy and medicine as well as in other areas of natural, social or life sciences;
- \* conducting logical analyses of management problems, especially in terms of input-output effectiveness, and formulating mathematical models of each problem usually for programming and solution by computer;
- \* defining, analysing and solving complex financial and business problems relating to areas such as insurance premiums, annuities, pensions and dividends;
- \* preparing papers and reports;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

**21211** *Mathematician*

**21212** *Analyst, operations research*

**21213** *Actuary*

**2122 STATISTICIANS**

Statisticians collect, organise and interpret quantifiable data and use statistical methodologies to produce statistical reports and analyses for government, commercial and other planning purposes.

**Tasks include:**

- \* liaising with management and clients to determine the area to be surveyed or examined;
- \* specifying the data to be collected and the methodology to be used in the collection and analysis;
- \* planning and organising surveys and other statistical collections and designing survey/questionnaires;
- \* evaluating, processing, analysing and interpreting statistical data and preparing them for publication;
- \* advising on or applying various data collection methods and statistical methods and techniques, and determining the reliability of findings, especially in such fields as business or medicine as well as in other areas of natural, social or life sciences;
- \* may assist in the development of statistical computer programmes;
- \* preparing statistical reports;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 21221** *Statistician*
- 21222** *Demographer*
- 21223** *Biometrician*
- 21224** *Statistician, business and economics*
- 21225** *Statistician, social science*
- 21226** *Statistician, physical science*
- 21227** *Statistician, mathematical*

**213     COMPUTING PROFESSIONALS**

Computing professionals conduct research, plan, develop and improve computer-based information systems, software and related concepts, develop principles and operational methods as well as maintain data dictionary and management systems of databases to ensure integrity and security of data.

**2131    COMPUTER SYSTEMS DESIGNERS AND ANALYSTS**

Computer systems designers and analysts conduct research, improve or develop computing concepts and operational methods, and advise on or engage in their practical application.

**Tasks include:**

- \* researching into the principles and operational methods of computers and computer-based systems for information communication and processing, planning, design, process control and production, development and maintenance of computer software, as well as data structures and databases, algorithms, artificial intelligence and robotics;
- \* developing and maintaining data dictionary and management systems of databases to ensure validity and safety of data;
- \* contributing to and keeping up with technical developments of computers, peripherals, computing methods and software, their potential and limitations;
- \* analysing computer users' requirements, by consultation, to determine hardware and software configurations and development needs and preparing cost-benefit analyses;
- \* writing programming specifications and preparing technical reports and instruction manuals specifying methods of operation and maintenance of the computer hardware and software configurations;
- \* designing, writing, maintaining and updating software which controls the overall functioning of computers and which links hardware and computer applications software;
- \* designing and implementing communication networks between different computer installations;
- \* developing improved methods and instruments, including computer languages, for writing, documenting and maintaining computer software;
- \* developing and implementing data processing procedures;
- \* preparing technical papers and reports;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*21311 Analyst, systems/computer*  
*21312 Analyst, MIS*  
*21313 Designer, web*  
*21314 Analyst, communications/computer*  
*21315 Analyst, database/computer*  
*21316 Software developer*  
*21317 Analyst, EDP*

**2132 COMPUTER PROGRAMMERS**

Computer programmers write, test and maintain computer programs to meet the needs of users of computer systems.

**Tasks include:**

- \* studying program intent, output requirements, nature and sources of input data, internal checks and other controls required in consultation with computer systems designers and analysts and subject-matter specialists;
- \* preparing logical workflow charts and diagrams and establishing sequence of steps for data input and computer processing operations;
- \* writing and providing detailed documentation of computer programs in a machine code, assembler, or high-level language such as PL/1, COBOL, FORTRAN, PASCAL, VISUAL BASIC, C++, Fourth Generation Language (4G1), JAVA or DELPHI, based when necessary on specifications provided by computer systems designers and analysts;
- \* testing and debugging the validity and logic of system programs and making corrections, if necessary;
- \* maintaining computer programs and their documentation to take account of changed input or output specifications or hardware configurations;
- \* involving in the research and development on web related technologies and homepage projects as well as maintaining online web and homepage;
- \* may contribute to the development of software in a mainframe, personal computer or local network environment;
- \* preparing technical papers and reports;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*21321 Programmer, computer*  
*21322 Programmer, communications*  
*21323 Programmer, database*  
*21324 Programmer, systems*  
*21325 Programmer, applications*  
*21326 Programmer, multi-media*

## **2139 COMPUTING PROFESSIONALS NOT ELSEWHERE CLASSIFIED**

This unit group covers computing professionals not classified elsewhere in Minor Group 213: Computing Professionals. For instance, here should be classified those who research, audit, implement and maintain proper database and network management and systems administration.

### **Tasks include:**

- \* researching, planning, designing, managing and implementing computer software applications, and computer operating systems;
- \* controlling the operational effectiveness of information technology systems and arranging systems maintenance and enhancements to meet users' requirements;
- \* installing computers and performing diagnostics on computer hardware;
- \* implementing data back-up and other systems of housekeeping procedures;
- \* assisting in the testing of new equipment and systems;
- \* providing and maintaining proper database, data dictionaries and network management and systems administration;
- \* analysing and monitoring control systems to ensure the integrity and security of data and reviewing the organisation's computing environment and usage of computer facilities;
- \* maintaining technical liaison with computer vendors for purchase, upgrading and maintenance of computer systems, software and hardware;
- \* providing training to users;
- \* preparing technical papers and reports;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

*21391 Researcher, information technology*

*21392 Auditor, computer*

*21393 Administrator, network*

*21394 Administrator, database*

*21395 Administrator, EDP*

## **214 ARCHITECTS, ENGINEERS AND RELATED PROFESSIONALS**

Architects, engineers and related professionals conduct research and improve or develop concepts, theories and operational methods, or apply existing knowledge in such fields as architecture, engineering, technological or economic efficiency of production processes.

### **2141 ARCHITECTS, TOWN AND TRAFFIC PLANNERS**

Architects, town and traffic planners conduct research and advise on and design of recreational, institutional, residential, commercial and industrial buildings, layout of towns, landscapes and traffic systems, and plan and monitor their construction, maintenance and repair.

**Tasks include:**

- \* developing new or improved architectural theories and methods;
- \* compiling and analysing site and community data on geographical aspects, ecology of area, land forms, soils, vegetation, site hydrology, visual characteristics and human-made structures to formulate land use and development recommendations for the preparation of environmental impact statements;
- \* consulting with clients and making recommendations regarding type, style, size and other aspects of construction;
- \* designing buildings, preparing detailed drawings and plans for their construction, maintenance and repair and making necessary contacts to ensure feasibility of projects in respect of style, cost and timing, compliance with regulations, etc.;
- \* identifying and finding best solutions for problems regarding function and quality of interior environments of buildings and making necessary designs, drawings and plans;
- \* inspecting construction work in progress to ensure compliance with plans, specification and quality standards;
- \* planning layout and co-ordinating development of urban areas;
- \* planning and designing the development of land areas for projects such as parks, schools, institutions, airports, roadways and related projects, and for commercial, industrial and residential sites;
- \* planning and advising on routing and control of road and other traffic for efficiency and safety;
- \* preparing reports, site plans, working drawings, specifications and cost estimates for land development, showing location and details of proposals, including ground modelling, structures and vegetation;
- \* maintaining technical liaison and consultancy with other relevant specialists;
- \* supervising the testing and commissioning of completed works;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 21411 Architect, building*
- 21412 Planner, town*
- 21413 Architect, landscape*
- 21414 Planner, traffic*
- 21415 Architect, interior*

**2142 CIVIL ENGINEERS**

Civil engineers plan, design, organise and supervise the construction and operation of civil engineering works.

**Tasks include:**

- \* conducting research and developing new or improved theories and methods related to civil engineering;

- \* advising on and designing structures such as bridges, dams, docks, roads, airports, railways, pipelines, waste-disposal and flood-control systems, and industrial and other large buildings;
- \* determining and specifying construction methods, materials and quality standards, and directing construction work;
- \* establishing control systems to ensure efficient functioning of structures as well as safety and environmental protection;
- \* organising and directing site labour and the delivery of construction materials, plant and equipment needed for construction projects;
- \* administering contracts and verifying and certifying satisfactory completion;
- \* studying and advising on technological aspects of particular materials/processes or systems related to civil engineering works;
- \* maintaining technical liaison and consultancy with other relevant specialists;
- \* supervising the testing and commissioning of completed works;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 21421 Engineer, civil*
- 21422 Engineer, civil/building construction*
- 21423 Engineer, civil/highways and roads*
- 21424 Engineer, civil/geotechnic*
- 21425 Engineer, civil/bridge construction*
- 21426 Engineer, civil/irrigation*
- 21427 Engineer, civil/hydraulics*
- 21428 Engineer, sewerage and sanitary*

**2143 ELECTRICAL ENGINEERS**

Electrical engineers conduct research and advise on, design, develop and supervise the manufacture, installation, operation and maintenance of equipment, machines and systems for the generation, distribution, utilisation and control of electric power.

**Tasks include:**

- \* planning and designing the manufacture and installation of electric power equipment and facilities;
- \* determining the type and arrangement of circuits, transformers, circuit-breakers, transmission lines and other equipment;
- \* advising on and designing systems for electrical motors, electrical traction and other equipment or domestic electrical appliances;
- \* interpreting specifications, drawings, standards and regulations relating to electric power equipment and use;
- \* organising and managing resources used in the supply of electrical components, machines, appliances and equipment;
- \* establishing delivery and installation schedules for machines, switchgear, cables and fittings;
- \* supervising the operation and maintenance of power stations, transmission and distribution systems and industrial plants;

- \* establishing control standards and procedures to ensure efficient functioning and safety of electrical generating and distribution systems, motors and equipment;
- \* locating and correcting malfunctions;
- \* maintaining technical liaison and consultancy with other relevant specialists;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 21431 Engineer, electrical*
- 21432 Engineer, power generation*
- 21433 Engineer, power distribution and transmission*
- 21434 Engineer, electrical illumination*
- 21435 Engineer, electrical/electromechanical equipment*

**2144 ELECTRONICS AND TELECOMMUNICATIONS ENGINEERS**

Electronics and telecommunications engineers design, develop, adapt, test and maintain electronic components, circuits and systems used for computer systems, communications systems and industrial applications.

**Tasks include:**

- \* advising on and designing electronic devices, circuits and systems used for computers, communications and control systems and other industrial applications;
- \* designing software especially embedded software to be used within such systems;
- \* developing apparatus and procedures to test electronic components, circuits and systems;
- \* supervising installation and commissioning of computer and telecommunications systems and ensuring proper control and protection methods;
- \* establishing control standards and procedures to ensure efficient functioning and safety of electronic systems, motors and equipment;
- \* locating and correcting malfunctions;
- \* organising and directing maintenance and repair of existing electronic systems, motors and equipment;
- \* studying and advising on technological aspects of particular materials, products or processes;
- \* maintaining technical liaison and consultancy with other relevant specialists;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 21441 Engineer, electronics*
- 21442 Engineer, telecommunications*
- 21443 Engineer, computer*
- 21444 Engineer, audio and video equipment*
- 21445 Engineer, semi-conductor*
- 21446 Engineer, mechantronics*

## **2145 MECHANICAL ENGINEERS**

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

### **Tasks include:**

- \* advising on and designing machinery and tools for manufacturing, mining, construction, agricultural work and other industrial purposes;
- \* advising on and designing steam, internal combustion and other non-electric motors and engines used for propulsion of railway locomotives, road vehicles or aircraft, or for driving industrial or other machinery;
- \* advising on and designing ships' propulsion systems, power plant, heating and ventilation systems, steering gear, pumps and other mechanical equipment;
- \* advising on and designing hulls and superstructures of ships and other vessels;
- \* advising on and designing airframes, undercarriages and other equipment for aircraft;
- \* advising on and designing road vehicle bodies, suspension systems, brakes and other components;
- \* advising on and designing heating, ventilation and refrigeration systems and equipment;
- \* advising on and designing mechanical plant and equipment for the release, control and utilisation of nuclear energy;
- \* advising on and designing non-electrical parts of apparatus or products such as word processors, computers, precision instruments, cameras and projectors, etc.;
- \* specifying and checking production or installation methods and work of agricultural and other machines, machinery, tools, motors, engines, and industrial plant, equipment or systems;
- \* establishing control standards and procedures to ensure efficient functioning and safety of machines, machinery, tools, motors, engines, and industrial plant, equipment or systems;
- \* locating and correcting malfunctions;
- \* organising and directing maintenance and repair of existing machines, machinery, tools, motors, engines, and industrial plant, equipment or systems;
- \* studying and advising on technological aspects of particular materials, products or processes;
- \* maintaining technical liaison and consultancy with relevant specialists;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

- 21451 Engineer, mechanical*
- 21452 Engineer, industrial machinery and tools*
- 21453 Engineer, nuclear power*
- 21454 Engineer, heating, ventilation, air-conditioning and refrigeration*
- 21455 Engineer, mechanical/automotive*
- 21456 Engineer, mechanical/aeronautics*
- 21457 Engineer, marine*

## **2146 CHEMICAL ENGINEERS**

Chemical engineers conduct research and develop, design and 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, and direct maintenance and repair of industrial plant, or study and advise on technological aspects of particular materials, products or processes.

### **Tasks include:**

- \* conducting research and advising on, and developing and designing commercial-scale chemical processes and equipment to refine crude oil and other liquids or gases, and to produce substances and items such as petroleum derivatives, explosives, food and drink products, medicament or synthetic materials;
- \* specifying relevant aspects of the construction of chemical manufacturing plant;
- \* specifying production methods, materials and quality standards and ensuring that they conform to specifications;
- \* establishing control standards and procedures to ensure safety, environmental protection and efficiency in manufacturing operations and processes;
- \* locating and correcting malfunctions;
- \* organising and advising on maintenance and repair of existing equipment;
- \* studying and advising on technological aspects of particular materials, products or processes;
- \* maintaining technical liaison and consultancy with other relevant specialists;
- \* preparing analytical reports;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

- 21461 Engineer, chemical*
- 21462 Engineer, chemical/petroleum and gas*
- 21463 Engineer, chemical/paints and varnish*
- 21464 Engineer, chemical/fertiliser*
- 21465 Engineer, chemical/pharmaceutical products*
- 21466 Engineer, chemical/food*
- 21467 Technologist, plastics*
- 21468 Technologist, rubber*

## **2147 MINING ENGINEERS AND METALLURGISTS**

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

**Tasks include:**

- \* conducting research and advising on, designing and developing new or improved methods to deal with engineering aspects of mining and oil, gas or water extraction;
- \* determining the most suitable methods of efficient mining and extraction, types of machinery to be used, planning layout and directing construction of shafts and tunnels;
- \* determining drilling site and devising methods of controlling the flow of water, oil or gas from wells;
- \* planning and directing storage, initial treatment and transportation of water, oil or gas;
- \* establishing safety standards and procedures and first-aid facilities, especially underground;
- \* conducting research, developing methods of extracting metals from their ores and advising on their application;
- \* investigating properties of metals and alloys, developing new alloys and advising on and supervising technical aspects of metal and alloy manufacture and processing;
- \* studying and advising on technological aspects of particular materials or processes;
- \* maintaining technical liaison and consultancy with other relevant specialists in particular with geologists and geophysicists;
- \* may prepare cost budget of operations to evaluate the economic feasibility of production processes;
- \* may supervise and co-ordinate the work of technicians and other workers in the extractive process;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 21471** *Engineer, mining*
- 21472** *Engineer, mining/metal*
- 21473** *Engineer, mining/non-metals*
- 21474** *Engineer, mining/petroleum and natural gas*
- 21475** *Metallurgist, extractive*
- 21476** *Metallurgist, physical*

**2148 SURVEYORS**

Surveyors apply surveying methods and techniques to determine the exact position of natural and constructed features and boundaries of land, seas, underground areas and celestial bodies, and prepare or revise digital, graphic and pictorial representations of maps and charts or plans.

**Tasks include:**

- \* surveying, measuring and describing land surfaces for various purposes, including mapmaking, construction work or establishment of property boundaries;
- \* surveying mines, delineating underground surfaces, noting exact position of various features and making charts and maps with a view to controlling direction and extent of mining;
- \* surveying seas, rivers and lake beds, delineating underwater surfaces, noting exact position of various features and making charts and maps to be used in particular in determining navigable waters and channels and in planning construction of marine structures;
- \* planning and conducting aerial photographic surveys;

- \* analysing aerial and other photographs, satellite imagery and surveying data to prepare and revise topographic maps and charts, utility maps and other thematic maps;
- \* studying and advising on technical, aesthetic and economic aspects of map production;
- \* supervising the preparation of plans, maps, charts and drawing to give pictorial representations and managing automated information systems;
- \* undertaking research and development of surveying and photogrammetric measurement systems, cadastral (land tenure) systems and land information systems;
- \* planning and designing land sub-division projects and negotiating details with local governments and other authorities;
- \* supervising and co-ordinating the works of associate surveyors;
- \* maintaining technical liaison and consultancy with other relevant specialists;
- \* performing related tasks.

**Examples of the occupations classified here:**

- 21481 Surveyor*
- 21482 Cartographer*
- 21483 Surveyor, land*
- 21484 Surveyor, mine*
- 21485 Surveyor, hydrographic*
- 21486 Surveyor, aerial*
- 21487 Photogrammetrist*

**2149 ARCHITECTS, ENGINEERS AND RELATED PROFESSIONALS  
NOT ELSEWHERE CLASSIFIED**

This unit group covers architects, engineers and related professionals not classified elsewhere in Minor Group 214: Architects, Engineers and Related Professionals. For instance, here should be classified those who engaged in conducting research, advising on or developing industrial efficiency of production and time and motion study, quantity surveying and those who study and advise on technological aspects of particular materials, products and manufacturing processes.

**Tasks include:**

- \* consulting with management and supervisory personnel and advising on planning and production methods;
- \* developing sophisticated factory automation and mechanisation projects and recommending long-term automation strategies;
- \* advising on methods to promote efficient, safe and economic utilisation of personnel, materials and equipment;
- \* making recommendations regarding methods of work and sequence of operations;
- \* making recommendations and supervising time and motion aspects of work organisation;
- \* advising on most efficient layout of plant or establishment;
- \* identifying potential hazards and introducing safety procedures and devices;
- \* preparing and monitoring cost estimates and bills of quantities for architectural and construction projects;

- \* studying and advising on technological aspects of manufacturing processes relating to glass, ceramics, textiles, leather products, wood and printing;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 21491 Engineer, automation*
- 21492 Engineer, industrial*
- 21493 Engineer, organisation and methods*
- 21494 Engineer, time and motion*
- 21495 Engineer, industrial health and safety*
- 21496 Technologist, ceramics*
- 21497 Surveyor, quantity*
- 21498 Technologist, wood*

## **22 LIFE SCIENCE AND HEALTH PROFESSIONALS**

Life science and health professionals conduct research, improve or develop concepts, theories and operational methods, or apply scientific knowledge relating to fields such as biology, zoology, botany, ecology, physiology, biochemistry, microbiology, pharmacology, agronomy and medicine.

**This sub-major group consists of the following minor groups:**

- 221 LIFE SCIENCE PROFESSIONALS**
- 222 HEALTH PROFESSIONALS (EXCEPT NURSING)**

### **221 LIFE SCIENCE PROFESSIONALS**

Life science professionals conduct research, improve or develop concepts, theories and operational methods, or apply scientific knowledge relating to biology, microbiology, botany, zoology, ecology, anatomy, bacteriology, biochemistry, physiology, cytology, genetics, agronomy, pathology or pharmacology.

#### **2211 BIOLOGISTS, BOTANISTS, ZOOLOGISTS AND RELATED PROFESSIONALS**

Biologists, botanists, zoologists and related professionals conduct research, improve or develop concepts, theories and operational methods, and apply scientific knowledge relating to biology, microbiology, bacteriology, cytology, genetics, zoology, botany and ecology, especially in the fields of medicine and agriculture.

**Tasks include:**

- \* conducting research, improving or developing concepts, theories and operational methods in their respective fields;
- \* conducting field and laboratory experiments concerning all forms of life by identifying and classifying human, animal, insect or plant specimens, and studying their origin, development, chemical and physical form, structure, composition, and life and reproductive processes;

- \* studying and conducting experiments concerning the structure, development and characteristics of micro-organisms such as bacteria or viruses;
- \* studying all forms of plant/animal life and developing practical applications in fields such as agriculture and medicine;
- \* studying and conducting experiments concerning the structure and functions of living cells, and the influence of physical and chemical factors upon normal and abnormal cells;
- \* studying inter-relationships of animal and plant life and the environmental factors involved, and giving professional advice to related disciplines;
- \* developing industrial, medical and other applications of knowledge in their respective fields;
- \* preparing laboratory reports and scientific papers;
- \* may supervise and co-ordinate the work of technicians;
- \* performing related tasks.

**Examples of the occupations classified here:**

22777 *Biologist*  
 22772 *Botanist*  
 22113 *Zoologist*  
 22114 *Entomologist*  
 22115 *Ecologist*  
 22116 *Microbiologist*

**2212 PHARMACOLOGISTS, PATHOLOGISTS AND RELATED PROFESSIONALS**

Pharmacologists, pathologists and related professionals conduct research, improve or develop concepts, theories and operational methods, and apply scientific knowledge relating to anatomy, biochemistry, biophysics, physiology, pathology or pharmacology in such fields as medicine, agriculture or industry.

**Tasks include:**

- \* conducting research, improving or developing concepts, theories and operational methods in their respective fields;
- \* studying and conducting concerning the form, structure and other anatomical characteristics of living organism;
- \* studying and conducting experiments concerning the chemical composition and processes of living organisms;
- \* studying and conducting experiments concerning the life processes and functions of human, animal or plant organs, tissues, cells, glands and systems under normal and abnormal or exceptional conditions;
- \* studying and conducting experiments concerning the structure, development and characteristics of micro-organisms such as bacteria or viruses;
- \* studying and conducting experiments concerning the nature, causes and development of human, animal or plant diseases and disorders;
- \* studying and conducting experiments concerning the effects of drugs and other substances on the tissues, organs and physiological processes of human beings and animals, and improving existing or developing new drugs;

- \* developing industrial, medical and other applications of knowledge in their respective fields;
- \* preparing laboratory reports and scientific papers;
- \* may supervise and co-ordinate the works of technicians;
- \* performing related tasks.

**Examples of the occupations classified here:**

22121 *Anatomist*  
 22122 *Biochemist*  
 22123 *Biophysicist*  
 22124 *Endocrinologist*  
 22125 *Physiologist*  
 22126 *Pharmacologist*  
 22127 *Pathologist*

**2213 ENVIRONMENTAL AND AGRICULTURAL SCIENCE PROFESSIONALS**

Environmental and agricultural science professionals conduct research and improve or develop concepts, theories and operational methods, and apply scientific knowledge relating to environment, forestry, crop and animal husbandry.

**Tasks include:**

- \* studying the effects on animal and plant life of such factors as terrain, altitude, climatic conditions, sources of nutrition and predators;
- \* investigating the structure of communities of organisms and predicting the effects of disturbances by human or environmental changes;
- \* managing forest resources to maximise their long-term commercial, recreational and environmental benefits for the community;
- \* researching into field crops and grasses and developing new or improved cultivation methods;
- \* researching into horticultural crops and developing new or improved cultivation methods;
- \* researching into animal husbandry and developing new or improved breeding methods;
- \* researching into and developing new or improved methods for tree propagation and culture, or planning and directing afforestation and exploitation of forest stands;
- \* researching into characteristics, use capability and productivity of soils and applying findings to development of improved agricultural, horticultural and forestry practices;
- \* researching into and developing new or improved methods for wildlife conservation;
- \* researching into and developing new or improved methods for economic exploitation of grazing lands;
- \* advising farmers on farming methods and problems;
- \* preparing scientific papers and reports;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 22131** *Agronomist*
- 22132** *Crop research scientist*
- 22133** *Horticulturist*
- 22134** *Silviculturist*
- 22135** *Animal scientist*
- 22136** *Environmental research scientist*

**222    HEALTH PROFESSIONALS (EXCEPT NURSING)**

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

**2221    MEDICAL DOCTORS**

Medical doctors apply scientific medical knowledge to the prevention, diagnosis and treatment of human illnesses.

**Tasks include:**

- \* examining the patients to determine the nature of diseases or illnesses;
- \* conducting medical examinations and making diagnoses;
- \* prescribing and giving treatment for diagnosed illnesses, disorders or injuries;
- \* giving specialised medical or surgical treatment for particular types of illnesses, disorders or injuries;
- \* giving advice on and applying preventive medicine methods and treatments;
- \* participating in the development and implementation of public health laws and regulations for safeguarding and promoting the health of a community;
- \* teaching medical students and other health sciences students, physicians and other health professionals;
- \* preparing scientific papers and reports;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 22211** *Doctor, medical*
- 22212** *Surgeon*
- 22213** *Anaesthetist*
- 22214** *Psychiatrist*
- 22215** *Ophthalmologist*
- 22216** *Cardiologist*
- 22217** *Obstetrician and gynaecologist*
- 22218** *Neurologist*

**2222    DENTISTS**

Dentists diagnose and treat dental disorders, injuries and malformation of teeth, gums and related oral structures and prescribe and administer preventive actions.

**Tasks include:**

- \* examining teeth, gums, jaws and other oral tissues using dental and x-ray equipment;
- \* making diagnoses, advising on and giving necessary dental treatment;
- \* cleaning and filling cavities and extracting decayed or deformed teeth;
- \* constructing inlays and artificial crowns to replace teeth;
- \* designing, constructing and fitting complete and partial dentures, orthodontic and other appliances and performing bridge work;
- \* giving surgical, medical and other forms of treatment for particular types of dental and oral diseases and disorders;
- \* participating in public action to maintain or improve standards of oral health and dental care;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 22227 Dentist*
- 22222 Pedodontist*
- 22223 Orthodontist*
- 22224 Prosthodontist*
- 22225 Periodontist*
- 22226 Surgeon, oral/dentistry*

**2223 VETERINARIANS**

Veterinarians diagnose and prescribe medical or surgical treatment of diseases and injuries to animals.

**Tasks include:**

- \* conducting examinations and diagnosing diseases or injuries of animals;
- \* administering surgical or medical veterinary treatment;
- \* rendering obstetric services to animals;
- \* testing dairy and other herds and inoculating animals against diseases;
- \* advising on hygiene, feeding, breeding and care of animals;
- \* inspecting quality, purity and safety of food made wholly or partly from raw materials of animal origin intended for human consumption;
- \* assisting in epidemiological, radiological and other surveillance of animal health;
- \* performing autopsies to determine the cause of death;
- \* preparing scientific papers and reports;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 22231** *Veterinarian*
- 22232** *Surgeon, veterinary*
- 22233** *Veterinarian, public health*

**2224 PHARMACISTS**

Pharmacists apply pharmaceutical concepts and theories in the preparation and dispensing or selling medicaments and drugs, and conduct research on production, storage, quality control and distribution of drugs and related supplies.

Tasks include:

- \* preparing or directing the preparation of medicaments according to prescriptions of medical, dental and veterinary practitioners or established formula;
- \* checking prescriptions to ensure that recommended dosages are not exceeded, and that instructions are understood by patient, and advising on possible drug incompatibility and contra-indications;
- \* dispensing medicaments and drugs in hospitals or selling them in pharmacies;
- \* maintaining prescription files and recording issue of narcotics, poisons and habit-forming drugs;
- \* advising patients on generic equivalent and lowest cost of drugs;
- \* developing standards for drug used in pharmaceuticals;
- \* testing of drugs to determine identity, purity, strength and safety;
- \* conducting research to develop or improve pharmaceuticals, cosmetics and related chemical products;
- \* determining the most suitable packaging for medical substances to avoid deterioration and facilitating storage and distribution;
- \* selling non-prescription drugs, sickroom supplies, toiletries, cosmetics and other commercial products;
- \* preparing scientific papers and reports;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 22241** *Pharmacist*
- 22242** *Pharmacist, industrial*
- 22243** *Pharmacist, retail*
- 22244** *Pharmacist, hospital*

**2229 HEALTH PROFESSIONALS (EXCEPT NURSING) NOT ELSEWHERE CLASSIFIED**

This unit group covers health professionals (except nursing) not classified elsewhere in Minor Group 222: Health Professionals (Except Nursing).

## **23 TEACHING PROFESSIONALS**

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

**This sub-major group consists of the following minor groups:**

- 231 UNIVERSITY, POLYTECHNIC AND HIGHER EDUCATION TEACHING PROFESSIONALS**
- 232 PRE-UNIVERSITY AND SECONDARY EDUCATION TEACHING PROFESSIONALS**
- 233 SPECIAL EDUCATION TEACHING PROFESSIONALS**
- 239 TEACHING PROFESSIONALS NOT ELSEWHERE CLASSIFIED**

### **231 UNIVERSITY, POLYTECHNIC AND HIGHER EDUCATION TEACHING PROFESSIONALS**

University, polytechnic and higher education teaching professionals teach their subjects at different levels after the termination of secondary education, conduct research and improve or develop concepts, theories and operational methods pertaining to their particular discipline, and prepare scholarly papers and books.

#### **2310 UNIVERSITY, POLYTECHNIC AND HIGHER EDUCATION TEACHING PROFESSIONALS**

University, polytechnic and higher education teaching professionals teach their subjects at some or all levels after the termination of secondary education, conduct research and improve or develop concepts, theories and operational methods, and prepare scholarly papers and books.

##### **Tasks include:**

- \* designing and modifying curricula and preparing courses of study in accordance with requirements;
- \* delivering lectures and conducting tutorials, seminars and laboratory sessions;
- \* stimulating discussion and independent thought among students;
- \* supervising, where appropriate, experimental and practical work undertaken by students;
- \* administering, evaluating and marking assignments and examination papers;
- \* directing research of post-graduate students or other members of department;
- \* researching into and developing concepts, theories and operational methods for application in industrial and other fields;
- \* preparing scholarly books, papers or articles;
- \* attending conferences and seminars;
- \* assisting with extra-curricular activities;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 23101 *Lecturer, polytechnic*
- 23102 *Lecturer, university*
- 23103 *Professor, university/college*
- 23104 *Tutor, university*

**232 PRE-UNIVERSITY AND SECONDARY EDUCATION TEACHING PROFESSIONALS**

Pre-university and secondary education teaching professionals teach one or more subjects, for educational or vocational purposes, at some or all levels between the termination of primary education and the beginning of studies at colleges or universities.

**2320 PRE-UNIVERSITY AND SECONDARY EDUCATION TEACHING PROFESSIONALS**

Pre-university and secondary education teaching professionals teach one or more subjects, for educational or vocational purposes, at some or all levels between the termination of primary education and the beginning of studies at colleges or universities.

**Tasks include:**

- \* planning and preparing lessons in accordance with the prescribed/recommended curriculum;
- \* giving lessons in their subjects and supervising students' class work and discipline;
- \* preparing, assigning and correcting exercises, assignments and tests to evaluate students' progress;
- \* preparing reports about students' work and conferring with other teachers and parents;
- \* participating in staff meetings and educational conferences and workshops;
- \* organising or assisting with extracurricular activities;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 23201 *Teacher, pre-university*
- 23202 *Teacher, secondary education*
- 23203 *Teacher, technical/vocational/commercial*

**233 SPECIAL EDUCATION TEACHING PROFESSIONALS**

Special education teaching professionals teach physically or mentally handicapped children, young persons or adults, or those with learning difficulties, at a given level of education.

**2330 SPECIAL EDUCATION TEACHING PROFESSIONALS**

Special education teaching professionals teach physically or mentally handicapped children, young persons or adults, or those with learning difficulties, at a given level of education.

**Tasks include:**

- \* designing or modifying curricula and preparing lessons and activities in accordance with requirements;
- \* giving instruction using techniques or special aids such as Braille or lip-reading appropriate to pupil's handicap and level and supervising work in class;
- \* encouraging pupils to have confidence, helping them to discover and adopt methods which would compensate for limitations imposed by their handicap, and giving them a feeling of achievement;
- \* administering tests, evaluating and noting progress of each pupil and discussing it with parents, teachers, therapists, social workers, etc.;
- \* may work with parents on a variety of learning and follow-up programmes;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 23301 Teacher, special education/for the deaf*
- 23302 Teacher, special education/for the dumb*
- 23303 Teacher, special education/for the blind*
- 23304 Teacher, special education/for the mentally handicapped*
- 23305 Teacher, special education/for the physically handicapped*

**239 TEACHING PROFESSIONALS NOT ELSEWHERE CLASSIFIED**

This minor group covers teaching professionals not elsewhere classified in minor groups 231 \* 233. Teaching professionals not elsewhere classified conduct research and develop or advise on teaching methods and aids, or review and examine teachers' work and the results achieved in applying a particular curriculum programme and suggest changes and improvements.

**2391 EDUCATION SPECIALISTS**

Education specialists conduct research and develop or advise on educational systems and teaching methods and aids.

**Tasks include:**

- \* consulting with teachers, principals and administrative officials of educational institutions to co-ordinate educational programmes and provide advice;
- \* serving on committees to identify present and future needs within the educational system, and plan, develop and modify facilities and programmes;
- \* researching into current developments in curriculum, methods and other educational practices, and advising on necessary changes and possible improvements;
- \* advising on contents of courses and methods of examination;
- \* researching into audio-visual and other teaching aids and advising on, planning and organising their introduction in educational establishments;
- \* documenting subjects and courses developed and evaluating new courses;
- \* organising and conducting workshops and conferences to train teachers in new programmes and methods;

- \* determining the cost and effectiveness of educational policies and programmes;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 23911 Evaluator and researcher, education systems*
- 23912 Adviser, education methods*
- 23913 Specialist, audio-visual teaching*
- 23914 Curricula developer*

**2392 SCHOOL INSPECTORS**

School inspectors review and examine teachers' work and the results achieved in applying a particular curriculum programme and suggest changes and improvements.

**Tasks include:**

- \* inspecting schools periodically and conferring with the administration and teaching staff on questions relating to curriculum, teaching methods, equipment and other matters;
- \* visiting classrooms to observe teaching techniques and to evaluate teachers' performance, and scholastic results obtained;
- \* preparing reports and making recommendations to educational authorities concerning possible changes and improvements in curriculum, teaching methods and other matters;
- \* performing related tasks;
- \* supervising other workers.

**Example of the occupations classified here:**

- 23920 Inspector, school*

**2399 OTHER TEACHING PROFESSIONALS NOT ELSEWHERE CLASSIFIED**

This unit group covers teaching professionals not classified elsewhere in Minor Group 239: Teaching Professionals Not Elsewhere Classified.

**Tasks include:**

- \* co-ordinating and directing college or university registration activities;
- \* monitoring training programmes transmitted by communication satellite from colleges and universities to remote educational institutions, activating audio-visual receiver and monitoring classroom viewing of live or recorded courses transmitted by communication satellite, and monitoring live seminar transmissions and stimulating classroom discussion after broadcast;
- \* teaching exceptionally intelligent and problem students;
- \* teaching juvenile delinquents remanded to establishments for corrective training;
- \* assisting school children who have scholastic, behavioural or personality problems and working out with children and parents and teachers ways for overcoming difficulties;

- \* planning, organising and implementing special programmes to provide remedial or advanced tuition;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 23991 Teacher for the exceptionally intelligent*
- 23992 Teacher, remedial/professional*
- 23993 Satellite-instruction facilitator*
- 23994 Registrar, college or university*

## **24 BUSINESS PROFESSIONALS**

Business professionals improve, advise on or apply operational methods relating to organisation of business.

**This sub-major group consists of the following minor groups:**

- 241 ACCOUNTANTS AND AUDITORS**
- 242 FINANCIAL ANALYSTS AND RELATED PROFESSIONALS**
- 243 PERSONNEL AND CAREERS PROFESSIONALS**
- 249 BUSINESS PROFESSIONALS NOT ELSEWHERE CLASSIFIED**

### **241 ACCOUNTANTS AND AUDITORS**

Accountants and auditors plan and perform accounting services, advise on accountancy matters, and plan and conduct financial audits of accounts of government departments, and statutory, business and industrial establishments.

#### **2410 ACCOUNTANTS AND AUDITORS**

Accountants and auditors advise on accounting matters and perform accountancy services or audits.

**Tasks include:**

- \* advising on, planning and implementing budgetary, accounts controlling and other accounting policies and systems;
- \* preparing and certifying financial statements for presentation to management, shareholders and statutory or other bodies;
- \* preparing tax returns, advising on taxation problems and contesting disputed claims before tax officials;
- \* preparing or reporting on profit forecasts and budgets;
- \* preparing project costing and risk analysis;
- \* identifying areas of cost reduction and recommending cost-saving/control measures;

- \* conducting financial investigations, undertaking audits, preparing reports and advising on such matters as suspected fraud, insolvency, bankruptcy, merger, capital financing and the purchase and sales of businesses;
- \* acting as liquidation agent in matters relating to bankruptcy and taxation;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

24101 *Accountant*  
 24102 *Auditor*  
 24103 *Accountant, cost*  
 24104 *Accountant, tax*  
 24105 *Liquidator*

**242 FINANCIAL ANALYSTS AND RELATED PROFESSIONALS**

Financial analysts and related professionals improve, advise or apply operational methods relating to financial investments in a brokerage firm, fund management unit or treasury department of business and other organisations.

**2420 FINANCIAL ANALYSTS AND RELATED PROFESSIONALS**

Financial analysts and related professionals improve, advise or apply operational methods relating to financial investments in a brokerage firm, fund management unit or treasury department of business and other organisations.

**Tasks include:**

- \* analysing the financial profile of companies for the purpose of making investment recommendations;
- \* investing funds on behalf of an investment organisation's client in the money and capital markets;
- \* overseeing and co-ordinating treasury activities such as forex, money market and bond transactions;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

24201 *Financial analyst*  
 24202 *Fund manager*  
 24203 *Treasury manager*

**243 PERSONNEL AND CAREERS PROFESSIONALS**

Personnel and careers professionals provide professional business services related to personnel policies such as recruitment, placement, training, occupational analyses and vocational guidance.

## **2430 PERSONNEL AND CAREERS PROFESSIONALS**

Personnel and careers professionals provide professional business services related to personnel policies such as recruitment, placement, training, occupational analyses and vocational guidance.

### **Tasks include:**

- \* advising on and performing personnel functions relating to recruitment, placement, training, staff performance, promotion, compensation and employee-management relations;
- \* maintaining personnel records and associated human resource information systems;
- \* studying and analysing jobs performed in an establishment, conducting interviews with workers, supervisors and management, and writing detailed post, job and occupation descriptions from data obtained;
- \* preparing occupational information booklets/pamphlets and occupational classification systems;
- \* advising and working on the foregoing and other aspects of job and occupation analyses in such fields as personnel administration, manpower research and planning, training, or occupational information and vocational guidance;
- \* studying and advising individuals on employment opportunities, career choices and further education or training;
- \* providing guidance to students, parents and teachers over a wide range of matters, including students' personal problems, learning difficulties and special requirements;
- \* identifying and determining the need of training through identifying competencies and defining training requirements in the work requirement;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

- 24301 Human resource/personnel officer*
- 24302 Job evaluator*
- 24303 Counsellor, vocational guidance*
- 24304 Conciliator, labour-management relations*
- 24305 Personnel safety officer*
- 24306 Industrial relations officer*
- 24307 Staff training officer*
- 24308 Personnel consultant*

## **249 BUSINESS PROFESSIONALS NOT ELSEWHERE CLASSIFIED**

This minor group covers business professionals not elsewhere classified in minor groups 241 - 243.

### **2490 BUSINESS PROFESSIONALS NOT ELSEWHERE CLASSIFIED**

This unit group covers business professionals not classified elsewhere in minor groups 241 - 243, including those who are engaged in studying, advising on and applying operational methods relating to various aspects of business undertakings such as marketing, advertising, public relations, application of rules concerning patents, or steps to be taken in setting up and running a business, and application of home economics principles.

**Tasks include:**

- \* conducting research and determining or advising on existing level of sales for particular products or services, and assessing potential markets and future trends;
- \* planning, advising on or directing and co-ordinating production of advertising campaigns;
- \* studying, advising on and conducting public relations programmes with a view to improving the public's knowledge and understanding of the enterprise or establishment concerned;
- \* supporting business growth and development through the preparation and execution of marketing objectives, policies and programmes;
- \* giving advice regarding patents and assisting in preparing applications for registration;
- \* studying and advising on financial, legal, organisational, marketing and other aspects connected with setting up and running a business;
- \* acting as advisor to the Board of Directors and undertaking all secretarial functions of the company;
- \* studying, interpreting and informing about and advising on principles of home economics and management with a view to promoting welfare of families as well as the consumption of household goods or the promotion of new products;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*24901 Analyst, market research/business*

*24902 Company secretary*

*24903 Account executive, advertising*

*24904 Public relations officer*

*24905 Press officer*

*24906 Information officer*

*24907 Home economist*

*24908 Patent agent*

## **25 LEGAL PROFESSIONALS**

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

**This sub-major group consists of the following minor group:**

### **250 LEGAL PROFESSIONALS**

#### **250 LEGAL PROFESSIONALS**

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

## **2501 LAWYERS**

Lawyers give clients legal advice on a wide variety of subjects and plead cases or conduct prosecutions in courts of justice, or instruct barristers or advocates to plead in higher courts of justice.

### **Tasks include:**

- \* conducting research on legal theories and principles and their relationship to specific laws or court judgements;
- \* drafting legislation and preparing government regulations based on existing laws;
- \* giving clients (including the government) legal advice on a wide variety of subjects and undertaking legal business on clients' behalf;
- \* assisting clients to negotiate settlements in matters which involve legal disputes;
- \* examining the circumstances of disputes or reported crimes to ascertain facts and their legal implications;
- \* preparing pleadings or cases for plaintiff or defendant and conducting them in court;
- \* representing clients in the lower court or instructing barristers or advocates to plead in higher courts of justice;
- \* accepting briefs and pleading in the higher court;
- \* acting as prosecutor on behalf of the government in criminal cases;
- \* drawing up legal documents, wills, affidavits, contracts and administering oaths;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

- 25077** *Lawyer*
- 25012** *Prosecutor*
- 25013** *Attorney General*
- 25014** *Solicitor*
- 25015** *Legal officer (government service)*
- 25016** *Advocate*
- 25017** *Barrister*

## **2502 JUDGES, PRESIDENTS, MAGISTRATES AND RELATED JUDICIAL OFFICERS**

Judges, presidents, magistrates and related judicial officers hear and judge cases in courts of justice or pronounce judgement.

### **Tasks include:**

- \* hearing and weighing arguments and evidence;
- \* establishing rules of procedure on questions for which no standard procedures already exist;
- \* determining the rights and obligations of the parties involved;
- \* pronouncing judgement;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 25021 Judge, high court*
- 25022 President, sessions court*
- 25023 Magistrate, lower court*
- 25024 President, industrial court*
- 25025 Judge, supreme court*

**2509 LEGAL PROFESSIONALS NOT ELSEWHERE CLASSIFIED**

This unit group covers legal professionals not classified elsewhere in Minor Group 250: Legal Professionals such as those who perform legal functions other than pleading or prosecuting cases or presiding over judicial proceedings.

**Tasks include:**

- \* drawing up legal documents and affirming and administering oaths and statutory declarations;
- \* performing administrative work in courts of law;
- \* administering the estates of deceased persons or other trusts;
- \* taking charge and administering estates of insolvents (bankrupts) or properties and assets of companies;
- \* determining, by inquest, the causes of any death not obviously due to natural causes;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 25091 Notary/Commissioner for oaths*
- 25092 Registrar of court*
- 25093 Public trustee*
- 25094 Trust officer*
- 25095 Official assignee (High Court)*
- 25096 Bankruptcy officer*
- 25097 Court receiver and liquidator*
- 25098 Coroner*

**29 PROFESSIONALS NOT ELSEWHERE CLASSIFIED**

Professionals not elsewhere classified include those who develop and maintain the collections of archives, libraries, museums, art galleries and similar establishments, conduct research, improve or develop concepts, theories and operational methods or apply knowledge in a variety of social science and related disciplines, and perform literary, dramatic, musical and other works of art.

**This sub-major group consists of the following minor groups:**

- 291 ARCHIVISTS, CURATORS AND LIBRARIANS**
- 292 SOCIAL SCIENCE AND RELATED PROFESSIONALS**
- 293 WRITERS AND CREATIVE OR PERFORMING ARTISTS**
- 294 RELIGIOUS PROFESSIONALS**

## **291     ARCHIVISTS, CURATORS AND LIBRARIANS**

Archivists, curators and librarians develop and maintain the collection of archives, libraries, museums, art galleries and similar establishments.

### **2911    ARCHIVISTS AND CURATORS**

Archivists and curators organise, develop and maintain archives, museums and art galleries.

#### **Tasks include:**

- \* researching into, appraising, developing, organising and preserving historically significant and valuable documents;
- \* directing or carrying out the preparation of indexes, bibliographies, microfilm copies and other reference aids to the collected materials and making them available to users;
- \* researching into the origin, distribution and use of materials and objects of cultural and historical interest;
- \* organising, developing and maintaining collections of artistic, cultural, scientific or historically significant items in museums or art galleries;
- \* cataloguing of museum and art gallery collections and organising exhibitions;
- \* maintaining records;
- \* performing related tasks;
- \* supervising other workers.

#### **Examples of the occupations classified here:**

- 297/7**    *Archivist*
- 29112**   *Curator, museum*
- 29113**   *Curator, art gallery*

### **2912    LIBRARIANS AND RELATED PROFESSIONALS**

Librarians and related professionals organise, develop and maintain systematic collection of books and other recorded materials and motion picture films and make them available to library users.

#### **Tasks include:**

- \* classifying or supervising classification, indexing, cataloguing, circulation of library materials and maintaining records;
- \* selecting and recommending acquisitions of books and other printed or audio-visually recorded materials;
- \* assisting inquirers and retrieving information from manual files or computerised data bases;
- \* supervising the maintenance of books and other materials;
- \* managing interlibrary loan systems and information networks;
- \* maintaining liaison with other libraries and library associations;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 29121** *Librarian*
- 29122** *Librarian, children's*
- 29123** *Librarian, audio-visual*
- 29124** *Bibliographer*
- 29125** *Cataloguer*
- 29126** *Information scientist, business services*

**292     SOCIAL SCIENCE AND RELATED PROFESSIONALS**

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

**2921    ECONOMISTS**

Economists conduct research to improve or develop economic concepts, theories and operational methods used to understand and describe the behaviour of national and international markets for goods, services and labour, and advise on or apply the knowledge to draw up economic policies and to formulate solutions to present or projected economic problems.

**Tasks include:**

- \* studying, advising on, or dealing with various economic aspects such as production and marketing methods, national and international trade trends, monetary, fiscal and pricing policies, employment, income, productivity and consumption;
- \* compiling, analysing and interpreting economic and statistical data;
- \* preparing reports of research findings;
- \* advising on economic policy and course of action to be followed in the light of analyses of past, present and projected economic factors;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 29277** *Economist*
- 29212** *Econometrician*

**2922    PHILOSOPHERS, HISTORIANS AND POLITICAL SCIENTISTS**

Philosophers, historians and political scientists conduct research and describe past events and activities, including the development of social and economic structures, or cultural and political institutions and movements.

**Tasks include:**

- \* researching mostly by reasoning, into the general causes, principles and meaning of the world, human actions, experience and existence, and interpreting and developing philosophical concepts and theories;

- \* consulting and comparing primary sources such as original contemporary records of past events, and secondary sources such as archaeological or anthropological findings;
- \* extracting relevant material, checking its authenticity, and researching into and describing the history of a particular period, country or region, or a particular facet (for example economic, social or political) of its history;
- \* conducting research in such fields as political philosophy, or past and present theory and practice of political systems, institutions or behaviour;
- \* observing contemporary political institutions and collecting data on them from various sources, including interviews with government and political party officials and other relevant persons;
- \* presenting findings and conclusions for publication or use by government, political parties or other organisations and interested persons;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

**29227** *Philosopher*

**29222** *Historian*

**29223** *Political scientist*

**2923 PSYCHOLOGISTS**

Psychologists research into and study mental processes and behaviour of human beings and apply this knowledge to promote personal, social, educational or occupational adjustment and development.

Tasks include:

- \* planning and carrying out tests to measure mental, physical and other characteristics such as intelligence, abilities, aptitudes, potentialities, etc., interpreting and evaluating results, and providing advice;
- \* analysing the effect of heredity, social, occupational and other factors on individual thought and behaviour;
- \* conducting counselling or therapeutic interviews and providing follow-up services;
- \* maintaining required contacts such as those with family members, educational authorities or employers, and recommending possible solutions to and treatment of problems;
- \* studying psychological factors in the diagnosis, treatment and prevention of mental illnesses and emotional or personality disorders, and conferring with related professionals;
- \* performing related tasks;
- \* supervising other workers.

**Example of the occupations classified here:**

**29230** *Psychologist*

## **2924 SOCIOLOGISTS, ANTHROPOLOGISTS AND RELATED PROFESSIONALS**

Sociologists, anthropologists and related professionals investigate and describe the social structure of societies, the origin and evolution of humanity, and the interdependence between environmental conditions and human activities.

### **Tasks include:**

- \* conducting research on the origin, development, structure, social patterns, organisations and inter-relationships of human society;
- \* tracing the origin and evolution of humanity through the study of changing characteristics and cultural and social institutions;
- \* tracing the development of humanity through the material remains of its past such as dwellings, temples, tools, pottery, coins, weapons or sculpture;
- \* studying physical and climatic aspects of areas and regions and correlating these findings with the economic, social and cultural activities;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

- 29241 Sociologist*
- 29242 Anthropologist*
- 29243 Archaeologist*
- 29244 Geographer*
- 29245 Criminologist*
- 29246 Ethnologist*

## **2925 SOCIAL WORK PROFESSIONALS**

Social work professionals provide guidance to clients in social and related matters to enable them to find and use resources to overcome difficulties and achieve required goals.

### **Tasks include:**

- \* helping individuals and families with personal and social problems;
- \* collecting information relevant to clients' needs and advising them on their rights and obligations;
- \* analysing the client's situation and presenting alternative approaches to resolving problems;
- \* preparing and compiling case records or reports for courts and other legal proceedings;
- \* planning, evaluating, improving and developing welfare services;
- \* providing guidance to potential delinquents and rehabilitation delinquents by organising and supervising social, educational and recreational activities in youth clubs, community centres and similar organisations;
- \* helping physically or mentally handicapped persons to obtain adequate treatment and improve their ability to function in society;
- \* planning, organising or providing home-help services;

- \* monitoring the progress of clients by maintaining contact;
- \* performing related tasks;
- \* supervising other workers.

**Example of the occupations classified here:**

**29250** *Social worker, professional*

**293**     **WRITERS AND CREATIVE OR PERFORMING ARTISTS**

Writers and creative or performing artists conceive and create or perform literary, dramatic, musical and other works of art.

**2931**    **AUTHORS, JOURNALISTS AND OTHER WRITERS**

Authors, journalists and other writers write literary works for publication or dramatic presentation and of artistic production and, appraise merits of literary and other works of art or write and edit news, stories and commentaries.

**Tasks include:**

- \* writing literary works for publication or dramatic presentation;
- \* writing scripts and continuities and preparing programmes for stage, film, radio and television productions;
- \* appraising and writing about merits of literary, musical and other works of art, and about artistic performances;
- \* collecting, reporting and commenting on news and current affairs for publication in newspapers and periodicals or for broadcasting by radio or television;
- \* interviewing politicians and other public figures at press conferences and on other occasions, including individual interviews recorded for radio or television;
- \* writing editorials and selecting, revising, arranging and editing submitted articles for publication broadcasting;
- \* appraising manuscripts submitted for publication in book form, making recommendations thereon and editing or supervising editing of the material;
- \* writing advertising copy promoting particular products or services;
- \* selecting, assembling and preparing publicity materials about business or other organisations for issue through press, radio, television and other media;
- \* designing and writing brochures, handbooks and similar technical publications;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 29311** *Author*
- 29312** *Critic*
- 29313** *Copywriter, advertising*
- 29314** *Writer, fiction*

**29375** *Journalist*  
**29316** *Editor*  
**29317** *Writer, publicity*  
**29318** *Writer, technical*

## **2932 SCULPTORS, PAINTERS AND RELATED ARTISTS**

Sculptors, painters and related artists create and execute artistic works by sculpting, painting, drawing, creating cartoons, engraving or using related techniques.

### **Tasks include:**

- \* creating representational or abstract three-dimensional or relief forms by shaping and combining materials such as wood, wax, stone, clay or metal;
- \* creating representational or abstract drawings and paintings using pencils, ink, oil paints, water colours or through the application of other techniques;
- \* creating drawings and engraving or etching them on metal, wood or other materials;
- \* creating cartoons to depict persons and events, often in caricature;
- \* creating and executing designs and illustrations for books, magazines, advertising and similar purposes;
- \* restoring damaged, soiled and faded paintings and other art objects;
- \* painting miniatures;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

**29321** *Sculptor*  
**29322** *Artist*  
**29323** *Cartoonist/ animator*  
**29324** *Engraver-etcher, artistic*  
**29325** *Restorer, painting*  
**29326** *Artist, painting*  
**29327** *Artist, landscape*  
**29328** *Artist, computer/visualiser*

## **2933 COMPOSERS, MUSICIANS AND SINGERS**

Composers, musicians and singers compose and adapt musical works and conduct or participate in performances.

### **Tasks include:**

- \* auditioning and selecting musicians and singers and selecting music for performance;
- \* conceiving and writing musical compositions;
- \* adapting or arranging music for instrumental groups, instruments or occasions;
- \* conducting instrumental or vocal groups;

- \* playing one or more musical instruments as a soloist or as a member of an orchestra;
- \* singing as soloists or members of vocal groups;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 29331** *Instrumentalist*
- 29332** *Composer, music*
- 29333** *Orchestrator*
- 29334** *Conductor, band*
- 29335** *Conductor, vocal group*
- 29336** *Singer/vocalist*
- 29337** *Director, music*
- 29338** *Musicologist*

**2934 CHOREOGRAPHERS AND DANCERS**

Choreographers and dancers conceive and create or perform dances to entertain audiences.

**Tasks include:**

- \* conceiving and creating dances, which often convey a story, theme, idea or mood, by a pattern of steps, movements and gestures;
- \* arranging and directing dance performances for stage or film production; "
- \* performing dances as a soloist, with a partner or as a member of a dancing group;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 29341** *Choreographer*
- 29342** *Dancer*
- 29343** *Director, dance*
- 29344** *Arranger, dance*

**2935 FILM, STAGE AND RELATED PRODUCERS, DIRECTORS AND ACTORS**

Film, stage and related producers, directors and actors direct and act in motion pictures, television or radio productions and stage shows.

**Tasks include:**

- \* studying scripts to determine artistic interpretation, instructing actors on acting methods, and directing all aspects of dramatic productions on stage, television, radio or in motion pictures, including choice of actors, and final decisions concerning costumes, set designs, sound or lighting effects;
- \* learning lines and cues and playing parts in dramatic productions on stage, television, radio or in motion pictures;
- \* telling stories or reading literary works aloud to educate or entertain listeners;

- \* viewing processed film or video tape to evaluate and select scenes and determine which scenes need to be re-shot;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 29351 *Actor*
- 29352 *Director, theatrical*
- 29353 *Director, radio and television broadcasting*
- 29354 *Director, photography (motion picture)*
- 29355 *Director, motion picture*
- 29356 *Director, stage*
- 29357 *Editor, film and video*

**294 RELIGIOUS PROFESSIONALS**

Religious professionals perform a variety of activities associated with the beliefs and practices of religious faith.

**2940 RELIGIOUS PROFESSIONALS**

Religious professionals function as perpetrators of the sacred traditions, practices and beliefs and celebrate or administer at the rituals of initiation, preside over ritual re-enactments of creative, redemptive or salvatory events, and offer sacrifices to the gods or to one God.

**Tasks include:**

- \* perpetuating sacred traditions, practices and beliefs;
- \* conducting religious services, rites and ceremonies;
- \* undertaking various administrative and social duties, including attending committees and meetings of religious organisations;
- \* providing spiritual and moral guidance in accordance with the religion professed;
- \* propagating religious doctrines;
- \* preparing and delivering religious sermons and preachings;
- \* conducting classes of religious instruction and supervising prayer and discussion groups, retreats and seminars;
- \* keeping records as required by the local law;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 29401 *Religious professional*
- 29402 *Mufti*
- 29403 *Imam*
- 29404 *Kadhi*
- 29405 *Bilal*
- 29406 *Priest, church*
- 29407 *Priest, Hindu temple*

## **MAJOR GROUP 3: TECHNICIANS AND ASSOCIATE PROFESSIONALS**

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

**This major group consists of the following sub-major groups:**

- 31 PHYSICAL AND ENGINEERING SCIENCE ASSOCIATE PROFESSIONALS**
- 32 LIFE SCIENCE AND HEALTH ASSOCIATE PROFESSIONALS**
- 33 TEACHING ASSOCIATE PROFESSIONALS**
- 34 FINANCE, SALES AND RELATED BUSINESS ASSOCIATE PROFESSIONALS**
- 35 SUPERVISORS**
- 39 ASSOCIATE PROFESSIONALS NOT ELSEWHERE CLASSIFIED**

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

Physical and engineering science associate professionals perform technical tasks connected with research and the application of concepts and operational methods in the field of .physical science as well as computing and engineering, or they control and operate technical equipment, fly aircraft, navigate ships, and investigate safety aspects of manufacturing and other processes and products.

**This sub-major group consists of the following minor groups:**

- 311 PHYSICAL SCIENCE AND ENGINEERING TECHNICIANS**
- 312 COMPUTER SUPPORT TECHNICIANS**
- 313 OPTICAL AND ELECTRONIC EQUIPMENT OPERATORS**
- 314 TRANSPORT CONTROLLERS AND TECHNICIANS**
- 315 BUILDING, PUBLIC HEALTH AND SAFETY AND QUALITY INSPECTORS**

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

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

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

Chemical and physical science technicians, usually under the direction and supervision of physicists, chemists, meteorologists, geologists and related scientists, perform technical tasks connected with research in chemistry, physics, geology, geophysics, meteorology and astronomy, as well as with the development of industrial, medical, military and other practical applications of research results.

**Tasks include:**

- \* collecting samples and preparing materials and equipment for experiments, tests and analyses;
- \* assisting with the design of and performing experiments, tests and analyses;
- \* making observations, calculations/measurements, recording and plotting information and may assist in preparing technical reports and documents for publication;
- \* compiling and maintaining relevant data;
- \* preparing estimates of quantities and costs of materials and labour required for specified projects;
- \* applying technical knowledge in order to identify and solve problems arising in the course of work;
- \* supervising or maintaining and repairing research equipment;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 31111 Technician, physical science*
- 31112 Technician, chemistry*
- 31113 Technician, physics*
- 31114 Technician, soil*
- 31115 Technician, meteorological*
- 31116 Technician, geological*
- 31117 Conductor, laboratory research/plantation*

**3112 CIVIL ENGINEERING TECHNICIANS**

Civil engineering technicians, usually under the direction and supervision of civil engineers, architects or surveyors, perform technical tasks contributory to planning and execution of buildings and civil engineering projects, including design, construction, operation, maintenance and repair of buildings and other structures such as water supply and sewage systems, bridges, roads, dams and airports.

**Tasks include:**

- \* performing or helping with field and laboratory tests of soils and construction materials;
- \* providing technical assistance connected with the construction of buildings and other structures, and with surveys or the preparation of survey reports;
- \* representing building architects and civil engineers on construction sites to ensure compliance with design specifications and maintenance of desired standards of materials and work;
- \* applying technical knowledge of building and civil engineering principles and practices in order to identify and solve problems arising in the course of their work;
- \* assisting with the preparation of estimates of quantities and costs of materials and labour required for projects;
- \* organising maintenance and repairs;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 31121 Technician, engineering/civil*
- 31122 Clerk-of-works*
- 31123 Technician, survey*
- 31124 Estimator, engineering/civil*

**3113 ELECTRICAL ENGINEERING TECHNICIANS**

Electrical engineering technicians perform technical tasks under the direction and supervision of electrical engineers, contributory to the design, construction, installation, maintenance and repair of electrical systems and equipment.

**Tasks include:**

- \* assisting in research and development works concerning electrical systems, equipment and facilities and testing prototypes;
- \* assisting in design and layout of electrical installations and circuitry;
- \* preparing detailed estimates of quantities and costs of materials and labour required for manufacture and installation;
- \* assisting with technical supervision of the manufacture, installation, utilisation, maintenance and repair of electrical systems and equipment;
- \* applying technical knowledge of electrical engineering theory and practice to identify and solve problems arising in the course of their work;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 31131 Technician, engineering/electrical*
- 31132 Technician, engineering/electrical (high voltage)*
- 31133 Technician, engineering/electrical (electric power transmission)*
- 31134 Estimator, engineering/electrical*

**3114 ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING TECHNICIANS**

Electronics and telecommunications engineering technicians, normally under the direction and supervision of electronics engineers, perform technical tasks connected with electronic and telecommunications engineering research, as well as with the design, manufacture, assembly, construction, operation, maintenance and repair of electronic equipment and electronic and electromechanical telecommunications systems.

**Tasks include:**

- \* assisting in research and development works concerning electronic and telecommunications equipment;
- \* assisting in design and layout of electronic circuitry;
- \* preparing detailed estimates of quantities and costs of materials and labour required for the manufacture and installation of electronic and telecommunications equipment;

- \* assisting with technical supervision of the manufacture, utilisation, maintenance and repair of electronic equipment and telecommunications systems to ensure satisfactory performance and compliance with specifications and regulations;
- \* applying technical knowledge of electronic and telecommunications engineering principles and practices in order to direct, locate and resolve defects or faults;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 31141 Technician, engineering/electronics*
- 31142 Technician, engineering/telecommunications*
- 31143 Technician, computer*
- 31144 Technician, semi-conductor*
- 31145 Technician, audio and video equipment*
- 31146 Estimator, engineering/electronics*

**3115 MECHANICAL ENGINEERING TECHNICIANS**

Mechanical engineering technicians perform technical tasks, normally under the direction and supervision of mechanical engineers, contributory to design, development, manufacture, construction, installation, maintenance and repair of mechanically functioning plant and equipment.

**Tasks include:**

- \* assisting in research and development works concerning machine tools, engines vehicles, aeroplanes, heating and ventilating and refrigerating installations and other mechanically functioning plant and equipment;
- \* designing and preparing layouts of machines and mechanical installations;
- \* preparing detailed estimates of quantities and costs of materials and labour required for manufacture and installation;
- \* assisting with technical supervision of manufacture, utilisation, maintenance and repair of mechanical plant and engines;
- \* applying technical knowledge of machinery and mechanical engineering principles and practices in order to identify and solve problems arising in the course of their work;
- \* assisting in the development and monitoring the implementation of safety standards and procedures for marine survey work in relation to ships' hulls, equipment and cargoes;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 3/757 Technician, engineering/mechanical*
- 31152 Technician, engineering/mechanical (motors and engines)*
- 31153 Technician, engineering/automobile*
- 31154 Technician, engineering/aerospace or aeronautical (mechanical)*
- 31155 Technician, engineering/refrigeration and air-conditioning systems and equipment*
- 31156 Technician, engineering/marine*
- 31157 Estimator, engineering/mechanical*
- 31158 Technician, test*

### **3116 CHEMICAL ENGINEERING TECHNICIANS**

Chemical engineering technicians perform technical tasks, normally under the direction and supervision of chemical engineers, contributory to the development of processes, construction, operation, maintenance and repair of chemical plant.

#### **Tasks include:**

- \* assisting in research to develop new or improved processes and manufacturing plant for the chemical or physical transformation of substances on a commercial scale;
- \* designing and preparing layouts of chemical plant according to the specifications given;
- \* preparing detailed estimates of quantities and costs of materials and labour required for manufacture and installation of plant;
- \* providing technical supervision of the construction, installation, operation, maintenance and repair of chemical plant to ensure satisfactory performance and compliance with specifications and regulations;
- \* applying technical knowledge of chemical engineering principles and practices in order to identify and solve problems arising in the course of their work;
- \* performing related tasks;
- \* supervising other workers.

#### **Examples of the occupations classified here:**

- 31161 Technician, engineering/chemical*
- 31162 Technician, engineering/chemical (petroleum)*
- 31163 Core analyst (petroleum and natural gas)*
- 31164 Estimator, engineering/chemical*

### **3117 MINING AND METALLURGICAL TECHNICIANS**

Mining and metallurgical technicians perform technical tasks, normally under the direction and supervision of mining and metallurgical engineers, contributory to the improvement, development of and control of processes for the extraction of metallic and non-metallic minerals from the earth for further processing.

#### **Tasks include:**

- \* assisting in research and development works concerning properties of metal and new alloys, or of improved methods for the extraction of solid minerals, oil and natural gas, and for transporting and storing oil and natural gas, or testing prototypes;
- \* assisting in geological and topographical surveys, and in the design and layout of oil, natural gas and mineral ore extraction and transport systems, and processing and refining plant for minerals and metals;
- \* preparing estimates of quantities and costs of materials and labour required for mineral, oil and natural gas exploration, extraction and transport projects and plant, and for processing and refining minerals;
- \* assisting in technical supervision of the construction, installation, operation, maintenance and repair of mineral ore, oil and natural gas exploration, extraction, transport and storage installations and mineral processing plant to ensure satisfactory performance and compliance with specifications and regulations;

- \* applying knowledge of mining, of oil and natural gas extraction, transport and storage, and of metallurgical principles and practices in order to identify and solve problems arising in the course of their work;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 31171 Technician, metallurgy/extractive*
- 31172 Technician, metallurgy/physical*
- 31173 Technician, engineering/mining*
- 31174 Technician, petroleum and natural gas extraction*

**3118 DRAUGHTSPERSONS**

Draughtspersons prepare technical drawings, maps and illustrations from sketches, measurements and other data, and copy drawings and paintings onto printing plates.

**Tasks include:**

- \* preparing architects' and designers' working drawings from sketches and specifications for the manufacture and installation of machinery and equipment or for the construction of buildings, dams, bridges, roads and other civil engineering projects;
- \* operating computer-assisted drawing equipment to create, modify and generate hard-copy and digital representations of working drawings;
- \* operating digitising table or similar equipment to transfer hard copy representation of working drawings, maps and other curves to digital form;
- \* capturing topographical data in analogue or digital form using stereo instruments to prepare and revise topographical, hydrographic, utility and other thematic maps;
- \* preparing and revising illustrations for reference works, brochures and technical manuals dealing with the assembly, installation, operation, maintenance and repair of machinery and other equipment;
- \* copying drawings and paintings onto stone or metal plates for printing;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 31181 Draughtsperson*
- 31182 Draughtsperson, engineering/civil*
- 31183 Draughtsperson, architectural*
- 31184 Draughtsperson, engineering/marine*
- 31185 Draughtsperson, engineering/electrical*
- 31186 Draughtsperson, engineering/mechanical*
- 31187 Draughtsperson, cartographical*
- 31188 Draughtsperson, geological*

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

This unit group covers physical and engineering science technicians not classified elsewhere in Minor Group 311: Physical Science and Engineering Technicians. For instance here should be classified those who assist engineers with production engineering matters, time and motion studies, or preparation of cost estimates and bills of quantities.

#### **Tasks include:**

- \* collecting data and providing technical assistance regarding planning and production methods, efficient, safe and economic utilisation of personnel, material and equipment, methods of work and sequence of operations and supervision of their implementation, time and motion aspects of work organisation and efficient layout of plant or establishment;
- \* identifying potential hazards and introducing safety procedures and devices;
- \* collecting data and providing technical assistance regarding the preparation and monitoring of cost estimates and bills of quantities for construction and architectural projects;
- \* activating industrial robots, programming or reprogramming them for specific functions, controlling their operation and providing basic maintenance and on-the-job adjustments;
- \* translating architects' working drawings from sketches and specifications for the manufacture and installation of machinery and equipment or for the construction of buildings, dams, bridges, roads and other civil engineering projects, to be worked out by draughtspersons;
- \* performing related tasks;
- \* supervising other workers.

#### **Examples of the occupations classified here:**

- 31191 Technician, CAD/CAM*
- 31192 Technician, automation/robot*
- 31193 Technician, mechatronics*
- 31194 Technician, quantity surveying*
- 31195 Technician, engineering/industrial efficiency*
- 31196 Technician, engineering/value*
- 31197 Technician, engineering/safety*
- 31198 Designer, engineering*

### **312 COMPUTER SUPPORT TECHNICIANS**

Computer support technicians provide technical advice and support to users of computer software and hardware.

#### **3120 COMPUTER SUPPORT TECHNICIANS**

Computer support technicians provide technical advice and support to users of computer software and hardware.

#### **Tasks include:**

- \* determining software and hardware requirements to provide solutions to problems;
- \* adapting existing programmes to meet users' requirements;
- \* answering queries on software and hardware problems;

- \* performing software and hardware installations;
- \* monitoring information technology services and performing troubleshooting;
- \* providing customer technical support to end-users;
- \* ensuring efficient use of applications and equipment;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

**31201** *Technician, help desk*

**31202** *Technician, network support*

**313 OPTICAL AND ELECTRONIC EQUIPMENT OPERATORS**

Optical and electronic equipment operators take photographs, control motion picture and video cameras and other equipment to record and edit images and sound, control broadcasting and telecommunications equipment and systems, as well as technical equipment used for medical diagnosis or treatment.

**3131 PHOTOGRAPHERS AND IMAGE AND SOUND RECORDING EQUIPMENT OPERATORS**

Photographers and image and sound recording equipment operators take photographs, operate motion picture and video cameras and other equipment to record and edit images and sound.

**Tasks include:**

- \* consulting with clients to determine objectives of photograph assignment;
- \* studying requirements of assignment and selecting type of camera, film and lighting;
- \* working from a studio or transporting and setting up equipment at assigned locations;
- \* taking photographs for advertising or other commercial, industrial or scientific purposes and to illustrate stories and articles in newspapers, magazines, books and other publications;
- \* taking portrait photographs of persons and groups of persons;
- \* setting and operating motion picture, video, microscopic and other specialised cameras, including those for aerial photography to record images;
- \* controlling equipment to record sound for motion pictures, videotapes, gramophone records, audio tapes, digital discs, direct broadcasting or other purposes;
- \* controlling equipment to edit and mix image and sound recordings to ensure satisfactory quality and to create special image and sound effects;
- \* may work with digital technology and manipulate resulting images on computer;
- \* applying principles and practices of image and sound recording and editing in order to identify and solve problems arising in the course of their work;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 31311 Photographer*
- 31312 Photographer, commercial illustration*
- 31313 Photographer, news*
- 31314 Photographer, aerial*
- 31315 Assistant, motion picture*
- 31316 Operator, camera/television*
- 31317 Operator, studio equipment/radio and television*
- 31318 Operator, recording equipment/sound and image*

**3132 BROADCASTING AND TELECOMMUNICATIONS EQUIPMENT OPERATORS**

Broadcasting and telecommunications equipment operators control technical functioning of equipment for transmitting radio and television broadcasts of pre-recorded or live images and sounds, as well as other types of telecommunications signals on land and sea or in aircraft.

**Tasks include:**

- \* operating and controlling transmitting and broadcasting systems and satellite systems for radio and television programmes;
- \* controlling radio communications systems, satellite services and multiplex systems on land, sea or air;
- \* controlling cinema projection equipment;
- \* applying knowledge of principles and practices of broadcasting, telecommunications terminals and transmission systems, in order to identify and solve problems arising in the course of their work and maintain equipment;
- \* keeping logs of operations;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 31321 Operator, telecommunications equipment*
- 31322 Telegrapher*
- 31323 Operator, radio equipment/land-based*
- 31324 Ship's radio officer*
- 31325 Operator, radio equipment/flight*
- 31326 Operator, transmitting equipment/radio and television*
- 31327 Operator, broadcasting equipment/radio and television*
- 31328 Projectionist, cinema*

**3139 OPTICAL AND ELECTRONIC EQUIPMENT OPERATORS NOT ELSEWHERE CLASSIFIED**

This unit group covers optical and electronic equipment operators not classified elsewhere in Minor Group 313: Optical and Electronic Equipment Operators, including those who are engaged in controlling technical equipment used to diagnose or treat illnesses and disorders.

**Tasks include:**

- \* performing medical imaging on patients according to referral from medical practitioners;
- \* treating patients according to prescription from medical oncology specialists, calculating length and intensity of exposure to radiation and size and strength of dosage of isotopes;
- \* preparing radioactive materials for use in radiation scanning or radiation treatments;
- \* positioning patients, screens and equipment preparatory to procedure;
- \* operating X-ray machines, radiation scanners and fluoroscopes to diagnose illnesses and disorders of the nervous system and organs;
- \* compiling electronic or photographic records of tests for diagnostic purposes;
- \* applying knowledge of technical equipment and some principles and practices of medicine in order to identify and solve problems arising in the course of their work and maintain equipment;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 31391 Operator, medical X-ray equipment*
- 31392 Operator, electrocardiograph equipment*
- 31393 Operator, scanning equipment*
- 31394 Sonographer*

**314     TRANSPORT CONTROLLERS AND TECHNICIANS**

Transport controllers and technicians supervise land, air and waterborne transport service operations.

**3141    SHIP'S ENGINEERS**

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

**Tasks include:**

- \* controlling and participating in the operation, maintenance and repair of mechanical, electrical and electronic equipment and machinery on board ship;
- \* ordering fuel and other engine room department stores and maintaining record of operations;
- \* performing technical supervision of the installation, maintenance and repair of ship's machinery and equipment to ensure compliance with specifications and regulations;
- \* co-ordinating tests on equipment and diagnosing faults;
- \* applying knowledge of principles and practices relating to ship's machinery and equipment in order to identify and solve problems arising in the course of their work;
- \* maintaining records of operation of engineering department;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 31411 Engineer, chief/ship*
- 31412 Engineer officer, ship*
- 31413 Marine superintendent, technical*

**3142 SHIP'S DECK OFFICERS AND PILOTS**

Ship's deck officers and pilots command and navigate ships and direct marine services on shore for vessels arriving in port.

**Tasks include:**

- \* commanding and navigating ship, seagoing or inland waterway vessels by supervising the ship's course and speed according to passage plan and safety;
- \* planning, supervising and co-ordinating deck and bridge-watch activities on vessels;
- \* navigating vessels into and out of ports and through straits and other waters where special knowledge and skill are required;
- \* ensuring safe and efficient loading and unloading of cargo and observance of safety regulations and procedures by crew and passengers;
- \* performing technical supervision of maintenance and repair of ship to ensure compliance with specifications and regulations;
- \* directing or arranging supply of ship's stores and equipment, recruitment of crews and provision of other services (except food) for vessels arriving in port;
- \* managing and maintaining inventory, records and documentation;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 31421 Ship's captain/master*
- 31422 Pilot, ship*
- 31423 Harbour master*
- 31424 Ship's navigator*
- 31425 Ferry captain*
- 31426 Marine superintendent (deck)*
- 31427 Berthing master*
- 31428 Skipper, yacht*

**3143 AIRCRAFT PILOTS AND RELATED ASSOCIATE PROFESSIONALS**

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

**Tasks include:**

- \* flying and navigating aircraft in accordance with established control and operating procedures;
- \* preparing and submitting flight plan or examining standard flight plan;

- \* flying aircraft in accordance with established air traffic control and aircraft operating procedures;
- \* giving in-flight instruction, supervising solo flights, accompanying students on training flights and demonstrating techniques for controlling aircraft;
- \* 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;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 31431** *Pilot, aircraft*
- 31432** *Engineer, flight*
- 31433** *Navigator, flight*
- 31434** *Pilot, helicopter*
- 31435** *Pilot, test*
- 31436** *Instructor, flight*

**3144 AIR TRAFFIC CONTROLLERS**

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

**Tasks include:**

- \* directing and controlling aircraft approaching and leaving airport and their movement on the ground/aerodromes by issuing runway clearances and directing taxiing, take offs and landings;
- \* directing and controlling aircraft movements in the air using radar or non-radar procedures and directing aircraft by radio;
- \* checking flight plans, position reports, flight levels, estimated arrival times at reporting points or destinations and authorising changes of flight levels and altitudes;
- \* informing flight crew and operations staff about weather conditions, operational facilities, flight plans and air traffic;
- \* controlling the operation of airport lighting systems such as runway and approach lights and aerodrome beacons;
- \* 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 organising emergency, search and rescue services when aircraft are in distress;
- \* performing related tasks;
- \* supervising other workers.

**Example of the occupations classified here:**

- 31440** *Controller, air traffic*

### **3145 TRANSPORT CONTROLLERS**

Transport controllers direct and supervise service operations of a transport undertaking to ensure efficient operations in accordance with safety regulation and time schedules.

#### **Tasks include:**

- \* supervising and co-ordinating one or more of the service activities of the traffic department of a railway undertaking;
- \* directing and supervising activities of bus conductors and drivers within a limited geographical area;
- \* directing and supervising loading and unloading ships' cargo;
- \* performing related tasks;
- \* supervising other workers.

#### **Examples of the occupations classified here:**

- 31451 Railway service supervisor*
- 31452 Road transport service supervisor*
- 31453 Traffic supervisor (ships' cargo)*
- 31454 LRT railway supervisor*

### **3149 TRANSPORT CONTROLLERS AND TECHNICIANS NOT ELSEWHERE CLASSIFIED**

This unit group covers transport controllers and technicians outside the scope of unit groups 3141 \* 3145.

#### **Tasks include:**

- \* receiving and despatching cargo and mail through aircraft;
- \* supervising and distributing weights evenly in aircraft;
- \* controlling movement of rail traffic, arranging crossing of trains, ensuring efficient utilisation of wagons and controlling formation of goods trains at junction stations;
- \* performing technical tasks concerning the design, installation, operation, maintenance and repair of air traffic control and navigational systems;
- \* performing related tasks;
- \* supervising other workers.

#### **Examples of the occupations classified here:**

- 31491 Air-cargo officer*
- 31492 Load-sheet officer*
- 31493 Technician, air traffic safety*
- 31494 LRT operations officer*
- 31495 Controller, train*

### **315 BUILDING, PUBLIC HEALTH AND SAFETY AND QUALITY INSPECTORS**

Building, public health and safety and quality inspectors enforce the rules and regulations relating to fire prevention and other hazards, occupational safety, protection of health and environment, safety of production processes, and goods and services produced, used or sold, as well as those relating to the quality standards and specifications of manufacturers.

#### **3151 BUILDING AND FIRE INSPECTORS**

Building and fire inspectors, on behalf of the government or industrial and other enterprises, inspect new and existing houses, industrial plant, hotels and other buildings and structures to ensure compliance with building, grading and zoning laws and with approved plans, specifications and standards, or inspect fire-prevention systems and investigate fire sites to determine the cause of fire.

##### **Tasks include:**

- \* advising those erecting buildings and other structures on the implementation of building, grading and zoning laws as well as other rules concerning quality and safety of buildings;
- \* inspecting buildings and structures during and after construction to ensure that they comply with building, grading, zoning and safety laws and approved plans, specifications and standards as well as with other rules concerning quality and safety of buildings;
- \* inspecting existing buildings and structures to determine whether lack of proper maintenance, housing violations or hazardous conditions exist;
- \* inspecting industrial plant, hotels, cinemas and other buildings and structures to detect fire hazards and advise on how they can be removed;
- \* advising on the installation of fire detectors and sprinkler systems and the use of materials in the construction of buildings and means of transportation to reduce risk of fire and extent of damage and danger if fire occurs;
- \* investigating fire sites to determine the cause of fire;
- \* performing related tasks;
- \* supervising other workers.

##### **Examples of the occupations classified here:**

**31511** *Inspector, building*

**31512** *Inspector, fire and safety*

**31513** *Specialist, fire prevention*

#### **3152 SAFETY, HEALTH AND QUALITY INSPECTORS**

Safety, health and quality inspectors, on behalf of the government or industrial and other enterprises, inspect places of work on the grounds of occupational safety, and safety of production processes, or of goods produced, used or sold, and ensure compliance with health and environment protection rules and regulations as well as with the quality standards and specifications of manufacturers.

**Tasks include:**

- \* advising employers' and workers' representatives on the implementation of government and other rules and regulations concerning occupational safety and the working environment;
- \* inspecting places of work to ensure that the working environment, machinery and equipment conform to government and other rules and regulations;
- \* inspecting places of work and by interviews, observations and other means, obtaining facts about work practices and accidents to determine compliance with safety rules and regulations;
- \* inspecting areas of production, processing, transport, handling, storage and sale of products to ensure conformity with government and other rules and regulations;
- \* inspecting finished products or parts for conformity with manufacturers' specifications and standards;
- \* advising enterprises and the general public on the implementation of government and other rules and regulations concerning hygiene, sanitation, purity and grading of primary products, food, drugs, cosmetics and similar goods;
- \* advising producers, operators and those maintaining and repairing aircraft, cars and other vehicles on the implementation of government and other rules and regulations concerning technical standards and conditions of vehicles;
- \* inspecting vehicles and places authorised to maintain and repair vehicles to ensure that they conform to technical standards and government and other regulations;
- \* inspecting establishments to ensure that they conform to government and other rules and regulations concerning emission of pollutants and disposal of dangerous wastes;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 31521 Inspector, occupational health and safety*
- 31522 Inspector, public health*
- 31523 Inspector, safety/vehicles*
- 31524 Inspector, quality/products*
- 31525 Inspector, safety and health/consumer protection*
- 31526 Inspector, safety and health/pollution*

**32 LIFE SCIENCE AND HEALTH ASSOCIATE PROFESSIONALS |**

Life science and health associate professionals perform technical tasks related to research and the practical application of concepts, theories, principles and operational methods particular to life sciences, including agriculture, forestry, sanitation, medicine, veterinary medicine, pharmacy and related fields, and provide nursing, midwifery, traditional medicine and faith healing care.

**This sub-major group consists of the following minor groups:**

- 321 LIFE SCIENCE TECHNICIANS AND RELATED ASSOCIATE PROFESSIONALS**
- 322 MODERN HEALTH ASSOCIATE PROFESSIONALS (EXCEPT NURSING)**
- 323 NURSING AND MIDWIFERY ASSOCIATE PROFESSIONALS**
- 324 TRADITIONAL MEDICINE PRACTITIONERS AND FAITH HEALERS**

## **321 LIFE SCIENCE TECHNICIANS AND RELATED ASSOCIATE PROFESSIONALS**

Life science technicians and related associate professionals perform technical tasks related to research and the practical application of concepts, principles and operational methods connected with life sciences such as biology, botany, zoology, bacteriology and biochemistry, as well as to agriculture, agronomy and forestry.

### **3211 LIFE SCIENCE TECHNICIANS**

Life science technicians perform technical tasks, normally under the direction and supervision of life scientists, contributory to research scientific knowledge in the field of life sciences and to develop industrial, agricultural, medical, public health and other practical applications of research results.

#### **Tasks include:**

- \* preparing and collecting specimens, materials and equipment and growing cultures of micro organism for tests, analyses and experiments;
- \* assisting with and performing experiments, tests, analyses and recording observation results and other relevant information using laboratory instruments and equipment;
- \* collecting data and estimating quantities and costs of materials and labour required for projects;
- \* organising maintenance and repair of research equipment;
- \* applying knowledge of scientific principles and practices in order to identify and solve problems arising in the course of their work;
- \* preparing, stuffing and mounting skins of animals in lifelike form;
- \* performing related tasks;
- \* supervising other workers.

#### **Examples of the occupations classified here:**

- 32111 Technician, biological*
- 32112 Technician, entomological*
- 32113 Technician, botanical*
- 32114 Technician, artificial breeding*
- 32115 Technician, zoological*
- 32116 Taxidermist*

### **3212 AGRONOMY AND FORESTRY TECHNICIANS**

Agronomy and forestry technicians perform technical tasks connected with research in agronomy and forestry, as well as with the development of agricultural and forestry applications of research results.

#### **Tasks include:**

- \* preparing and collecting specimens, materials and equipment for experiments, tests and analyses;
- \* assisting with and performing experiments, tests, analyses and recording observation results and other relevant information using laboratory instruments and equipment;

- \* analysing samples of seeds for quality, purity and germination rating;
- \* collecting data and estimating quantities and costs of materials and labour required for projects;
- \* organising maintenance and repair of research equipment;
- \* applying knowledge of scientific principles and practices in order to identify and solve problems arising in the course of their work;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 0**      *Technician, agronomy*
- 1**      *Technician, forestry*
- 2**      *Technician, soil science*
- 3**      *Technician, horticulture*

**3213 FARMING AND FORESTRY ADVISERS**

Farming and forestry advisers provide technical assistance and advice on farming and forestry methods and problems.

**Tasks include:**

- \* keeping abreast of advances in farming or forestry methods and techniques;
- \* advising on ways of raising quality of output, increasing yield and measures to increase efficiency of operations and to conserve natural assets and the environment;
- \* visiting farms and advising on measures to deal with problems such as soil erosion or pest infestation;
- \* collecting data and estimating quantities and costs of materials and labour required for projects;
- \* organising demonstrations, giving lectures, writing and distributing materials to promote adoption of improved practices and techniques;
- \* applying knowledge of scientific principles and practices in order to identify and solve problems arising in the course of their work;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 32131** *Adviser, farming*
- 32132** *Adviser, forestry*
- 32133** *Farm demonstrator*

**322 MODERN HEALTH ASSOCIATE PROFESSIONALS (EXCEPT NURSING)**

Modern health associate professionals (except nursing) perform technical tasks related to research and the practical application of concepts, principles and operational methods in the fields of medicine, veterinary medicine, dentistry, pharmacy, sanitation, promotion of health and related disciplines.

## **3221 MEDICAL ASSISTANTS**

Medical assistants carry out advisory, diagnostic, preventive and curative medical tasks, more limited in scope and complexity than those carried out by medical doctors. They work independently or with the guidance and supervision of medical doctors in institutions or in the field as part of the public health service, and may work mainly with diseases and disorders common in their region, or mainly apply specific types of treatment.

### **Tasks include:**

- \* advising communities and individuals on hygiene, diet and other preventive medical measures;
- \* conducting medical examinations to diagnose illness and/or refer more difficult cases to medical doctors if and when necessary;
- \* prescribing medicine and giving treatment for diagnosed illnesses, disorders or injuries;
- \* performing simple surgical operations;
- \* performing related tasks;
- \* supervising other workers.

### **Example of the occupations classified here:**

**32210** *Assistant, medical*

## **3222 SANITARIANS**

Sanitarians inspect environment, private and public buildings and properties to ensure the maintenance of health and hygiene standards.

### **Tasks include:**

- \* inspecting business and residential premises and public areas to detect unsanitary conditions and health hazards;
- \* giving advise on environment sanitary problems and techniques;
- \* collecting samples of water to test for contamination and of food for adulteration and deviation from standards;
- \* promoting preventive and corrective measures such as control of disease carrying organisms and of harmful substances in the air, hygienic food handling, proper disposal of waste and cleaning of public places;
- \* organising campaigns, giving lectures and distributing material to promote adoption of improved practices and techniques;
- \* applying knowledge of hygiene and sanitation principles and practices in order to identify and solve problems arising in the course of their work;
- \* preparing and submitting reports;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

**32221** *Sanitarian*

**32222** *Inspector, sanitary*

## **3223 DIETICIANS AND NUTRITIONISTS**

Dieticians and nutritionists plan and supervise the preparation of diets for individuals or groups, supervise and evaluate health programmes and assist in appraising the various factors related to nutrition and food problems in the community.

### **Tasks include:**

- \* providing nutrition assessments, management, education, research and training;
- \* collecting, organising and assessing data relating to health and nutritional status of individuals and groups;
- \* monitoring food intake and quality to provide nutritional care;
- \* planning and directing the preparation of therapeutic and other diets/menus for individuals or groups in hospitals, institutions and other establishments;
- \* participating in programmes of nutrition education and in nutrition rehabilitation activities;
- \* advising on nutrition aspects of community food issues and health programmes;
- \* keeping up with knowledge in related fields and maintaining contacts with appropriate professionals;
- \* preparing educational materials and giving talks and lectures on diet and nutrition;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

- 32231 Dietician*
- 32232 Nutritionist*
- 32233 Dietician, therapeutic*
- 32234 Nutritionist, research*
- 32235 Consultant, dietetic/food processing*

## **3224 OPTOMETRISTS AND OPTICIANS**

Optometrists and opticians examine eyes, prescribe and fit lenses for spectacles and contact lenses and advise on their use or the use of other visual aids.

### **Tasks include:**

- \* examining eyes and performing vision tests to determine the nature and extent of vision problems and abnormalities;
- \* prescribing spectacles and contact lenses or other treatment to improve vision;
- \* advising on the proper use and care of spectacles and contact lenses, appropriate lighting for work or reading and other visual aids;
- \* fitting prescribed lenses into frames and fitting frames or contact lenses to customers;
- \* referring clients with ocular disease symptoms to a physician;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

**32241** *Optician*

**32242** *Optometrist*

**3225 DENTAL ASSISTANTS**

Dental assistants carry out advisory, diagnostic, preventive and curative dental tasks, more limited in scope and complexity than those carried out by dentists, and they assist dentists by preparing and taking care of instruments and other equipment, preparing materials and helping patients prepare for examination and treatment.

**Tasks include:**

- \* advising communities and individuals on dental hygiene, diet and other preventive dental measures;
- \* conducting dental examinations to make diagnoses and refer more difficult cases to dentists when needed;
- \* cleaning teeth, preparing cavities and placing fillings;
- \* extracting teeth under anaesthetics;
- \* preparing and taking care of dental instruments and equipment;
- \* preparing dental materials;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

**32257** *Nurse, dental*

**32252** *Assistant, dental*

**3226 PHYSIOTHERAPISTS AND RELATED ASSOCIATE PROFESSIONALS**

Physiotherapists and related associate professionals provide special medical therapeutic services to rehabilitate injured and mentally and physically disabled persons.

**Tasks include:**

- \* advising communities and individuals on correct body postures for work or otherwise, to avoid injuries and strain and to strengthen muscles;
- \* conducting examinations to make diagnoses of disorders of bones, muscles and parts of the circulatory or the nervous system to determine proper treatment or refer to medical doctors, if necessary;
- \* treating disorders of bones, muscles and parts of the circulatory or the nervous system by manipulative methods, and the use of ultrasound, heating, laser or similar techniques;
- \* massaging client to improve blood circulation, soothe or stimulate nerves, facilitate elimination of waste matter, stretch contracted tendons and produce other therapeutic effects;
- \* applying physiotherapy and related techniques as part of the treatment of the physically or mentally disabled persons;

- \* prescribing exercises for rehabilitation and/or prevention;
- \* participating in planned medically oriented vocational, educational or recreational activities designed to rehabilitate physically and mentally disabled persons;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 32261** *Physiotherapist*
- 32262** *Therapist, occupational*
- 32263** *Masseur, therapeutic*
- 32264** *Podiatrist*
- 32265** *Chiropractor*
- 32266** *Osteopath, lay*

**3227 VETERINARY ASSISTANTS**

Veterinary assistants carry out advisory, diagnostic, preventive and curative veterinary tasks, more limited in scope and complexity than those carried out by veterinarians, and they assist veterinarians by preparing materials and getting animals ready for examination and treatment.

**Tasks include:**

- \* advising communities and individuals on the treatment of animals and their diseases and injuries;
- \* conducting examinations of animals to make diagnoses or refer more difficult cases to veterinarians when needed;
- \* treating ill or injured animals, especially for common diseases and disorders;
- \* preparing and taking care of instruments and materials used in the treatment of animals;
- \* carrying out technical tasks connected with artificial insemination of animals;
- \* getting animals ready for examination or treatment and holding them during treatment, when necessary;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 32271** *Assistant, veterinary*
- 32272** *Assistant, veterinary/artificial insemination*
- 32273** *Vaccinator, veterinary*

**3228 PHARMACEUTICAL ASSISTANTS**

Pharmaceutical assistants dispense and prepare medicaments, lotions and mixtures under the guidance of pharmacists, in pharmacies, hospitals and dispensaries.

**Tasks include:**

- \* preparing medicaments and other pharmaceutical compounds under the guidance of pharmacists;
- \* dispensing medicines and drugs and giving written and oral instructions on their use, as prescribed by medical doctors, veterinarians or other authorised workers;
- \* cleaning and preparing equipment and containers used to prepare and dispense medicine and pharmaceutical compounds;
- \* conducting routine laboratory tests to determine characteristics of pharmaceutical products;
- \* performing related tasks;
- \* supervising other workers.

**Example of the occupations classified here:**

**32280** *Assistant, pharmaceutical*

**3229 MODERN HEALTH ASSOCIATE PROFESSIONALS (EXCEPT NURSING) NOT ELSEWHERE CLASSIFIED**

This unit group covers modern health associate professionals (except nursing) not classified elsewhere in Minor Group 322: Modern Health Associate Professionals (except nursing). For instance, here should be classified those who practise homeopathy and plan and deal with speech impediments or deal with orientation problems of the blind.

**Tasks include:**

- \* determining the nature of illness or condition affecting the patient;
- \* treating a particular illness, by giving patient infinitesimal doses of the bodies which provoke similar illnesses;
- \* writing specifications for artificial limbs or other appliances and helping to fit them and explaining their use;
- \* specialising in diagnostic evaluation, habilitative and rehabilitative services and research related to hearing;
- \* assisting patients under medical direction, to overcome or minimise the effects or defects and disorders of speech;
- \* treating orientation of the blind;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

**32291** *Technician, orthopaedic*

**32292** *Audiologist*

**32293** *Therapist, speech*

**32294** *Homeopath*

**32295** *Naturopath*

### **323    NURSING AND MIDWIFERY ASSOCIATE PROFESSIONALS**

Nursing and midwifery associate professionals (except dental) apply medical concepts and principles relating to the delivery of babies and to nursing of the ill, injured or disabled, and of mothers and their new-born babies.

#### **3231    NURSING ASSOCIATE PROFESSIONALS (EXCEPT DENTAL)**

Nursing associate professionals (except dental) provide nursing care for the sick, injured and others in need of such care, and in the absence of medical doctors, deal with emergencies.

**Tasks include:**

- \* providing nursing care, treatment and advice to the ill, injured, disabled and others in need of such care;
- \* assisting medical doctors in their tasks, administering medicine and drugs, applying surgical dressings and giving other forms of treatment under instructions from physicians;
- \* assisting in giving first-aid treatment in emergencies;
- \* assisting in preparations for physical and psychiatric treatment of mentally ill patients;
- \* assisting in preparations for social adjustment, development and education of mentally or physically handicapped patients;
- \* providing nursing care to patients in their homes;
- \* providing nursing services, care and advice within a community or at a workplace;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

**32311** *Nurse*

**32312** *Nurse, specialised*

**32313** *Nurse, industrial*

#### **3232    MIDWIFERY ASSOCIATE PROFESSIONALS**

Midwifery associate professionals deliver or assist doctors in the delivery of babies, provide ante-natal and post-natal care and advise parents in baby care.

**Tasks include:**

- \* advising expectant mothers on appropriate diet, exercises and behaviour to ease pregnancy and childbirth, and noting their general health and progress;
- \* delivering babies, or, more often, assisting doctors in deliveries;
- \* attending mothers in the post-natal period to supervise their recovery, to check on babies' progress and to advise parents in baby care;
- \* conducting health education classes and seminars to promote the health of mothers and infants;
- \* advising on and administering birth control methods;
- \* performing related tasks;
- \* supervising other workers.

**Example of the occupations classified here:**

*32320 Midwife*

**324 TRADITIONAL MEDICINE PRACTITIONERS AND FAITH HEALERS**

Traditional medicine practitioners and faith healers advise on methods to preserve or improve health and treat human mental and physical illness by techniques traditionally used in the community or by power of faith and spiritual advice.

**3241 TRADITIONAL MEDICINE PRACTITIONERS**

Traditional medicine practitioners treat human mental and physical sickness by herbs, medicinal plants and other techniques traditionally used in the community and advise on methods to preserve or improve health and well-being of a person.

**Tasks include:**

- \* examining patients, making diagnoses and treating sickness and injuries using herbs, medicinal plants and other traditional techniques used in the community;
- \* advising community and individuals on proper diet and behaviour to preserve or improve health and well-being;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*32411 Physician, Malay traditional medicine*

*32412 Physician, Chinese traditional medicine*

*32413 Physician, Indian traditional medicine (ayurvedic)*

*32414 Physician, Indian traditional medicine (homeopathic)*

*32415 Acupuncturist*

*32416 Dispenser, Chinese traditional medicine*

**3242 FAITH HEALERS**

Faith healers endeavour to cure human mental and physical illness by mental influence and suggestion, power of faith and spiritual advice.

**Tasks include:**

- \* endeavouring to cure human mental and physical ailments by power of faith;
- \* advising community or individuals on proper behaviour and faith to preserve or improve health and well-being;
- \* performing related tasks;
- \* supervising other workers.

**Example of the occupations classified here:**

*32420 Faith healer*

### **33 TEACHING ASSOCIATE PROFESSIONALS**

Teaching associate professionals teach a range of subjects at the primary and pre-primary education levels, organise educational activities especially for children or teach students in the areas of special concern individually or in group.

**This sub-major group consists of the following minor groups:**

- 331 PRIMARY EDUCATION TEACHERS**
- 332 PRE-PRIMARY EDUCATION TEACHERS**
- 339 TEACHING ASSOCIATE PROFESSIONALS NOT ELSEWHERE CLASSIFIED**

#### **331 PRIMARY EDUCATION TEACHERS**

Primary education teachers teach a range of subjects at the primary education level and organise educational activities.

##### **3310 PRIMARY EDUCATION TEACHERS**

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

##### **Tasks include:**

- \* preparing programme of learning and giving instruction in several school subjects such as reading, writing and arithmetic, among others, within prescribed or recommended curriculum;
- \* preparing, administering and marking tests, projects and assignments to train pupils and to evaluate their progress, and giving remedial instruction if necessary;
- \* organising and supervising pupils' extra-curricular activities;
- \* encouraging personal development of pupils and discussing their progress with parents;
- \* maintaining attendance records and school discipline;
- \* participating in staff meetings and educational conferences and workshops;
- \* performing extra-curricular tasks such as assisting with sports, school concerts, excursions and special interest programmes;
- \* performing related tasks;
- \* supervising other workers.

##### **Example of the occupations classified here:**

**33100 *Teacher, primary education***

#### **332 PRE-PRIMARY EDUCATION TEACHERS**

Pre-primary education teachers organise educational activities for children below primary school age.

### **3320 PRE-PRIMARY EDUCATION TEACHERS**

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.

**Tasks include:**

- \* planning and organising activities designed to facilitate the children's development of physical and social skills;
- \* promoting language development through story telling, role play, songs, rhymes and informal conversations and discussions;
- \* observing children in order to evaluate and discuss progress and possible problems with parents;
- \* supervising children's activities to ensure safety and resolve conflicts;
- \* attending staff meeting, educational conferences and workshops;
- \* performing related tasks;
- \* supervising other workers.

**Example of the occupations classified here:**

*33200 Teacher, pre-primary*

### **339 TEACHING ASSOCIATE PROFESSIONALS NOT ELSEWHERE CLASSIFIED**

This minor group covers other teaching associate professionals engaged in teaching activities outside the scope of those classified in minor groups 331 - 332.

### **3390 TEACHING ASSOCIATE PROFESSIONALS NOT ELSEWHERE CLASSIFIED**

Teaching associate professionals not elsewhere classified render teaching services in the areas of special concern, individually or in group.

**Tasks include:**

- \* conducting classes for adults to read and write in rural areas to eradicate illiteracy;
- \* teaching students the principles and practice of one or more fine arts such as dancing, music or painting;
- \* giving private lessons or training to children or adults;
- \* compiling lessons and conducting correspondence course in accordance with prescribed syllabus for students taking various examinations;
- \* teaching the basic principles of good carriage, balance, behaviour and grooming to improve their appearance;
- \* conducting classes in training institutions to teach basic home economics;
- \* instructing potential drivers in the driving of motor vehicles;
- \* teaching the Islamic religion;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 33901 *Teacher, adult education*
- 33902 *Teacher, fine arts*
- 33903 *Teacher, home economics*
- 33904 *Teacher, modelling*
- 33905 *Teacher, correspondence*
- 33906 *Instructor, driving/motor-vehicle*
- 33907 *Teacher, Islamic religion*
- 33908 *Private tutor*

## **34 FINANCE, SALES AND RELATED BUSINESS ASSOCIATE PROFESSIONALS**

Finance, sales and related business associate professionals perform technical tasks connected with the practical application of knowledge relating to finance and sales, or business enterprise administration, accounting services and job placement services.

**This sub-major group consists of the following minor groups:**

- 341 FINANCE AND SALES ASSOCIATE PROFESSIONALS**
- 342 BUSINESS SERVICES AGENTS AND TRADE BROKERS**

### **341 FINANCE AND SALES ASSOCIATE PROFESSIONALS**

Finance and sales associate professionals maintain records of financial transactions, buy and sell financial instruments, different types of insurance, real estate and other business services, deal with foreign exchange, act as wholesale representatives of technical products and services or act as buyers on behalf of organisations, or they appraise the value of commodities, real estate and other properties, and sell these by auction or organise, manage and co-ordinate tour packages, exhibitions and conventions.

#### **3411 ASSISTANT ACCOUNTANTS**

Assistant accountants maintain complete records of financial transactions of an undertaking and verify accuracy of documents and records relating to such transactions.

**Tasks include:**

- \* maintaining complete records of all financial transactions of an undertaking according to general accounting 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;
- \* performing accounting calculation using standard computer software packages;
- \* providing assistance in the preparation of cash flow projection and budgets;
- \* preparing accounting and other results for presentation in graphical or tabular form;
- \* applying knowledge of accounting principles in order to identify and solve problems arising in the course of their work;
- \* performing related tasks;
- \* supervising other workers.

**Example of the occupations classified here:**

**34110** *Assistant accountant*

**3412 SECURITIES AND FINANCE DEALERS AND BROKERS**

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

**Tasks include:**

- \* 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 negotiation of terms for, and organisation 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;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

**34121** *Broker, securities*

**34122** *Broker, stocks and shares*

**34123** *Broker, foreign exchange*

**34124** *Jobber*

**34125** *Broker, investment*

**3413 INSURANCE REPRESENTATIVES**

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

**Tasks include:**

- \* compiling lists of prospective clients from directories and other sources and making contact with prospective clients to seek interviews;
- \* obtaining information about customers' circumstances necessary to determine appropriate type of insurance and conditions;
- \* negotiating with customers to determine type and degree of risk for which insurance is derived, extent of coverage and terms of payment;
- \* negotiating and placing reinsurance contracts;
- \* advising on, negotiating terms for and placing insurance contracts for large or special types of projects, installations or risks;

- \* may collect premiums and keep records of payment;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 34131 Agent, insurance*
- 34132 Broker, insurance*
- 34133 Underwriter, insurance*

**3414 REAL ESTATE AGENTS**

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

**Tasks include:**

- \* obtaining information about properties to be sold or leased, the circumstances of their owner 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;
- \* arranging signing of lease agreements and transfer of property rights;
- \* collecting rent and deposits on behalf of owner and inspecting properties before, during and after tenancies;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 34131 Agent, real estate*
- 34132 Agent, property*
- 34133 Realtor (property)*
- 34134 Negotiator (property)*

**3415 TECHNICAL AND COMMERCIAL SALES REPRESENTATIVES**

Technical and commercial sales representatives sell various goods on a wholesale basis including installations, equipment and technical products and related services, and provide specialised information as required.

**Tasks include:**

- \* compiling lists of prospective customers using trade directories and other sources;
- \* acquiring and updating knowledge of employers' and competitors' products and understanding market conditions;
- \* soliciting orders and selling goods to retail, industrial, wholesale and other establishments;
- \* selling technical equipment, supplies and related services to business establishments or individuals;

- \* providing prospective customers with general and specialised information and the characteristics and functions of the equipment, and demonstrating its use;
- \* quoting and negotiating prices, credit terms, completing contracts and recording orders;
- \* arranging for delivery of goods, installation of equipment and provision of services;
- \* following up customers to ensure satisfaction with products purchased and resolving any problems arising;
- \* reporting to sales management on sales made and the marketability of products;
- \* reporting customers' reactions and requirements to manufacturers;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 34151 Medical representative*
- 34152 Salesperson, technical*
- 34153 Adviser, technical*
- 34154 Adviser, after-sales service*
- 34155 Canvasser*
- 34156 Salesperson, travelling*

**3416 BUYERS AND PURCHASING OFFICERS**

Buyers and purchasing officers buy goods and services on behalf of industrial, commercial or other enterprises and organisations.

**Tasks include:**

- \* negotiating and contracting for the purchase of equipment, raw materials, products and supplies for industrial plant, utilities, government units or other establishments and the purchasing of merchandise for resale;
- \* obtaining information about requirements and stock, and determining quantity and quality to be purchased, costs, delivery dates and other contract conditions;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 34161 Buyer*
- 34162 Purchasing officer*

**3417 APPRAISERS, VALUERS AND AUCTIONEERS**

Appraisers, valuers and auctioneers value property and various goods and assess losses covered by insurance policies, or sell objects, properties and goods by auction.

**Tasks include:**

- \* determining the value of raw materials, real estate, industrial equipment, personal and household effects, works of art, gems and other objects offered for sale or to be insured;

- \* assessing the extent of damage or loss and liabilities of insurance companies and underwriters for losses covered by insurance policies;
- \* selling by auction various kinds of properties, cars, commodities, livestock, art, jewellery and other objects;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 34171 Auctioneer*
- 34172 Appraiser/valuer*
- 34173 Adjuster, insurance*
- 34174 Assessor, insurance*

**3419 FINANCE AND SALES ASSOCIATE PROFESSIONALS NOT ELSEWHERE CLASSIFIED**

This unit group covers finance and sales associate professionals not classified elsewhere in Minor Group 341: Finance And Sales Associate Professionals, including those engaged in planning itineraries and scheduling travel accommodation for customers, and organising or selling complete group travel tours for business or vacation, or organising exhibition/convention.

**Tasks include:**

- \* obtaining information about cost, convenience and availability of different types' of transport and accommodation, ascertaining customers' requirements and advising them on travel arrangements;
- \* making and confirming travel and hotel reservations, giving customers tickets and vouchers and receiving payments;
- \* organising complete group tours for business or vacation travel and selling them to groups or individuals;
- \* helping customers in obtaining necessary certificates and travel documents;
- \* planning, directing and organising activities associated with exhibition or convention;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 34191 Organiser, exhibition and convention*
- 34192 Consultant, travel*

**342 BUSINESS SERVICES AGENTS AND TRADE BROKERS**

Business services agents and trade brokers establish necessary contacts between buyers and sellers, buy and sell commodities usually in bulk, carry out customs clearance procedures and ensure that insurance and export/import licences are in order, match job seekers with vacancies known to job placement offices, find workers for vacant posts on a commission basis, or contract labour for particular projects, and sell various other business services.

## **3420 BUSINESS SERVICES AGENTS AND TRADE BROKERS**

Business service agents and trade brokers buy and sell commodities, usually in bulk, at auctions on the spot or future markets, carry out customers clearing procedures and ensure that insurance, export/import licences and other formalities are in order, match job seekers with vacancies, and establish business contacts and sell business services.

### **Tasks include:**

- \* establishing contact between buyers and sellers of commodities;
- \* discussing buying or selling requirements of client and giving advice accordingly;
- \* arranging for the production of auction catalogues, fixing reserve prices, attending auctions of the spot or futures markets and bidding on behalf of client;
- \* negotiating purchase/sale by private treaty of goods not sold at auction;
- \* obtaining cargo space and fixing and collecting freight charges from client;
- \* carrying out customs clearing procedures for exports or imports;
- \* ensuring that insurance and export/import licences and other formalities are in order;
- \* signing and issuing bills of lading;
- \* matching job seekers with vacancies known to job placement offices or advising on training schemes;
- \* finding workers for vacant posts against a commission from the employer or worker;
- \* discussing with enterprises/organisations the needed skills and other characteristics of the workers to be employed or contracted;
- \* finding workers with appropriate skills and undertaking the necessary formalities according to national or international regulations and requirements;
- \* ensuring that the employment contracts meet legal requirements and signing them;
- \* obtaining information about services to be sold and needs of prospective buyers;
- \* negotiating contracts on behalf of seller or buyer and explaining terms of sale and payment to client;
- \* signing agreements on behalf of seller or buyer and ensuring that contract is honoured;
- \* making sure that the business service purchased is made available to the buyer in the agreed format the agreed time;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

**34201** *Salesperson, business services/advertising*

**34202** *Broker, commodity*

**34203** *Agent, clearing and forwarding*

**34204** *Agent, employment*

**34205** *Agent, literary/musical performance/sports/theatrical*

## **35 SUPERVISORS**

Supervisors perform a combination of tasks. Partly they are managing the production on a routine basis, without making strategic decisions, partly they are assisting the operators in case of emergencies and partly undertaking technical work. In this category only those occupations should be coded that cannot be coded as managers, since there is still at least one level between them and management, and that cannot be coded as operators, since at least one more level is between them and the operators.

**This sub-major group consists of the following minor group:**

### **350 SUPERVISORS**

#### **350 SUPERVISORS**

Supervisors perform a combination of tasks. Partly they are managing the production on a routine basis, without making strategic decisions, partly they are assisting the operators in case of emergencies and partly undertaking technical work. In this category only those occupations should be coded that cannot be coded as managers, since there is still at least one level between them and management, and that cannot be coded as operators, since at least one more level is between them and the operators.

#### **3501 PLANTATION CONDUCTORS**

Plantation conductors supervise the production on plantations on a routine basis without making strategic decisions. They ensure that directives of the management are carried out and deal with personnel and financial matters.

**Tasks include:**

- \* supervising and directing activities of workers;
- \* attending daily muster to verify attendance records and issues work instructions;
- \* receiving, recording and despatching produce;
- \* inspecting, maintaining and keeping such records as required by management, relevant to his area of responsibility and ensuring that all works are performed according to instructions;
- \* making requisitions, issuing and recording materials necessary for operations;
- \* resolving workers' grievances;
- \* preparing monthly payroll or providing final figures for computing payroll and assisting in payment of advances and wages for workers;
- \* planning and estimating cost of production and submitting periodic progress reports;
- \* performing related tasks.

**Examples of the occupations classified here:**

- 0 Conductor, field and factory/rubber plantation*
- 1 Conductor, field and factory/oil palm plantation*

### **3509 OTHER SUPERVISORS**

Other supervisors perform a combination of tasks. Partly they are managing the production on a routine basis, without making strategic decisions, partly they are assisting the operators in case of emergencies and partly undertaking technical work. In this category only those occupations should be coded that cannot be coded as managers, since there is still at least one level between them and management, and that cannot be coded as operators, since at least one more level is between them and the operators.

#### **Tasks include:**

- \* implementing laws, rules and regulations;
- \* planning, directing, organising and supervising the daily activities of workers;
- \* devising procedures to ensure quality control and efficient use of resources;
- \* reporting to management on progress and bottlenecks;
- \* consulting with management on problems;
- \* performing related tasks.

#### **Example of the occupations classified here:**

*35090 Supervisor*

## **39 ASSOCIATE PROFESSIONALS NOT ELSEWHERE CLASSIFIED**

Associate professionals not elsewhere classified implement government policy decisions, rules and regulations pertaining to customs, tax, licensing, social work, the police force, mathematical, statistical and related activities, translating, entertainment, sports and religion.

#### **This sub-major group consists of the following minor groups:**

- 391 GOVERNMENT ASSOCIATE PROFESSIONALS**
- 392 STATISTICAL, ADMINISTRATIVE AND RELATED ASSOCIATE PROFESSIONALS**
- 393 SOCIAL WORK ASSOCIATE PROFESSIONALS**
- 394 PHILOLOGISTS, TRANSLATORS AND INTERPRETERS**
- 395 ARTISTIC, ENTERTAINMENT AND SPORTS ASSOCIATE PROFESSIONALS**
- 396 RELIGIOUS ASSOCIATE PROFESSIONALS**

### **391 GOVERNMENT ASSOCIATE PROFESSIONALS**

Government associate professionals enforce or apply relevant government rules and regulations relating to national borders, public finance, economic development, social services and process or examine applications for licences or authorisations in connection with travel, exports and imports of goods, establishment of business, erection of buildings and other activities subject to government regulations, and investigate crimes committed and obtain information relating to crime prevention.

### **3911 GOVERNMENT/STATUTORY BOARD EXECUTIVE OFFICERS**

Government/Statutory board executive officers put into effect government policy decisions and implement laws, rules and regulations under the direction of Senior Government/Statutory Board Officials. They work in national, state, or local government departments or agencies, or in intergovernmental organisations dealing with subjects such as finance, taxation, trade, health, education, social insurance and employment.

#### **Tasks include:**

- \* taking decisions and consulting on matters arising in the detailed implementation of instructions from senior government/statutory board officials;
- \* acting, within a government department (central, state or local) as official in charge of a section dealing with particular administrative matters concerning such official services as labour, national service, defence, education, justice, police, welfare, fire protection, weights and measures inspection, employment injury compensation, prices and wages control, and other government/statutory board functions;
- \* directing local office dealing with such matters as assessment of taxes, social security and pensions matters, employment placement and apprenticeship, and collection of customs and excise duties;
- \* directing local office official services such as preparation of registers of electors, registration of births, marriages and deaths, immigration, registration of aliens admitted into country and issue of passports;
- \* approving applications for import and export licences;
- \* inspecting working conditions in factories and other workplaces to ensure establishments adhere to country's law;
- \* controlling, as official in charge, a specialised branch of an embassy, legation or consulate-general;
- \* undertaking research not requiring specialised scientific, professional or technical qualifications using such sources of information as government documents and files, publications and interviews with knowledgeable persons in the country or overseas;
- \* making comparative analyses and writing reports for the responsible senior government/statutory board official needing information and advice on policy questions, departmental programmes, administrative problems and other matters;
- \* inspecting and reporting on the organisation of work and methods used in government/statutory board offices;
- \* performing related tasks;
- \* supervising other workers.

#### **Examples of the occupations classified here:**

- 39111 Government executive officer*
- 39112 Statutory board executive officer*
- 39113 Inspector, tax*
- 39114 Inspector, customs*
- 39115 Inspector, pensions*
- 39116 Inspector, licensing*
- 39117 Inspector, price*
- 39118 Inspector, weights and measures*

## **3912 POLICE INSPECTORS AND DETECTIVES**

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

### **Tasks include:**

- \* establishing contacts and sources of information about crimes planned, or committed in order to prevent crimes or identify culprits;
- \* investigating events and circumstances suspected of being criminal in nature to obtain evidence and identify the perpetrators;
- \* establishing contacts and sources of information not readily available or apparent concerning establishments or the circumstances and behaviour of persons, usually with the aim of preventing a crime;
- \* investigating possible cases of theft of goods, money or information from business establishments and of other possible cases of unlawful behaviour by customers or employees;
- \* investigating establishments or other circumstances and behaviour of persons on behalf of legal authorities or clients;
- \* making arrests or assisting in making arrests, if authorised;
- \* testifying in court of law or reporting to superiors or clients about circumstances and results of investigations;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

*39121 Inspector, police*

*39122 Detective, police*

## **392 STATISTICAL, ADMINISTRATIVE AND RELATED ASSOCIATE PROFESSIONALS**

Statistical, administrative and related associate professionals collect, process and present mathematical, statistical and actuarial data or implement and support the communication, documentation and internal managerial co-ordination activities of an organisational unit and organise the flow of information around different organisational units.

### **3921 STATISTICAL, MATHEMATICAL AND RELATED ASSOCIATE PROFESSIONALS**

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

### **Tasks include:**

- \* assisting in planning and performing mathematical, actuarial, statistical and related calculations;

- \* preparing detailed estimates of quantities and costs of materials and labour required for statistical census and survey operations;
- \* performing technical tasks connected with establishing, maintaining and using registers and sampling frames for census and survey operations;
- \* performing technical tasks connected with data collection and quality control operations in censuses and surveys;
- \* using standard computer software packages to perform mathematical, actuarial, statistical and related calculations;
- \* preparing mathematical, actuarial, statistical and other results for presentation in graphical or tabular form;
- \* applying knowledge of mathematical, actuarial, statistical and related principles and practices in order to identify and solve problems arising in the course of their work;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*39211 Assistant, statistical*

*39212 Assistant, mathematical*

*39213 Assistant, actuarial*

*39124 Assistant, research*

**3922 ADMINISTRATIVE AND RELATED ASSOCIATE PROFESSIONALS**

Administrative and related associate professionals act as administrative consular officials, undertake executive secretarial duties for department heads or official committees, analyse files and other sources of information and write reports for responsible administrators, giving relevant information and some advice on policy questions, department programmes, administrative problems and other matters.

**Tasks include:**

- \* acting as administrative consular official;
- \* undertaking executive secretarial duties for department heads;
- \* undertaking executive secretarial duties for official committees;
- \* analysing files and other sources of information, and writing reports for responsible administrators;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*39221 Executive secretary, non-government administration*

*39222 Executive secretary, government administration*

*39223 Official, consular*

*39224 Administrative executive*

### **393     SOCIAL WORK ASSOCIATE PROFESSIONALS**

Social work associate professionals provide guidance to clients in social and related matters to enable them to find and use resources to overcome difficulties and achieve particular goals.

#### **3930    SOCIAL WORK ASSOCIATE PROFESSIONALS**

Social work associate professionals provide guidance to clients in social and- related matters to enable them to find and use resources to overcome difficulties and achieve particular goals.

**Tasks include:**

- \* helping individuals and families with personal and social problems;
- \* collecting information relevant to clients' needs and advising them on their rights and obligations;
- \* analysing the client's situation and presenting alternative approaches to resolving problems;
- \* planning, evaluating, improving and developing welfare services;
- \* working to prevent development of delinquency or to achieve rehabilitation of delinquents by organising and supervising social, recreational and educational activities in youth clubs, community centres and similar organisations, or by other means;
- \* helping to prevent child abuse and domestic violence, and assisting physically or mentally handicapped persons to obtain adequate treatment and improve their ability to function in society;
- \* planning, organising or providing home-help services;
- \* compiling case records and preparing reports as required;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 39301 Social worker*
- 39302 Social welfare worker*
- 39303 Social worker, psychiatric*
- 39304 Social worker, community*
- 39305 Social worker, delinquency*

### **394     PHILOLOGISTS. TRANSLATORS AND INTERPRETERS**

Philologists, translators and interpreters study the origin, development and structure of languages and translate or interpret from one language into another.

#### **3940    PHILOLOGISTS, TRANSLATORS AND INTERPRETERS**

Philologists, translators and interpreters study the origin, development and structure of languages and translate or interpret from one language into another.

**Tasks include:**

- \* studying the relationships between ancient parent languages and modern language groups, tracing the origin and evolution of words, grammar and language forms and presenting findings;

- \* advising on or preparing language classification systems, grammars, dictionaries and similar interests;
- \* translating from one language into another and ensuring that the correct meaning of the original is retained, that legal, technical or scientific works are correctly rendered, and that the phraseology and terminology of the spirit and style of literary works are conveyed as far as possible;
- \* interpreting from one language into another, in particular at conferences, meetings and similar occasions, and ensuring that the correct meaning, and as far as possible the spirit, of the original are transmitted;
- \* may specialise in one or more languages and subject areas;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

**39401** *Translator*

**39402** *Interpreter*

**39403** *Philologist/lexicographer*

**395**     **ARTISTIC. ENTERTAINMENT AND SPORTS ASSOCIATE PROFESSIONALS**

Artistic, entertainment and sports associate professionals design products or decorate interiors, present information through the media, entertain audiences by performing spectacular, amusing or exciting acts in circuses, stadium or on stage, or participate in sports competitions, or train or direct those who perform such activities.

**3951**     **DECORATORS AND COMMERCIAL DESIGNERS**

Decorators and commercial designers apply artistic techniques to product design, interior decoration and sales promotion.

**Tasks include:**

- \* determining the objectives of the design by consulting with clients, undertaking research and analysing functional requirements or studying layouts;
- \* designing industrial and commercial products, including new types and styles of clothing and accessories and endeavouring to harmonise aesthetic considerations with technical and other requirements;
- \* supervising the production of sample products or design illustrations, instructing other workers making models or patterns of products, or instructing finishing or layout artists assembling artwork for printing;
- \* creating interior decorating schemes and planning furnishings for homes, public buildings, ships and other places;
- \* designing and painting stage scenery;
- \* creating and executing artistic effects for use in show windows and other display/promotional areas;
- \* tattooing decorative designs on clients' skin;

- \* designing floral arrangements such as wreaths, bouquets and corsages according to customer's preference, purpose, occasion and availability of flowers;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 39511 Artist, graphic*
- 39512 Artist, display*
- 39513 Decorator, interior*
- 39514 Designer, commercial products*
- 39515 Designer, theatrical set*
- 39516 Artist, tattoo*
- 39517 Florist*

**3952 RADIO AND TELEVISION ANNOUNCERS AND RELATED ASSOCIATE PROFESSIONALS**

Radio and television announcers and related associate professionals read news bulletins, conduct interviews, and make other announcements or introductions on radio, television or in theatres and other establishments.

**Tasks include:**

- \* reading news bulletins, making other announcements and providing commentary for sports and other events on radio or television;
- \* introducing performing artists or persons being interviewed, and making related announcements on radio and television or in theatres, clubs and other establishments;
- \* interviewing persons in public, especially on radio and television;
- \* presenting opinions on sports, politics, social or economic matters;
- \* researching, investigating and compiling stories and program packages;
- \* monitoring incoming information and liaising with network editors, journalists, media producers and directors, graphic designers, other program departments and outside news and program sources;
- \* selecting and organising materials for broadcast;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 39521 Announcer, radio and television*
- 39522 Compere*
- 39523 Interviewer, media*
- 39524 Newscaster/commentator*
- 39525 Disc jockey*
- 39526 Presentation support assistant*
- 39527 Programme preparer*

### **3953 STREET, NIGHTCLUB AND RELATED MUSICIANS, SINGERS AND DANCERS**

Street, night-club and related musicians, singers and dancers perform music, or sing or dance on the streets, in night-clubs, circuses and related places.

#### **Tasks include:**

- \* playing one or more musical instruments as a soloist, or as a member of a popular music orchestra of circus or other bands;
- \* singing popular arias as a soloist, or as a member of vocal groups in night-clubs, or on the streets;
- \* performing dances as a soloist, with a partner or as a member of dancing groups in places such as circuses, night-clubs or on the streets;
- \* performing related tasks;
- \* supervising other workers.

#### **Examples of the occupations classified here:**

**39531** *Musician, street*

**39532** *Dancer, night-club*

### **3954 CLOWNS, MAGICIANS, ACROBATS AND RELATED ASSOCIATE PROFESSIONALS**

Clowns, magicians, acrobats and related associate professionals entertain audiences in circuses and other places by performing a variety of acts.

#### **Tasks include:**

- \* performing amusing antics and telling funny stories to amuse audiences;
- \* performing feats requiring abnormal bodily contortions;
- \* performing tricks of illusion and sleight of hand, and feats of hypnotism;
- \* performing difficult and spectacular acrobatics, and gymnastic or juggling feats;
- \* training and performing with animals;
- \* performing related tasks;
- \* supervising other workers.

#### **Examples of the occupations classified here:**

**39541** *Acrobat*

**39542** *Contortionist*

**39543** *Magician*

**39544** *Clown*

**39545** *Juggler*

**39546** *Circus performer, animal*

**39547** *Snake charmer*

**39548** *Aerialist/trapeze performer*

### **3955 ANIMAL/BIRD KEEPERS AND TRAINERS**

Animal/bird keepers and trainers care for animals and, training and performing with animals in zoological, bird and aquatic parks.

#### **Tasks include:**

- \* caring for animals in zoological, bird and aquatic parks;
- \* training and performing with animals;
- \* performing related tasks;
- \* supervising other workers.

#### **Examples of the occupations classified here:**

- 39551 Keeper in zoological, bird and aquatic parks*
- 39552 Performer/trainer in zoological, bird and aquatic parks*
- 39553 Performer/trainer in crocodile farm*

### **3956 ATHLETES, SPORTSPERSONS AND RELATED ASSOCIATE PROFESSIONALS**

Athletes, sportspersons and related associate professionals participate in sporting events, conduct sports training and regulate the progress of these events.

#### **Tasks include:**

- \* participating in competitive sporting events;
- \* conducting sports training to develop ability in and knowledge of the sport;
- \* analysing performance and identifying individual or team weaknesses;
- \* officiating at sporting events to enforce rules of competitions;
- \* promoting sports and skills development, and overseeing the participation of young people in sport;
- \* instructing persons in the development and maintenance of their physical fitness;
- \* instructing persons in chess, billiards, bridge and other games;
- \* riding race horses at race tracks;
- \* performing related tasks;
- \* supervising other workers.

#### **Examples of the occupations classified here:**

- 39561 Athlete/sportperson*
- 39562 Sports official/umpire*
- 39563 Coach, sports*
- 39564 Instructor, physical fitness*
- 39565 Instructor, billiards/bridge/chess*
- 39566 Jockey*

## **396 RELIGIOUS ASSOCIATE PROFESSIONALS**

Religious associate professionals participate in the practice of religious works, or devote their lives to contemplative prayer or meditation, or preach and propagate the teachings of their particular religion.

### **3960 RELIGIOUS ASSOCIATE PROFESSIONALS**

Religious associate professionals undertake religious works, devote their lives to contemplative prayer or meditation, and preach and propagate the teachings of their particular religion.

#### **Tasks include:**

- \* undertaking religious works;
- \* living as a member of a separate community and observing its rules and practices;
- \* devoting their lives to contemplative prayer or meditation;
- \* preaching and propagating the teachings of a particular religious faith;
- \* performing related tasks;
- \* supervising other workers.

#### **Examples of the occupations classified here:**

**39601 *Monk, associate professional***

**39602 *Nun, associate professional***

**39603 *Preacher***

## **MAJOR GROUP 4: CLERICAL WORKERS**

Clerical workers record, organise, store and retrieve information related to the work in question, compute financial, statistical and other numerical data, and perform a number of client-oriented clerical duties especially in connection with money-handling operations, travel arrangements and business information and appointments. Most occupations in this major group require skills at the second skill level.

**This major group consists of the following sub-major groups:**

- 41 OFFICE CLERKS**
- 42 CUSTOMER SERVICES CLERKS**
- 43 MAIL DISTRIBUTION CLERKS**
- 44 TRANSPORT CLERKS**
- 49 CLERICAL WORKERS NOT ELSEWHERE CLASSIFIED**

### **41 OFFICE CLERKS**

Office clerks record, organise, store and retrieve information related to the work in question and compute financial, statistical and other numerical data.

**This sub-major group consists of the following minor groups:**

- 411 SECRETARIES AND KEYBOARD-OPERATING CLERKS**
- 412 ADMINISTRATIVE CLERKS**
- 413 ACCOUNTING AND FINANCE CLERKS**
- 414 STATISTICAL CLERKS AND COMPUTER OPERATORS**
- 415 MATERIAL-RECORDING CLERKS**

#### **411 SECRETARIES AND KEYBOARD-OPERATING CLERKS**

Secretaries and keyboard-operating clerks record oral or written information on paper or in machine-readable form.

#### **4111 SECRETARIES AND VERBATIM REPORTERS**

Secretaries and verbatim reporters assist managers and other executives by performing clerical, secretarial and administrative duties and make verbatim reports of proceedings.

**Tasks include:**

- \* checking and transcribing correspondence, minutes and reports from dictation or written drafts to conform to office standards, using typewriter or word processing equipment;
- \* dealing with incoming or outgoing mails;
- \* scanning, recording and distributing mail, correspondence and documents;
- \* screening requests for meetings or appointments, making travel arrangements and helping to organise meetings;

- \* organising and supervising filing systems;
- \* dealing with routine correspondence;
- \* making verbatim reports of proceedings in legislative assemblies, courts of law or other places in shorthand or by other means;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*41111 Secretary/personal assistant*

*41112 Verbatim/Hansard reporter*

**4112 WORD-PROCESSOR AND RELATED OPERATORS**

Word-processor and related operators take shorthand, type, edit and print various documents using word-processing equipment, or send and receive messages and facsimiles by means of a teleprinter, telefax or similar machines.

**Tasks include:**

- \* taking dictation in shorthand and transcribing it for typing or word-processing;
- \* typing correspondence, business forms and other documents into word-processing equipment;
- \* planning layout and format, if not preset;
- \* altering, rearranging and editing typed text;
- \* operating printer, usually linked to the word processor;
- \* sending and receiving messages or facsimiles by means of a teleprinter, telefax or similar machines;
- \* performing limited clerical duties such as filing records and reports, performing photocopying and answering telephones or receiving clients;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*41121 Stenographer*

*41122 Typist*

*41223 Teletypist*

**4113 DATA ENTRY OPERATORS**

Data entry operators enter numerical and other data into electronic equipment for processing and transmission, or enter data on cards and tapes, using punching machines.

**Tasks include:**

- \* entering numerical and other data from source material into computer-compatible storage and processing devices;

- \* entering data from source material in the form of perforations on cards or paper tapes;
- \* checking, correcting and updating entered data, if needed;
- \* keeping records of data input;
- \* sorting outgoing materials and preparing documents for transmission;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 41131 Clerk, data entry/computer*
- 41132 Clerk, data entry/converter (card-to-tape)*
- 41133 Clerk, data entry/electronic mail*
- 41134 Clerk, data entry/punching machine (card and tape)*

**412 ADMINISTRATIVE CLERKS**

Administrative clerks perform a variety of clerical tasks, mostly connected with the keeping of office and library records and routine aspects of insurance transactions, legal matters or personnel records.

**4120 ADMINISTRATIVE CLERKS**

Administrative clerks perform a wide range of clerical duties, mostly connected with the keeping of various office, library, insurance, legal and personnel records.

**Tasks include:**

- \* sorting and filing correspondence, cards, invoices, receipts and other records in alphabetical or numerical order or according to subject matter or other systems;
- \* keeping and updating personnel records of all the organisation's employees;
- \* carrying out specialised clerical tasks incidental to transaction of life, fire, marine, automobile or other types of insurance;
- \* carrying out specialised clerical tasks in connection with legal matters;
- \* interviewing and registering applicants seeking employment and referring suitable candidate to prospective employers;
- \* maintaining library records relating to the acquisition, issuing and returning of books and other publications and performing related duties;
- \* carrying out specialised clerical tasks relating to rental of equipment or items to individuals, business or organisations;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 41201 Clerk, office*
- 41202 Clerk, human resource*
- 41203 Clerk, insurance*

- 41204 Clerk, legal*
- 41205 Clerk, employment*
- 41206 Clerk, library*
- 41207 Clerk, registry*
- 41208 Clerk, rental*

### **413 ACCOUNTING AND FINANCE CLERKS**

Accounting and finance clerks obtain, compile and compute accounting, bookkeeping, statistical and financial data and handle cash transactions incidental to business matters.

#### **4130 ACCOUNTING AND FINANCE CLERKS**

Accounting and finance clerks help with accounting and bookkeeping records and computations, wages and production costs computations as well as performing clerical tasks relating to the transactions of a bank and other financial establishments.

##### **Tasks include:**

- \* making entries in accounting and bookkeeping records;
- \* making necessary calculations;
- \* performing other limited accounting and bookkeeping functions;
- \* calculating production or operational costs;
- \* preparing payrolls and related records for employee salaries and statutory record keeping purposes;
- \* preparing invoices, receiving and paying out money, keeping records of transactions and issuing receipts and cashing cheques;
- \* preparing financial documents and calculating interest or brokerage charges and stamp duties payable;
- \* processing documentation and maintaining records of bonds, shares and other securities bought or sold on behalf of clients or employer;
- \* examining, evaluating and processing applications for credit or loans and preparing conditions of loans and repayment details of loans approved;
- \* providing assistance in preparing corporate tax returns and responding to tax queries;
- \* performing related tasks;
- \* supervising other workers.

##### **Examples of the occupations classified here:**

- 41301 Bookkeeper*
- 41302 Clerk, accounts*
- 41303 Clerk, bank*
- 41304 Clerk, audit*
- 41305 Clerk, credit*
- 41306 Clerk, payroll*
- 41307 Clerk, cost*
- 41308 Clerk, billing*

## **414    STATISTICAL CLERKS AND COMPUTER OPERATORS**

Statistical clerks and computer operators obtain, compile and compute statistical data, or operate and control mainframe computers and peripheral equipment.

### **4141    STATISTICAL CLERKS**

Statistical clerks obtain, compile and compute statistical data.

#### **Tasks include:**

- \* obtaining and compiling statistical data from surveys and administrative records;
- \* conducting field surveys to secure data to facilitate census or market research activities;
- \* interviewing public for opinions on topics such as public issues or consumer buying habits and recording information in specified questionnaires;
- \* converting information into codes and classifying information by codes for data-processing purposes;
- \* calculating various rates, ratios, percentages and other details and presenting them in the required tabular form or graphic to be used in analysis;
- \* performing related tasks;
- \* supervising other workers.

#### **Examples of the occupations classified here:**

*41411 Clerk, statistical*

*41412 Clerk, coding (data-processing)*

*41413 Enumerator, social and economic data*

### **4142    COMPUTER OPERATORS**

Computer operators operate and control mainframe computers and peripheral equipment used for recording, storing, transmitting and processing digital data and for displaying data as letters, numbers or graphs on screen, paper or film.

#### **Tasks include:**

- \* operating and monitoring peripheral and related computer equipment which is used to record, store, transmit and process digital data and to display data as letters, numbers or graphs on screen, paper or film as requested by users;
- \* performing system start-up routine;
- \* scheduling computing jobs as specified by users to ensure timely, safe and efficient execution;
- \* mounting magnetic tapes and disks as needed for processing or recording data in machine-readable form and keeping library of disks and tapes;
- \* keeping log of computing operations;
- \* observing on-going operations, identifying systems malfunctions and initiating corrective actions;
- \* performing back-up operations according to regular procedures;

- \* printing batch reports and statements as requested by users;
- \* controlling computer inventories such as computer forms, tapes, disks, ribbons and files;
- \* performing related tasks;
- \* supervising other workers.

**Examples of occupations classified here:**

**41421** *Operator, computer*

**41422** *Operator, EDP*

**415**    **MATERIAL-RECORDING CLERKS**

Material-recording clerks keep records of goods produced, purchased, stocked, dispatched and of materials needed at specified production dates.

**4151**    **STOCK CLERKS**

Stock clerks maintain records of goods produced and production materials received, weighed, issued, dispatched or put into stock.

**Tasks include:**

- \* 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;
- \* advising the employer on very slow moving and obsolete items;
- \* receiving, storing and issuing tools, spare parts or various equipment and maintaining relevant records;
- \* weighing goods received, issued, produced or dispatched and maintaining relevant records;
- \* arranging the clearance and collection of imported cargo from customs or bond stores and arranging the shipment of cargo for export;
- \* compiling inventories of furniture and other items received for storage;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

**41511** *Storekeeper*

**41512** *Clerk, stock records*

**41513** *Clerk, weighing*

**41514** *Clerk, shipping*

**41515** *Clerk, tally*

**41516** *Clerk, inventory*

**41517** *Clerk, freight*

**41518** *Clerk, import-export*

## **4152 PRODUCTION CLERKS**

Production clerks compute quantities of materials required at specified dates for the production programmes, and prepare and check production operation schedules.

### **Tasks include:**

- \* examining customers' orders for goods and services;
- \* computing quantities, qualities and types of materials required by production programme;
- \* preparing production schedules, ensuring the availability of materials are available when required, and keeping relevant records;
- \* verifying stocks, arranging deliveries and investigating delays;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

- 41521 Clerk, planning/production*
- 41522 Clerk, planning/materials*
- 41523 Clerk, purchasing/procurement*
- 41524 Clerk, sales order*

## **42 CUSTOMER SERVICES CLERKS**

Customer services clerks deal directly with clients in connection with money handling operations, travel arrangements, request for information, appointments and operating telephone switchboards.

### **This sub-major group consists of the following minor groups:**

- 421 CASHIERS, TELLERS AND RELATED CLERKS**
- 422 CLIENT INFORMATION CLERKS**

### **421 CASHIERS . TELLERS AND RELATED CLERKS**

Cashiers, tellers and related clerks deal directly with clients in connection with receiving, changing and paying out money in stores, theatres or cinemas, banks, post offices and other establishments included those related to betting or gambling, pawning and debt collecting.

#### **4211 CASHIERS AND TICKET CLERKS**

Cashiers and ticket clerks receive directly from clients, payments for goods or services bought in establishments such as stores and ticket offices or similar establishments.

### **Tasks include:**

- \* establishing or identifying price of goods, services or admission and tabulating bill using . calculator, cash register or optical price scanner;
- \* receiving and verifying cash, cheque or credit-card payments in stores, ticket offices or similar establishments;
- \* giving change and issuing receipts;
- \* issuing tickets at ticket offices and taking corresponding payments;

- \* paying out cash against written orders, credit notes, or resulting from currency exchanges and obtaining receipts;
- \* keeping records and reconciling them with cash balance;
- \* receiving incoming cash and checking it against sales slips and other documents;
- \* operating cash register;
- \* may wrap or place merchandise in bags;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 42111 Cashier, office*
- 42112 Cashier, box office*
- 42113 Cashier, store*
- 42114 Cashier, theatre*
- 42115 Cashier, restaurant*
- 42116 Cashier, race track*
- 42117 Clerk, ticket issuing (except travel)*

**4212 TELLERS AND OTHER COUNTER CLERKS**

Tellers and other counter clerks deal directly with clients of banks or post offices in connection with depositing and withdrawal of money or providing mail services or determining odds and receiving and paying off bets on results of sporting/gambling events.

**Tasks include:**

- \* receiving money or cheques from clients;
- \* paying out money to clients;
- \* paying bills and making money transfers on clients' behalf;
- \* crediting and debiting clients' accounts;
- \* changing money from one currency to another as requested by clients;
- \* making records of all transactions and reconciling them with cash balance;
- \* receiving mail, selling postage stamps and conducting other post office counter business such as bill payments, money transfers and related business;
- \* calculating commission or charges on transactions made;
- \* specialising in foreign exchange, travel cheques or other types of across the counter transactions;
- \* determining risks to decide odds and to hedge or refuse bets;
- \* preparing and issuing lists of approximate odds;
- \* distributing cards, rolling dice or spinning a roulette wheel;
- \* explaining and interpreting operating rules of a gambling establishment;
- \* announcing winning numbers, paying winner and collecting payments from loser;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*42121 Clerk, cash counter*  
*42122 Bank teller*  
*42123 Money changer*  
*42124 Clerk, postal*  
*42125 Clerk, casino*  
*42126 Croupier*  
*42127 Bookmaker*

**4213 PAWNBROKERS AND MONEYLENDERS**

Pawnbrokers and moneylenders lend money against articles deposited as pledges, or against property or other security.

**Tasks include:**

- \* evaluating articles offered as pledges, calculating interest and lending money;
- \* returning articles when the loan is paid or, in the event of non-payment, selling pledged articles;
- \* lending money as personal loans against success of future harvest and other similar undertakings;
- \* making independent investigations on creditors' financial standing to determine feasibility of granting loan;
- \* collecting repayments in accordance with agreed terms;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*42131 Pawnbroker*  
*42132 Moneylender*

**4219 CASHIERS AND RELATED CLERKS NOT ELSEWHERE CLASSIFIED**

Workers in this group perform clerical duties not elsewhere classified in Minor Group 421: Cashiers, Tellers and Related Clerks. As such, they collect payments and perform clerical duties associated with these collections.

**Tasks include:**

- \* receiving, maintaining and updating customer information for collection purpose;
- \* telephoning or corresponding to customers to collect money or arrange for later payments;
- \* tracing addresses of customers and paying visits to collect debts;
- \* noting amounts collected;
- \* recommending legal action or instigating repossession of merchandise when payment cannot be otherwise obtained;
- \* asking for and collecting charity payments;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*42191 Collector, bill*  
*42192 Collector, charity*  
*42193 Collector, debt*  
*42194 Collector, rent*

**422 CLIENT INFORMATION CLERKS**

Client information clerks deal directly with clients in connection with travel arrangements, various types of information requested, appointments to be made, including those for hospitals, medical and dental surgeons, as well as incoming or requested telephone calls.

**4221 TRAVEL AGENCY AND RELATED CLERKS**

Travel agency and related clerks supply information, prepare travel itineraries and obtain necessary reservations.

**Tasks include:**

- \* preparing itineraries;
- \* advising customer on itineraries and method of travel;
- \* making necessary reservations;
- \* issuing tickets, vouchers and other documents;
- \* obtaining visas, if necessary;
- \* preparing bills and receiving payments;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*42211 Clerk, ticket issuing/travel*  
*42112 Clerk, travel/airlines*  
*42113 Clerk, travel agency*

**4222 RECEPTIONISTS AND INFORMATION CLERKS**

Receptionists and information clerks receive clients or patients, provide information and make appointments on behalf of various establishments including hospitals, medical or dental surgeons.

**Tasks include:**

- \* receiving clients or patients, noting inquiries and providing relevant information;
- \* making appointments for clients or patients;
- \* dealing with telephone requests for information or appointments;
- \* directing clients or patients to appropriate location or person;
- \* making reservations and arranging registration for hotel guests or patients as well as keeping records or presenting bills on departure;
- \* supplying information pamphlets, brochures or forms;

- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*42221 Receptionist*  
*42222 Receptionist, hotel*  
*42223 Receptionist, medical*  
*42224 Ground hostess*  
*42225 Receptionist, dental*  
*42226 Clerk, information*

**4223 TELEPHONE OPERATORS**

Telephone operators operate telecommunications switchboards and consoles to assist callers establish telephone connections or to receive customer inquiries or fault reports.

**Tasks include:**

- \* observing switchboard for incoming calls or establishing contact between caller and person called;
- \* making connections for outgoing calls and routing long-distance calls;
- \* responding to callers' inquiries by providing information such as telephone numbers, dialling codes, call costs, time delays and service difficulties;
- \* recording details and determining charges for designated types of calls;
- \* dealing with telephone inquiries from customers regarding service issues, fault reports and other operational information;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*42231 Operator, telephone (telephone exchange)*  
*42232 Switchboard-operator, telephone*

**4229 CLIENT INFORMATION CLERKS NOT ELSEWHERE CLASSIFIED**

Workers in this group include clerks and related workers not elsewhere classified in Minor Group 422: Client Information Clerks.

**43 MAIL DISTRIBUTION CLERKS**

Mail distribution clerks perform sorting, recording, delivery and other duties in connection with mail services from post offices, courts or related organisations, as well as from or within an establishment.

**This sub-major group consists of the following minor group:**

**430 MAIL DISTRIBUTION CLERKS**

## **430    MAIL DISTRIBUTION CLERKS**

Mail distribution clerks perform sorting, recording, delivery and other duties in connection with mail services from post offices, courts or related organisations, as well as from within an establishment.

### **4300    MAIL DISTRIBUTION CLERKS**

Mail distribution clerks receive, sort, record, deliver and perform other duties in connection with mail services.

#### **Tasks include:**

- \* performing mail-handling duties in post offices and sorting centres;
- \* sorting and delivering mail to private houses and elsewhere;
- \* sorting and keeping simple records of incoming and outgoing correspondence and dispatching outgoing mail in various establishments;
- \* serving court order and processes such as notices, summons and subpoenas;
- \* performing related tasks;
- \* supervising other workers.

#### **Examples of the occupations classified here:**

*43001    Postman/postwoman*

*43002    Clerk, mail*

*43003    Process server/summons server*

*43004    Clerk, mail/despatch*

## **44    TRANSPORT CLERKS**

Transport clerks keep records of operational aspects and co-ordinate the timing of train, road, air and waterborne passenger and freight transport, and prepare reports for management.

#### **This sub-major group consists of the following minor group:**

### **440    TRANSPORT CLERKS**

#### **440    TRANSPORT CLERKS**

Transport clerks keep records of operational aspects and co-ordinate the timing of train, road, air and waterborne passenger and freight transport, and prepare reports for management.

#### **4400    TRANSPORT CLERKS**

Transport clerks keep records of operational aspects and co-ordinate the timing of train, road, air and waterborne passenger and freight transport, and prepare reports for management.

#### **Tasks include:**

- \* keeping record of operational aspects and co-ordinating 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 the railway yard;
- \* co-ordinating 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;
- \* co-ordinating and keeping records of operational activities concerning air and water transport of passengers and freight such as passenger lists and freight manifests;
- \* preparing reports for management;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*44001 Clerk, transport*  
*44002 Yardmaster, railway*  
*44003 Dispatcher, clerical/bus*  
*44004 Clerk, flight operations*  
*44005 Dispatcher, clerical/boat*  
*44006 Dispatcher, clerical/oil pipelines*

## **49 CLERICAL WORKERS NOT ELSEWHERE CLASSIFIED**

Clerical workers not elsewhere classified perform miscellaneous clerical tasks not elsewhere classified in sub-major groups 41 - 44.

**This sub-major group consists of the following minor group:**

### **490 CLERICAL WORKERS NOT ELSEWHERE CLASSIFIED**

#### **490 CLERICAL WORKERS NOT ELSEWHERE CLASSIFIED**

This minor group covers other clerical workers performing miscellaneous clerical tasks outside the scope of those classified in minor groups 411- 440 such as proofreading, translating, writing or completing forms on behalf of illiterate persons.

#### **4900 CLERICAL WORKERS NOT ELSEWHERE CLASSIFIED**

Clerical workers not elsewhere classified perform proofreading, translating, writing or completed forms on behalf of illiterate persons.

**Tasks include:**

- \* comparing proofs of texts and related materials prepared for printing with original materials, correcting errors and marking texts for printer according to the established requirements;
- \* translating, writing or completing forms on behalf of illiterate persons for a fee;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*49001 Petition writer*  
*49002 Proofreader (clerical)*

## **MAJOR GROUP 5: SERVICE WORKERS AND SHOP AND MARKET SALES WORKERS**

Service workers and shop and market sales workers provide personal and protective services related to travel, housekeeping, catering and personal care, or protection against fire and unlawful acts, or they pose as models for artistic creation and display, or demonstrate and sell goods in wholesale or retail shops and similar establishments as well as at stalls and markets. Most occupations in this major group require skills at the second skill level. • •

**This major group consists of the following sub-major groups:**

- 51 PERSONAL AND PROTECTIVE SERVICES WORKERS**
- 52 SALES WORKERS, DEMONSTRATORS AND MODELS**

### **51 PERSONAL AND PROTECTIVE SERVICES WORKERS**

Personal and protective services workers provide personal and protective services related to travel, housekeeping, catering, personal care, or protection against fire and unlawful acts.

**This sub-major group consists of the following minor groups:**

- 511 TRAVEL ATTENDANTS AND RELATED WORKERS**
- 512 HOUSEKEEPING AND CATERING SERVICES WORKERS .**
- 513 PERSONAL CARE AND RELATED WORKERS**
- 514 PROTECTIVE SERVICE AND RELATED WORKERS**
- 515 ASTROLOGERS, FORTUNE TELLERS AND RELATED WORKERS**

#### **511 TRAVEL ATTENDANTS AND RELATED WORKERS**

Travel attendants and related workers provide various personal services in connection with travelling by aircraft, train, ship, bus or other vehicles, and escorting individuals and groups on travel tours, sightseeing visits and excursions.

##### **5111 TRAVEL ATTENDANTS AND TRAVEL STEWARDS**

Travel attendants and travel stewards render personal services to ensure the comfort and safety of passengers. These include serving meals and beverages and co-ordinating housekeeping and social activities.

**Tasks include:**

- \* greeting passengers entering aircraft, conducting them to their seats, ensuring that seat-belts are fastened and "no smoking" and similar signs are obeyed;
- \* conducting safety checks and demonstrating the use of safety equipment such as life belts and oxygen masks and assisting passengers in case of emergencies;
- \* distributing reading material, headphones, blankets and similar items and answering passengers' inquiries;
- \* serving pre-prepared meals and refreshments;

- \* selling duty-free goods to passengers;
- \* administering minor medical aid to passengers in need;
- \* taking care of general needs and comfort of ship's and train's passengers;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*51111 Purser, ship*  
*51112 Chief steward/stewardess, ship*  
*51113 Steward/stewardess, ship*  
*51114 Steward/stewardess, flight*  
*51115 Steward/stewardess, train*

**5112 TRANSPORT CONDUCTORS AND RELATED WORKERS**

Transport conductors and related workers collect or issue tickets and take care of safety and comfort on trains, trams, buses and other modes of public transport.

**Tasks include:**

- \* collecting or issuing tickets, passes or fares, or checking the validity of ticket issued previously;
- \* taking care of sleeping-car on a passenger train, including the checking of passengers' tickets, their safety and information requests;
- \* ensuring that safety regulations are respected;
- \* giving information to passengers especially about stops and connections;
- \* co-operating with the driver in maintaining time schedules;
- \* taking appropriate action in case of emergencies;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*51121 Conductor, bus*  
*51122 Conductor, train*  
*51123 Guard, passenger train*  
*51124 Inspector, ticket*  
*51125 Conductor, cable car*  
*51126 Conductor, tram*  
*51127 Conductor, ferryboat*  
*51128 Conductor, hovercraft*

**5113 TRAVEL GUIDES**

Travel guides accompany individuals or groups on sightseeing tours or excursions, describe points of interest and provide other guide services.

**Tasks include:**

- \* escorting tourists and looking after their comfort;
- \* ensuring that reservations for transportation and accommodations are confirmed and that prepared itineraries are met;
- \* accompanying tourists on sightseeing tours and describing points of interest;
- \* accompanying tourists to museums and exhibitions and giving information on exhibits;
- \* guiding groups through factories and similar establishments and giving relevant information;
- \* conducting excursions such as mountain climbing, hunting or fishing;
- \* may collect admission fees;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 51131 Guide, tourist*
- 51132 Guide, travel*
- 51133 Guide, art gallery*
- 51134 Guide, factory tour*
- 51135 Guide, travel/game park*
- 51136 Guide, travel/sightseeing*

**512 HOUSEKEEPING AND CATERING SERVICES WORKERS**

Housekeeping and catering services workers organise, supervise and carry out housekeeping functions in hotels, clubs, hospitals and other institutions, aboard ships and in private households, or plan, prepare and cook meals in hotels, restaurants and other eating places, clubs, hospitals and other institutions, in private households and aboard ships or passenger trains, or serve food and beverages in commercial establishments.

**5121 HOUSEKEEPERS AND RELATED WORKERS**

Housekeepers and related workers organise, supervise and carry out housekeeping functions in hotels, motels, clubs, boarding schools, hospitals, welfare homes and other enterprises and institutions and in private households.

**Tasks include:**

- \* training, discharging, organising and supervising workers employed as domestic staff;
- \* purchasing and issuing supplies and housekeeping equipment;
- \* supervising general welfare and conduct of individuals in institutions;
- \* assisting in cases of minor injury or illness by performing tasks such as taking temperature, giving medicine and putting on bandages;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 51211 Steward, house*
- 51212 Housekeeper (hotel and other establishments)*
- 51213 Matron, housekeeping*
- 51214 Chief steward, hotel*
- 51215 Warden, dormitory*
- 51216 Housekeeper (private service)*

**5122 COOKS**

Cooks plan, organise, prepare and cook foodstuffs in hotels, restaurants and other public eating places, on board ships, on passenger trains, private households and other institutions or establishments.

**Tasks include:**

- \* planning meal and menus, ordering food supplies and preparing and cooking foodstuffs;
- \* monitoring quality at all stages of preparation and presentation and enforcing hygiene regulations;
- \* demonstrating techniques and advising on cooking procedures;
- \* planning, supervising and co-ordinating work in the kitchen;
- \* ensuring cleanliness of kitchen staff, dishes, utensils, kitchen equipment and work areas;
- \* may organise food promotions;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 51221 Chef*
- 51222 Cook, hotels and catering services*
- 51223 Cook, private service*
- 51224 Cook, food canning and preserving*

**5123 WAITERS AND BARTENDERS**

Waiters, waitresses and bartenders serve food and beverages in commercially-operated dining and drinking places, clubs, institutions and canteens, on board ships and on passenger trains.

**Tasks include:**

- \* setting and arranging tables and escorting guests to the table;
- \* presenting menu and recommending customers of menu items;
- \* taking orders and serving food and beverages;
- \* advising on the choice of wines and serving them;
- \* serving alcoholic and non-alcoholic drinks at a bar;
- \* presenting bills to patrons and accepting payments;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

**51231** *Waiter/waitress*  
**51232** *Bartender*  
**51233** *Waiter/waitress, head*  
**51234** *Steward/stewardess, ship/mess*  
**51235** *Waiter/waitress, railway dining car*

**513 PERSONAL CARE AND RELATED WORKERS**

Personal care and related workers perform various tasks in order to improve the appearance of individuals, provide embalming and funeral services, provide child-care and help in looking after children, assist medical and nursing professionals and associate professionals in their duties at hospitals and other institutions, provide home-based personal care, or help veterinary and pharmaceutical professionals or associate professionals in their tasks, and pest extermination services.

**5131 HAIRDRESSERS, BARBERS, BEAUTICIANS AND RELATED WORKERS**

Hairdressers, barbers, beauticians and related workers cut and style hair, shave and trim beards, give beauty treatment, apply cosmetics and make-up and give other kinds of treatment to individuals in order to improve their appearance.

**Tasks include:**

- \* suggesting hair style compatible with client's physical features or determining style from client's instructions and preferences;
- \* cutting, washing, tinting and waving hair;
- \* cutting and washing hair and shaving or trimming beards;
- \* giving scalp treatment;
- \* fitting wigs according to customers' requirements;
- \* cleaning and applying creams, lotions and related products to face and parts of body;
- \* giving facial and body massage;
- \* applying make-up to clients of a beauty parlour;
- \* applying make-up to actors and other performers;
- \* cleaning, shaping and polishing finger and toe-nails and treating minor ailments of the human foot such as corns, calluses or deformed toe-nails;
- \* attending to clients taking baths and administering elementary massage;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

**51311** *Barber*  
**51312** *Hairdresser/hairstylist*  
**51313** *Manicurist*  
**51314** *Beautician*  
**51315** *Make-up artist*  
**51316** *Chiropodist*  
**51317** *Attendant, bath*

## **5132 UNDERTAKERS AND EMBALMERS**

Undertakers and embalmers perform various tasks in the disposal of dead human bodies.

### **Tasks include:**

- \* making arrangements for and conducting funerals, cremations and burials;
- \* embalming human bodies to retard or arrest the process of decay;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

**51321** *Embalmer*

**51322** *Undertaker*

**51323** *Attendant, crematorium*

## **5139 PERSONAL CARE AND HOUSEHOLD SERVICE WORKERS NOT ELSEWHERE CLASSIFIED**

This unit group covers personal care and household service workers not classified elsewhere in Minor Group 513: Personal Care and Related Workers.

### **Tasks include:**

- \* performing simple tasks to assist medical, nursing, midwifery and dental professionals or associate professionals in their duties;
- \* attending to various personal needs and in general providing personal care for persons in need of such care at their own homes because of physical or mental illness or disability or because of impairment due to old age;
- \* helping veterinary or pharmaceutical professionals or associate professionals in performing their tasks;
- \* taking care of employers' children and overseeing their daily activities or engaging in helping teachers to look after schoolchildren;
- \* serving as escorts to clients for a fee;
- \* welcoming clients to night-club and ensuring that they are entertained well;
- \* providing body massage to customers;
- \* exterminating and controlling pests such as rats, cockroaches, termites and insects in buildings, factories or establishments;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

**51391** *Child-care worker*

**51392** *Masseur (non-medical)*

**51393** *Baby sitter*

**51394** *Pest exterminator*

**51395** *Aid, nursing/medical*

51396 *Aid, pharmacy*  
51397 *Aid, veterinary*  
51398 *Social escort*

## **514 PROTECTIVE SERVICE AND RELATED WORKERS**

Protective service and related workers protect individuals and property against fire and other hazards, maintain law and order and enforce laws and regulations.

### **5141 FIRE-FIGHTERS**

Fire-fighters prevent, fight and try to extinguish fires, rescue persons and salvage property and goods during and after fires and major accidents.

#### **Tasks include:**

- \* preventing, fighting and extinguishing fires;
- \* fighting special types of fires and using special equipment in industrial establishments;
- \* preventing and extinguishing fires in crashed or damaged aircraft and rescuing crew and passengers;
- \* rescuing persons and salvaging property and goods during and after fires and major accidents;
- \* preventing or limiting the spread of dangerous substances in case of fires or accidents;
- \* rescuing people and animals stranded or trapped in dangerous situations;
- \* cutting openings in buildings and crashed vehicles to free occupants;
- \* administering first aid;
- \* performing related tasks;
- \* supervising other workers

#### **Examples of the occupations classified here:**

51411 *Fireman (fire brigade)*  
51412 *Fire-fighter (airport)*

### **5142 POLICE OFFICERS**

Police officers maintain law and order and enforce laws and regulations.

#### **Tasks include:**

- \* maintaining law and order;
- \* protecting persons and property from hazards and unlawful acts;
- \* patrolling assigned areas to minimise potential for public disturbance and crime;
- \* investigating accidents, crimes, minor offences and citizens' complaints, gathering evidence, and pursuing, arresting and interviewing suspected criminals;
- \* directing traffic and assuming authority in the event of accidents;

- \* testing persons suspected of driving under the influence of alcohol or drugs and issuing infringement notices for traffic offences;
- \* attending community meetings and answering queries from the public;
- \* providing counselling to victims of crime and their families;
- \* maintaining records and preparing reports;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*51421 Constable*

*51422 Patrolman/pair-olwoman, police*

*51423 Police officer*

**5143 PRISON GUARDS**

Prison guards watch over and maintain discipline among inmates of prisons, reformatories or penitentiaries.

**Tasks include:**

- \* searching arriving prisoners, putting their valuables in safekeeping, escorting prisoners to cells and locking them in;
- \* observing the conduct and behaviour of prisoners to prevent disturbances and escapes;
- \* making periodic inspection tours of cells to inspect and maintain the security of locks, window bars, grilles, doors and gates;
- \* supervising prisoners at work, meals or during recreational periods, patrolling prison areas and reporting breaches of rules, unsatisfactory attitudes or prisoner adjustment problems;
- \* assisting with the implementation of programmes organised for prisoners;
- \* supervising prisoners in transit between courts, prison and other facilities;
- \* performing related tasks;
- \* supervising other workers.

**Example of the occupations classified here:**

*51430 Guard, prison*

**5144 PRIVATE SECURITY GUARDS**

Private security guards guard industrial plant, warehouses or other properties against fire, theft or illegal entry or accompanying vehicles transporting cash or valuables to protect against theft or robbery.

**Tasks include:**

- \* admitting employees and authorised persons and refusing entrance to unauthorised persons;
- \* issuing temporary passes to authorised visitors going in after recording pertinent particulars and collecting them on their return;
- \* keeping particulars of vehicles entering or leaving plant or premises;
- \* checking vehicles leaving premises to prevent unauthorised removal of goods;
- \* patrolling in and around premises for unauthorised entry;
- \* watching for irregularities such as fire hazards, malfunctions of machinery or equipment, lights left on, leaking water pipes and unlocked security doors;
- \* monitoring alarms and contacting supervisors, fire brigades or police by radio or phone if security is breached;
- \* accompanying or riding in vehicles transporting cash, payroll or valuables to protect against theft or robbery;
- \* performing security checks of passengers and luggage at airports;
- \* performing related tasks;
- \* supervising other workers.

**Examples of occupations classified here:**

*51441 Detective, store*

*51442 Guard, security/private*

**5145 PRIVATE DETECTIVES**

Private detectives conduct investigations on behalf of commercial or industrial undertakings or for private individuals.

**Tasks include:**

- \* seeking missing persons;
- \* watching suspected persons' movements;
- \* investigating crimes and theft;
- \* recovering property for companies;
- \* reporting findings to client;
- \* investigating and determining facts in connection with spurious commodities in manufacturing establishments;
- \* giving evidence in court of law;
- \* working in close co-operation with other detective agencies;
- \* performing related tasks;
- \* supervising other workers.

**Example of occupations classified here:**

*51450 Private investigator*

## **5149 PROTECTIVE SERVICE AND RELATED WORKERS NOT ELSEWHERE CLASSIFIED**

This unit group covers protective services workers not classified elsewhere in Minor Group 514: Protective Service and Related Workers. For instance, here should be classified those who act as bodyguards, lifeguards or game wardens.

### **In such cases tasks would include:**

- \* performing the duties of a bodyguard;
- \* patrolling beaches and swimming pools to prevent accidents and to rescue bathers from drowning;
- \* patrolling natural reserves, game parks, forest areas and enclosures to prevent theft and killing of game;
- \* performing various underwater tasks, connected with salvage work or recovering dead bodies;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

- 51491 Life-guard*
- 51492 Game ranger*
- 51493 Bodyguard*
- 51494 Salvage frogman/diver*

## **515 ASTROLOGERS, FORTUNE TELLERS AND RELATED WORKERS**

Astrologers, fortune tellers and related workers predict future events in persons' lives by practising astrology, palmistry or by other techniques and give warnings and advice on possible courses of action.

### **5150 ASTROLOGERS, FORTUNE TELLERS AND RELATED WORKERS**

Astrologers, fortune tellers and related workers predict future events in persons' lives by practising astrology or related techniques and give warnings and advice on possible courses of action.

#### **Tasks include:**

- \* casting horoscopes of individuals at birth or later to recount past and forecast future events and conditions of their lives;
- \* determining auspicious times for various human activities such as inaugurations, marriages, journeys and other religious ceremonies;
- \* studying the influence of the constellation of stars and of other phenomena on a person's life and situation;
- \* interpreting characteristics of client's palms, samples of playing cards, etc.;
- \* advising individuals on precautions to be taken to avoid evil influences;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*51501 Astrologer*  
*51502 Palmist*  
*51503 Fortune teller*  
*51054 Numerologist*

## **52 SALES WORKERS, DEMONSTRATORS AND MODELS**

Sales workers, demonstrators and models demonstrate and sell goods in wholesale or retail shops and similar establishments, as well as at stalls and on markets, or pose as models for artistic creation and display.

**This sub-major group consists of the following minor groups:**

**521 SHOP SALES WORKERS AND DEMONSTRATORS**  
**522 STALL AND MARKET SALES WORKERS**  
**523 FASHION AND OTHER MODELS**

### **521 SHOP SALES WORKERS AND DEMONSTRATORS**

Shop sales workers and demonstrators sell goods in wholesale or retail establishments and demonstrate and explain functions and qualities of these goods.

#### **5210 SHOP SALES WORKERS AND DEMONSTRATORS**

Shop sales workers and demonstrators demonstrate and sell goods in wholesale establishments to retailers and large-scale consumers or to customers in retail establishments.

**Tasks include:**

- \* stacking and displaying items for sales;
- \* advising customers on the selection, price, delivery, use and care of goods and services;
- \* writing bill, invoice, docket or receipt;
- \* giving demonstrations of articles on sale in order to inform customers about their characteristics and mode of use, as well as to stimulate buying interest;
- \* contacting business or private individuals by telephone to solicit sales for good or services;
- \* checking stock and participating in stock takes;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*52101 Sales supervisor*  
*52102 Salesperson, wholesale and retail*  
*52103 Demonstrator*  
*52104 Telemarketer*

## **522 STALL AND MARKET SALES WORKERS**

Stall and market sales workers sell various goods at stalls which are usually placed, by licence, at particular places in streets or other open spaces, or they sell fruits, vegetables and other, mostly perishable, foodstuffs at markets.

### **5220 STALL AND MARKET SALES WORKERS**

Stall and market sales workers sell various goods such as leather or textile craft products, wood carvings, embroidery, lace, or newspapers, periodicals, postcards, cigarettes, chocolates and ice-creams, at stalls usually grouped at particular places in streets or other open spaces by permission of the relevant local authorities, or they sell fruits, vegetables and other, mostly perishable, foodstuffs at markets.

#### **Tasks include:**

- \* obtaining from the local authorities, permission to set up a stand at a particular place in streets or other open spaces;
- \* buying or contracting a regular supply of various goods to be sold such as leather or textile craft products, wood carvings, embroidery or lace, displaying them on stands and selling them;
- \* buying or contracting a regular supply of newspapers, periodicals, postcards, cigarettes, chocolates and ice-creams and selling them at kiosks;
- \* buying from wholesale markets, or directly from farmers', fresh fruits and vegetables or other, mostly perishable, foodstuffs and selling them at markets;
- \* loading and unloading goods for sale;
- \* filling up cars and motorcycles with gasoline;
- \* displaying or demonstrating products and explaining qualities of products to customers;
- \* receiving payment and keeping accounts;
- \* wrapping or packing goods sold and reporting or resolving customer complaints;
- \* salvaging reusable materials from industrial, commercial and private establishments for resale;
- \* performing related tasks;
- \* supervising other workers.

#### **Examples of the occupations classified here:**

**52201** *Salesperson, kiosk*

**52202** *Salesperson, market*

**52203** *Attendant, petrol pump*

**52204** *Salesperson, street stall*

**52205** *Buyer, scrap materials*

## **523 FASHION AND OTHER MODELS**

Fashion and other models wear and display clothing and other items for sale or pose as models for advertising or for artistic creation.

## **5230 FASHION AND OTHER MODELS**

Fashion and other models wear and display clothing and other items for sale or pose as models for advertising or for artistic creation.

### **Tasks include:**

- \* dressing in sample apparel of new or current styles or of type wanted by customer;
- \* walking, turning and otherwise demonstrating style and other characteristics to best advantage;
- \* posing as model for artistic photography, sculpture or painting;
- \* posing as model for still photographs or films and video action photography in the field of advertising;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

*52301 Model, fashion*

*52012 Model, advertising*

*52013 Model, artist's*

## **MAJOR GROUP 6: SKILLED AGRICULTURAL AND FISHERY WORKERS**

Skilled agricultural and fishery workers grow and harvest field or tree and shrub crops, gather wild fruits, herbs and vegetables, breed, tend or hunt animals, produce a variety of animal husbandry products, cultivate, conserve and exploit forests, breed or catch fish and cultivate or gather other forms of aquatic life for sale or delivery on a regular basis to wholesalers, marketing organisations or at markets. Most occupations in this major group require skills at the second skill level.

**This major group consists of the following sub-major groups:**

- 61 AGRICULTURAL AND RELATED WORKERS**
- 62 FISHERY WORKERS, HUNTERS AND TRAPPERS AND GATHERERS**

### **61 AGRICULTURAL AND RELATED WORKERS**

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Agricultural and related workers plan and carry out the necessary operations to grow and harvest field or tree and shrub crops, breed animals, produce a variety of animal husbandry products, or cultivate, conserve and exploit forests for sale or delivery on a regular basis to wholesalers, marketing organisations or at markets.

**This sub-major group consists of the following minor groups:**

- 611 MIXED FARMING WORKERS**
- 612 PLANTATION WORKERS**
- 613 SPECIALISED FARMING WORKERS**
- 614 FORESTRY WORKERS AND LOGGERS**

#### **611 MIXED FARMING WORKERS**

Mixed farming workers plan and carry out the necessary operations for mixed farming of the kind that produces a combination of both crops and animals and related products for sale or delivery on a regular basis to wholesalers, marketing organisations or at markets.

##### **6111 MIXED CROP GROWERS (NO HUSBANDRY)**

Mixed crop growers (no husbandry) plan and carry out the necessary operations to grow and harvest field, tree and various other crops, for sale or delivery on a regular basis to wholesalers, marketing organisations or at markets.

**Tasks include:**

- \* determining the kinds and amounts of crops to be grown;
- \* purchasing seeds, fertiliser and other supplies;
- \* renting or investing in land and land improvements, buildings and machinery;
- \* performing operations such as land preparation, sowing, planting, cultivating and harvesting crops;
- \* storing and carrying out some basic processing of their produce;

- \* maintaining farm buildings, machinery and equipment;
- \* delivery or marketing farm products;
- \* performing related tasks;
- \* supervising other workers.

**Example of the occupations classified here:**

**61110** *Mixed crop grower (no husbandry)*

**6112 MIXED PRODUCT FARMERS (CROPS AND HUSBANDRY)**

Mixed product farmers (crops and husbandry) plan and carry out the necessary operations to grow and harvest field, tree and various other crops, as well as to breed, raise and tend animals and to produce a variety of animal husbandry products, for sale or delivery on a regular basis to wholesalers, marketing organisations or at markets.

**Tasks include:**

- \* determining the kinds and amounts of crops to be grown and animals to be raised;
- \* purchasing seeds, fertiliser and other supplies;
- \* renting or investing in land and land improvements, buildings, machinery, livestock and other animals;
- \* performing operations such as land preparation, sowing, planting, cultivating and harvesting crops;
- \* producing or buying fodder and other food supplies;
- \* breeding, raising and tending animals;
- \* monitoring and maintaining the health of stock;
- \* killing and skinning animals, and preparing animals or animal products for market;
- \* storing and carrying out some basic processing of their produce;
- \* maintaining farm buildings, machinery and equipment;
- \* delivery or marketing farm products;
- \* performing related tasks;
- \* supervising other workers.

**Example of the occupations classified here:**

**61120** *Mixed product farmer (crops and husbandry)*

**612 PLANTATION WORKERS**

Plantation workers plan and carry out the necessary operations to grow and harvest specialised crops on large estates based on rules and regulations provided by management, for sale, through a specialised section.

## **6121 RUBBER PLANTATION WORKERS**

Rubber plantation workers plan and carry out the necessary operations to grow and tap rubber trees on large estates, following procedures laid down by management.

### **Tasks include:**

- \* tapping of panels allocated by the management in accordance with the required standards;
- \* collecting all latex, including second collection, commencing at such time-as may be fixed by management;
- \* delivering and/or discharging of latex collected at specified points or reception stations;
- \* collecting all tree lace and cup lump and sorting them out where required;
- \* cleaning of cups, buckets and churns;
- \* positioning and cleaning of the spout;
- \* maintaining the front, rear and side channels on trees;
- \* ensuring the quality and cleanliness of all crop and where necessary adding preservative;
- \* maintenance of tapping trunc below panel;
- \* performing related tasks;

### **Example of the occupations classified here:**

*61210 Tapper, rubber (plantation)*

## **6122 OIL PALM PLANTATION WORKERS**

Oil palm plantation workers plan and carry out the necessary operations to grow and harvest oil palm trees on large estates, following procedures laid down by management.

### **Tasks include:**

- \* cutting of ripe bunches within the allotted areas according to the standard of ripeness, the frequency of the harvesting rounds and techniques laid down by management;
- \* cutting and stacking of fronds at prescribed stacking points in the course of the harvesting rounds in accordance with current practice;
- \* cutting and trimming of bunch stalks as required by the management in accordance with current practice;
- \* carrying of bunches cut and loose fruit to prescribed collection points and where required, depositing into nets or containers;
- \* removal and disposal of rotten bunches;
- \* maintaining in good condition of harvesting tools and wheelbarrows;
- \* performing related tasks;

### **Example of the occupations classified here:**

*61220 Harvester, oil palm (plantation)*

## **6129 OTHER PLANTATION WORKERS**

Other plantation workers plan and carry out the necessary operations to grow and harvest crops, except rubber and oil palm, on large estates, following procedures laid down by management.

### **Tasks include:**

- \* harvesting the ripe crops within the allotted areas according to the standard of ripeness, the frequency of the harvesting rounds and techniques laid down by management;
- \* maintaining the crops in good condition in accordance with current practice;
- \* carrying of harvested crops to prescribed collection points;
- \* removal and disposal of rotten plants;
- \* maintaining in good condition of harvesting tools;
- \* performing related tasks;

### **Example of the occupations classified here:**

*61290 Other plantation worker (general)*

## **613 SPECIALISED FARMING WORKERS**

Specialised farming workers plan and carry out the necessary operations to grow and harvest field crops, mainly one or a few special types of crops or breed, raise and tend livestock or produce animal husbandry products, and to produce horticultural and nursery products, for sale or delivery on a regular basis to wholesalers, marketing organisations or at markets.

### **6131 FIELD CROP AND VEGETABLE FARM WORKERS**

Field crop and vegetable farm workers plan and carry out the necessary operations to grow and harvest various types of field crops and vegetables for sale or delivery on a regular basis to wholesalers, marketing organisations or at markets.

#### **Tasks include:**

- \* determining the kinds and amounts of crops to be grown;
- \* purchasing seeds, fertiliser and other supplies;
- \* renting or investing in land and land improvements, buildings, working animals, equipment and machinery;
- \* performing farm operations such as land preparation, sowing, planting, cultivating and harvesting crops and field vegetables;
- \* storing and carrying out some basic processing of their produce;
- \* tending working animals and maintaining farm buildings, machinery and equipment;
- \* delivering or marketing farm products;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 61311 Farm worker, field crop*
- 61312 Farm worker, padi*
- 61313 Farm worker, vegetable*
- 61314 Farm worker, tobacco*
- 61315 Farm worker, tapioca*
- 61316 Farm worker, groundnut*
- 61317 Farm worker, sugarcane*

**6132 TREE AND SHRUB CROP FARM WORKERS**

Tree and shrub crop farm workers plan and carry out the necessary operations to grow and harvest trees and shrubs, for sale or delivery on a regular basis to wholesalers, marketing organisations or at markets.

**Tasks include:**

- \* determining the kinds and amounts of crops to be grown;
- \* purchasing seeds, fertiliser and other supplies;
- \* renting or investing in land and land improvements, buildings, working animals, equipment and machinery;
- \* performing farm operations such as land preparation, sowing, planting and tending trees or bushes, collecting sap and harvesting crops;
- \* storing and carrying out some basic processing of their produce;
- \* tending working animals and maintaining farm buildings, machinery and equipment;
- \* delivering or marketing farm products;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 61321 Farm worker, rubber*
- 61322 Farm worker, oil palm*
- 61323 Farm worker, fruit and nut trees*
- 61324 Farm worker, pineapple*
- 61325 Farm worker, coffee*
- 61326 Farm worker, tea*
- 61327 Farm worker, cocoa*
- 61328 Farm worker, coconut*

**6133 HORTICULTURAL AND NURSERY FARM WORKERS**

Horticultural and nursery farm workers plan and carry out the necessary operations to cultivate trees, shrubs, flowers and other plants, and to produce saplings, bulbs and seeds, for sale or delivery on a regular basis to wholesalers, marketing organisations or at markets.

**Tasks include:**

- \* determining the kinds and amounts of horticultural and nursery products to be grown;
- \* purchasing seeds, bulbs, fertiliser and other supplies;
- \* renting or investing in land and land improvements, buildings, working animals, equipment and machinery;
- \* performing farm operations such as land preparation, sowing, growing vegetables by intensive cultivation, cultivating flowers, trees or bushes and harvesting crops; ,
- \* producing saplings, bulbs and seeds;
- \* cultivating flowers, trees, shrubs and other plants in parks or public or private gardens;
- \* growing plants for exhibition or medicinal purposes;
- \* delivering or marketing products;
- \* storing and carrying out some basic processing of their produce;
- \* tending working animals and maintaining buildings, machinery and equipment;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 61331 Nursery worker*
- 61332 Horticultural grower*
- 61333 Hydroponics worker*
- 61334 Greenhouse worker*
- 61335 Farm worker, mushroom*

**6134 LIVESTOCK AND DAIRY FARM WORKERS**

Livestock and dairy farm workers plan and carry out the necessary operations to breed, raise and tend livestock to be used as working, sporting or pet animals, as well as for meat, milk, hair, hides and other products, for sale or delivery on a regular basis to wholesalers, marketing organisations or at markets.

**Tasks include:**

- \* determining the kinds and amounts of livestock and livestock products to be produced;
- \* purchasing animals, producing and purchasing fodder and other supplies;
- \* renting or investing in grazing land, buildings, equipment and machinery;
- \* breeding, raising and tending livestock;
- \* milking, slaughtering and skinning animals, and preparing animals or animal products for market;
- \* storing and carrying out some basic processing of their produce;
- \* maintaining farm buildings, machinery and equipment;
- \* delivering or marketing farm products;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

**61341** *Farm worker, livestock*

**61342** *Farm worker, pig*

**61343** *Farm worker, dairy*

**61344** *Breeder, cattle*

**61345** *Breeder, rabbit*

**6135 POULTRY FARM WORKERS**

Poultry farm workers plan and carry out the necessary operations to breed, raise and tend poultry for sale or delivery of eggs, meat or feathers on a regular basis to wholesalers, marketing organisations or at markets.

**Tasks include:**

- \* determining the kinds and amounts of poultry and poultry products to be produced;
- \* purchasing chicks, growing and purchasing food and other supplies;
- \* renting or investing in buildings, equipment and machinery;
- \* observing egg quality, bird body weight, health and conditions, and adjust feeding programmes;
- \* working in a hatchery performing various tasks requiring knowledge of hatching eggs for commercial purposes;
- \* collecting semen from roosters and artificially inseminating hens;
- \* vaccinating poultry against diseases;
- \* collecting, grading and packaging eggs and selecting poultry for slaughter;
- \* slaughtering, dressing and packing poultry for shipment;
- \* cleaning and disinfecting equipment, pens, sheds and cages;
- \* storing and carrying out some basic processing of their produce;
- \* maintaining farm buildings, machinery and equipment;
- \* delivering or marketing farm products;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

**61351** *Farm worker, poultry*

**61352** *Hatchery worker, poultry*

**61353** *Inseminator, poultry*

**61354** *Vaccinator, poultry*

**61355** *Operator, incubator*

**6136 APIARY AND SERICULTURE WORKERS**

Apiary and sericulture workers plan and carry out the necessary operations to breed, raise and tend insects such as honey bees, silkworms or other species, for sale or delivery of honey, beeswax, silk cocoons, etc., on a regular basis to wholesalers, marketing organisations or at markets.

**Tasks include:**

- \* determining the kinds and amounts of insect products to be produced;
- \* purchasing insects, growing or purchasing food and other supplies;
- \* renting or investing in buildings, equipment and machinery;
- \* breeding, raising and tending insects and collecting their products;
- \* storing and carrying out some basic processing of their produce;
- \* maintaining buildings, machinery and equipment;
- \* delivering or marketing products;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

**61361** *Apiary worker*

**61362** *Sericulture worker*

**6137 SKILLED MIXED ANIMAL HUSBANDRY FARM WORKERS**

Skilled mixed animal husbandry farm workers plan and carry out the necessary- operations to breed, raise and tend livestock to be used as working, sporting or pet animals, as well as for meat, milk, hair, hides and other products, for sale or delivery on a regular basis to wholesalers, marketing organisations or at markets.

**Tasks include:**

- \* determining the kinds and amounts of livestock and livestock products to be produced;
- \* purchasing animals, producing and purchasing fodder and other supplies;
- \* renting or investing in grazing land, buildings, equipment and machinery;
- \* breeding, raising and tending livestock;
- \* milking, slaughtering and skinning animals, and preparing animals or animal products for market;
- \* storing and carrying out some basic processing of their produce;
- \* maintaining farm buildings, machinery and equipment;
- \* delivering or marketing farm products;
- \* performing related tasks;
- \* supervising other workers.

**Example of the occupations classified here:**

**61370** *Farm worker, skilled/mixed animal husbandry*

## **614    FORESTRY WORKERS AND LOGGERS**

Forestry workers and loggers plan and carry out the necessary operations to cultivate, conserve and exploit forests, for sale or delivery of forestry products.

### **6141    FORESTRY WORKERS AND LOGGERS**

Forestry workers and loggers carry out the necessary operations to cultivate, conserve and exploit forests, for sale or delivery of forestry products.

#### **Tasks include:**

- \* establishing and caring for forest stands;
- \* locating trees to be felled and estimating volume of timber;
- \* trimming, topping and felling trees and sawing them into logs;
- \* shaping rough wooden products from logs at felling site;
- \* stacking logs, loading them in chutes or floating them down rivers;
- \* grading logs at log pond;
- \* keeping watch to detect forest fires and participating in firefighting operations;
- \* delivering or marketing forestry products;
- \* performing related tasks;
- \* supervising other workers.

#### **Examples of the occupations classified here:**

- 61411    Logger*
- 61412    Feller, logging*
- 61413    Sealer, logging*
- 61414    High climber, logging*
- 61415    Cruiser, timber*
- 61416    Grader, log*
- 61417    Forest ranger*
- 61418    Forestry worker (skilled)*

## **6142    CHARCOAL BURNERS AND RELATED WORKERS**

Charcoal burners and related workers carry out the necessary operations to convert wood into charcoal or to extract crude turpentine from wood, using traditional techniques.

#### **Tasks include:**

- \* operating a simple kiln to convert wood into charcoal by a slow-burning process;
- \* operating a simple digester or still at the tree-felling site to obtain or distil crude wood turpentine;
- \* performing related tasks;
- \* supervising other workers.

#### **Example of the occupations classified here:**

- 61420    Burner, charcoal**

## **62 FISHERY WORKERS, HUNTERS AND TRAPPERS AND GATHERERS**

Fishery workers, hunters and trappers and gatherers catch, breed and cultivate fish and other forms of aquatic life, hunt and trap mammals, birds and reptiles, or gather wild fruits, herbs and vegetables for sale or delivery, on a regular basis, to wholesalers, marketing organisations or at markets.

**This sub-major group consists of the following minor groups:**

### **621 FISHERY WORKERS**

### **622 HUNTERS AND TRAPPERS AND GATHERERS**

#### **621 FISHERY WORKERS**

Fishery workers catch, breed and cultivate fish and other forms of aquatic life, for sale or delivery on a regular basis, to wholesalers, marketing organisations or at markets.

#### **6211 AQUATIC LIFE CULTIVATION WORKERS**

Aquatic life cultivation workers breed and raise fish, prawns and other forms of aquatic life, for sale or delivery on a regular basis to wholesalers, marketing organisations or at markets.

#### **Tasks include:**

- \* planning and managing the operation of hatcheries taking into consideration environmental and market factors;
- \* renting or investing in farm facilities;
- \* purchasing food and other supplies;
- \* monitoring and maintaining water quality to maintain health standards and optimal growing conditions;
- \* identifying and controlling environmental toxins and diseases;
- \* monitoring stock growth rates to determine when to harvest;
- \* directing and overseeing the harvesting, grading and packaging of fish, prawns, oysters and other aquatic stock;
- \* preparing fish and other products for shipment;
- \* cleaning, freezing, icing or salting aqua products;
- \* constructing and maintaining farm facilities;
- \* delivering or marketing products;
- \* performing related tasks;
- \* supervising other workers.

#### **Examples of the occupations classified here:**

- 62111 *Pearl culturist***
- 62112 *Farm worker, fish***
- 62113 *Farm worker, prawn***
- 62114 *Farm worker, crocodile***
- 62115 *Farm worker, oyster***
- 62116 *Farm worker, snake***

## **6212 INLAND AND COASTAL WATER FISHERY WORKERS**

Inland and coastal water fishery workers, alone or as members of fishing-vessel crews, catch fish or gather other forms of aquatic life in inland or coastal water, for sale or delivery on a regular basis to wholesalers, marketing organisations or at markets.

### **Tasks include:**

- \* preparing and repairing nets and other fishing gear and equipment;
- \* operating and maintaining fishing vessels to, from and at fishing grounds'; '
- \* baiting, setting and hauling in fishing gear;
- \* gathering different forms of aquatic life from shores and shallow water;
- \* cleaning, freezing, icing or salting catch;
- \* diving to gather oysters used for seed-pearl cultivation;
- \* delivering or marketing products;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

*62121 Fishery worker, inland*

*62122 Fishery worker, coastal*

*62123 Diver, oyster*

## **6213 DEEP-SEA FISHERY WORKERS**

Deep-sea fishery workers, as members of fishing vessel crews, catch deep-sea fish, for sale or delivery on a regular basis to wholesalers, marketing organisations or at markets.

### **Tasks include:**

- \* preparing and repairing nets and other fishing gear and equipment;
- \* operating and maintaining fishing vessels to, from and at fishing grounds;
- \* baiting, setting and hauling in fishing gear;
- \* cleaning, freezing, icing or salting catch on- or offshore;
- \* delivering or marketing catch;
- \* performing related tasks;
- \* supervising other workers.

### **Example of the occupations classified here:**

*62130 Fishery worker, deep-sea*

## **622 HUNTERS AND TRAPPERS AND GATHERERS**

Hunters and trappers and gatherers hunt and trap mammals, birds and reptiles mainly for meat, skin, feathers and other products, or gather wild fruits, herbs and vegetables, for sale or delivery on a regular basis to wholesalers, marketing organisations or at markets.

## **6221 HUNTERS AND TRAPPERS**

Hunters and trappers catch and kill mammals, birds or reptiles mainly for meat, skin, feathers and other products, for sale or delivery on a regular basis to wholesalers, marketing organisations or at markets.

### **Tasks include:**

- \* determining the types of mammals, birds or reptiles to hunt or trap;
- \* 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;
- \* performing related tasks;
- \* supervising other workers.

### **Example of the occupations classified here:**

**62210** *Hunter and trapper*

## **6222 GATHERERS OF WILD FRUITS, HERBS AND VEGETABLES**

Gatherers of wild fruits, herbs and vegetables gather or collect wild fruits, herbs and vegetables either alone or in groups.

### **Tasks include:**

- \* determining the type of wild fruits, herbs and vegetables to be gathered or collected;
- \* gathering or collecting wild fruits, herbs and vegetables either alone or in groups;
- \* sorting gathered products and preparing for market;
- \* selling gathered products directly to customers or wholesalers;
- \* performing related tasks;
- \* supervising other workers.

### **Example of the occupations classified here: 62220**

**62220** *Gatherer, wild fruits, herbs and vegetables*

## **MAJOR GROUP 7: CRAFT AND RELATED TRADES WORKERS**

Craft and related trades workers apply their specific knowledge and skills in the fields of mining and construction, form metal, erect metal structures, make, fit, maintain and repair machinery, equipment or tools, carry out printing work as well as produce or process foodstuffs, textiles, or wooden, metal and other articles.

The work is carried out by hand and by hand-powered and other tools which are used to reduce the amount of physical effort and time required for specific tasks, as well as to improve the quality of the products. The tasks call for an understanding of all stages of the production process, the materials and tools used, and the nature and purpose of the final product. Most occupations in this major group require skills at the second skill level.

**This major group consists of the following sub-major groups:**

- 71 EXTRACTION AND CONSTRUCTION TRADES WORKERS**
- 72 METAL, MACHINERY AND RELATED TRADES WORKERS**
- 73 PRECISION, PRINTING AND RELATED TRADES WORKERS**
- 74 FOOD PROCESSING, WOODWORKING, TEXTILE, LEATHER AND RELATED TRADES WORKERS**

### **71 EXTRACTION AND CONSTRUCTION TRADES WORKERS**

Extraction and construction trades workers extract and work solid minerals from underground or surface mines or quarries, shape and finish stone for building and other purposes, or construct, maintain and repair buildings and other structures.

**This sub-major group consists of the following minor groups:**

- 711 MINERS, SHOTFIRERS, STONE CUTTERS AND CARVERS**
- 712 BUILDING FRAME AND RELATED TRADES WORKERS**
- 713 BUILDING FINISHERS AND RELATED TRADES WORKERS**
- 714 PAINTERS, BUILDING STRUCTURE CLEANERS AND RELATED TRADES WORKERS**

#### **711 MINERS. SHOTFIRERS. STONE CUTTERS AND CARVERS**

Miners, shotfirers, stone cutters and carvers extract solid minerals from underground or surface mines or quarries, charge and detonate explosives, or cut, shape and finish stone for building and other purposes.

##### **7111 MINERS AND QUARRY WORKERS**

Miners and quarry workers extract solid minerals from underground or surface mines or quarries, and charge and detonate explosives to fragment or dislodge coal, ores, rocks or other minerals in mines or quarries, or to clear building sites and similar places.

**Tasks include:**

- \* extracting coal, ores and other solid minerals from underground or surface mines;
- \* extracting granite, limestone, slate, flint or other kinds of rocks from quarries;

- \* setting and operating machines which cut channels or drill blasting holes into the open face of mines or quarries;
- \* cutting, fitting and installing wood or steel props, pillars and arches to support walls and roof of underground workings;
- \* collecting samples of coal or ore for laboratory analysis;
- \* extracting chalk, clay, gravel or sand from open pits;
- \* ensuring observance of workplace safety procedures and regulations;
- \* determining location of explosions required and giving instructions on holes to be drilled;
- \* deciding on force required and placing correct quantity of explosives and preparing blasting site;
- \* firing blasting-charge in mines or quarries;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

**71111** *Miner*  
**71112** *Quarrier*  
**71113** *Shot firer/blaster*  
**71114** *Sampler, mine*  
**71115** *Sampler, quarry*

**7112 STONE SPLITTERS, CUTTERS AND CARVERS**

Stone splitters, cutters and carvers break quarried stones into slabs or blocks, or cut, shape and finish stones for building, ornamental, monumental and other purposes.

**Tasks include:**

- \* driving wedges into quarried stones to break it into slabs or blocks;
- \* selecting and grading slabs and blocks of granite, marble and other stones;
- \* cutting, shaping and finishing building and monumental stones such as granite or marble by using hand or hand-powered tools;
- \* making patterns and marking shapes on stone for subsequent sawing, planing, drilling and other dressing and cutting operations;
- \* setting stone in the erection of monuments and memorials;
- \* cutting and carving characters, figures or designs on stone used for decorative facings on buildings and on stone blocks used for monuments or memorials;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

**71121** *Splitter, stone*  
**71122** *Cutter and finisher, stone*  
**71123** *Grader, stone*  
**71124** *Carver, stone*

*71125 Stonework layout man*  
*71126 Grinder, stone*  
*71127 Carver-setter, monument*  
*71128 Polisher, stone*

## **712 BUILDING FRAME AND RELATED TRADES WORKERS**

Building frame and related trades workers construct, maintain and repair internal and external structure of buildings and other constructions.

### **7121 BRICKLAYERS AND STONEMASONS**

Bricklayers and stonemasons erect and repair foundations, walls and structures of brick, stone, concrete block and similar materials.

#### **Tasks include:**

- \* laying bricks, hollow tiles and similar building blocks to construct or repair walls, partitions, arches and other structures such as smokestacks, furnaces, converters, kilns and ovens, piers and abutments;
- \* laying walks, curbs and pavements of stone;
- \* performing related tasks;
- \* supervising other workers.

#### **Examples of the occupations classified here:**

*71211 Bricklayer, construction*  
*71212 Stonemason, construction*  
*72113 Firebrick layer*  
*72114 Paviour*

### **7122 CONCRETE PLACERS, CONCRETE FINISHERS AND RELATED WORKERS**

Concrete placers, concrete finishers and related workers erect reinforced concrete frameworks and structures, make forms for moulding concrete, reinforce concrete surfaces, cement openings in walls or casings of oil and gas wells, finish and repair cement surfaces and carry out terrazzo work.

#### **Tasks include:**

- \* constructing and repairing reinforced concrete floors, walls, tanks, silos and other concrete structures;
- \* making shuttering or assembling prefabricated forms for moulding concrete;
- \* cutting, bending and fixing metal reinforcing rods in concrete moulding forms;
- \* cementing openings in walls or casings of oil and gas wells;
- \* finishing and smoothing surfaces of concrete structures;
- \* applying a durable, smooth surfacing composed of cement, sand, pigment and marble particles to floors (terrazzo);
- \* mixing sand, gravel, dry cement and water to make concrete or cement mortar;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*71221 Reinforced concreter*  
*71222 Shutterer, concrete*  
*71223 Steel bender*  
*71224 Finisher, cement*  
*71225 Terrazzo worker*  
*71226 Cementer, petroleum and gas wells*  
*71227 Mixer, concrete*

**7123 CARPENTERS AND JOINERS**

Carpenters and joiners cut, shape, assemble, erect, maintain and repair various types of wooden structures and fittings.

**Tasks include:**

- \* making, altering and repairing structural and other woodwork at a work-bench and on a construction site;
- \* constructing, erecting and installing heavy-framed wooden structures on building sites;
- \* fitting and assembling internal and external fixtures of buildings such as doors, door and window frames, built-in wardrobes, facings and panelling;
- \* making, repairing and fitting scenic fixtures for theatrical performances, motion picture or television productions;
- \* constructing and repairing wooden fixtures and fittings in train coaches, aircraft, ships, boats, floats, pontoons and other vehicles;
- \* cutting, shaping, fitting and assembling wooden parts, mainly at a work-bench;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*71231 Carpenter*  
*71232 Carpenter, construction*  
*71233 Joiner, construction*  
*71234 Joiner, ship*  
*71235 Carpenter, ship*  
*71236 Joiner, aircraft*  
*71237 Carpenter, stage and studio*

**7129 BUILDING FRAME AND RELATED TRADES WORKERS NOT ELSEWHERE CLASSIFIED**

This unit group covers building frame and related trades workers not classified elsewhere in Minor Group 712: Building Frame And Related Trades Workers. For instance, here should be classified those who perform miscellaneous construction and building maintenance tasks.

**Tasks include:**

- \* performing miscellaneous construction and building maintenance work on structures such as office buildings, apartment houses, factories and similar establishments in good repair;

- \* laying clay, concrete or cast-iron pipes in ditches to form sewers, drains, water mains or for other purposes;
- \* performing construction, maintenance or repair work at unusual heights;
- \* erecting temporary metal or wooden scaffolding on building sites;
- \* demolishing buildings and other structures;
- \* erecting, maintaining and repairing small and large buildings and other structures by using traditional building techniques and materials;
- \* erecting billboards;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 71291 Maintenance worker, building*
- 71292 Layer, pipe and drain*
- 71293 Scaffolder*
- 71294 Demolition worker*
- 71295 Builder, house/traditional materials*
- 71296 Erector, billboard*
- 71297 Steeplejack*

**713 BUILDING FINISHERS AND RELATED TRADES WORKERS**

Building finishers and related trades workers cover, apply or install, maintain and repair roofs, floors, walls, insulation systems, glass in windows or other frames, as well as plumbing, piping and electrical systems in buildings and other constructions.

**7131 ROOFERS**

Roofers cover, maintain and repair roof frameworks with one or more kinds of materials.

**Tasks include:**

- \* covering roof frameworks with slates and tiles, synthetic materials, asphalt and metal sheets, or thatching materials;
- \* installing awnings;
- \* applying insulating material to the roof;
- \* maintaining and repairing roofs;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 71311 Thatcher*
- 71312 Roofer, composition*
- 71313 Roofer, asphalt*
- 71314 Roofer, metal*
- 71315 Roofer, slate and tile*
- 71316 Roofer, wood-shingle*
- 71317 Awning installer*

## **7132 FLOOR LAYERS AND TILE SETTERS**

Floor layers and tile setters install, maintain and repair parquet and other kinds of flooring, or they cover floors, walls and other surfaces with tiles or mosaic panels for decorative or other purposes.

### **Tasks include:**

- \* preparing floor areas for covering with parquet, tiles or other material,s;
- \* assembling parquetry pieces or other materials and laying them on floors according to design and other specifications;
- \* preparing wall areas for covering with composition tiles or other materials for decorative or other purposes such as acoustical insulation;
- \* setting tiles and constructing and laying mosaic panels to walls, floors and other surfaces;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

- 71321 Setter, tile*
- 71322 Setter, marble*
- 71323 Parquetry worker*
- 71234 Cutter-setter, mosaic*
- 71235 Layer, tile/composition*

## **7133 PLASTERERS**

Plasterers install and repair laths and apply plaster to walls and ceilings of buildings.

### **Tasks include:**

- \* installing and repairing laths and applying one or more coats of plaster to interior walls and ceilings of buildings to produce finished surface;
- \* moulding and installing ornamental plaster panels and casting and trimming ornamental plaster cornices;
- \* applying protective and decorative covering of cement, plaster and similar materials to exterior building surfaces;
- \* making and installing decorative plaster fixtures of fibrous plaster;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

- 71331 Plasterer*
- 71332 Plasterer, stucco*
- 71333 Plasterer, fibrous*
- 71334 Plasterer, ornamental*

## **7134 INSULATION WORKERS**

Insulation workers apply and repair insulating materials to buildings, boilers, pipes or refrigeration and air-conditioning equipment.

### **Tasks include:**

- \* 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;
- \* applying insulating materials to exposed surfaces of equipment such as boilers, pipes and tanks;
- \* insulating refrigeration and air-conditioning equipment with various materials to retain desired temperature;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

*71341 Insulator, building*

*71342 Insulator, boiler and pipe*

*71343 Insulator, acoustical*

*71344 Insulator, refrigeration and air-conditioning equipment*

*71345 Insulation worker, sound-proofing*

## **7135 GLAZIERS**

Glaziers cut, fit and set glass in windows, doors, shop fronts and other frames.

### **Tasks include:**

- \* selecting glass panes, cutting them to measure and fixing them in windows, doors and partitions of buildings;
- \* fastening glass panes in skylights;
- \* installing flat or curved plate glass in shop fronts, swing-doors, show-cases, portholes or other openings;
- \* cutting, assembling and installing pieces of glass in lead or copper framework to form decorative windows and panels;
- \* installing ordinary or shatter-proof glass panels in windows, doors and windscreens of vehicles;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

*71351 Glazier, building*

*71352 Glazier, vehicle*

*71353 Glazier, leaded-glass*

*71354 Glazier, patent roofing*

*71355 Glazier, plate-glass*

## **7136 PLUMBERS AND PIPE FITTERS**

Plumbers and pipe fitters assemble, install and repair plumbing fixtures, or pipes and pipeline systems.

### **Tasks include:**

- \* cutting, threading, bending, jointing, assembling, installing, maintaining and repairing pipes, fittings and fixtures of drainage, heating, water supply and sewerage systems;
- \* assembling, installing, maintaining and repairing pipeline systems in ships; aircraft, buildings, industrial plant, etc.;
- \* laying clay, concrete or cast-iron pipes in ditches to form sewers, drains or water mains, or for other purposes;
- \* excavating water wells and deep pits for structural footings;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

- 71361 Plumber*
- 71362 Fitter, pipe*
- 71363 Fitter, pipe and tube/aircraft*
- 71364 Fitter, pipe/marine*
- 71365 Fitter, pipe/sewerage*
- 71366 Fitter, pipe/ventilation*
- 71367 Fitter, pipe/water supply*
- 71368 Digger, well*

## **714 PAINTERS. BUILDING STRUCTURE CLEANERS AND RELATED TRADES WORKERS**

Painters, building structure cleaners and related trades workers prepare surfaces, apply paint and similar materials to buildings and other structures, vehicles, or various manufactured articles, cover interior walls and ceilings with wallpaper, clean exterior surfaces of buildings and other structures.

### **7141 PAINTERS AND RELATED WORKERS**

Painters and related workers prepare surfaces of buildings and other structures for painting, apply paint or similar materials or cover interior walls and ceilings with wallpaper, silk or other fabrics.

### **Tasks include:**

- \* cleaning and preparing walls and other surfaces of buildings for painting or wallpapering;
- \* applying or spraying paint, varnish, shellac and similar materials to surfaces, fixtures and fittings of buildings;
- \* measuring and mounting wallpaper, silk or other fabrics on interior walls and ceilings of buildings and ships;
- \* applying or spraying paint, red lead, bituminous emulsion and similar protective materials to ships' hulls and metal structures, steel frameworks of buildings, bridges and metal construction;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*71411 Painter, building*  
*71412 Painter, structural steel*  
*71413 Wall/ceiling paperhanger*  
*71414 Whitewasher*

**7142 VARNISHERS AND RELATED PAINTERS**

Varnishers and related painters paint vehicles such as cars, buses or trucks, or apply protective coats of enamel or varnish on metal, wooden and other manufactured articles, usually with a hand-spraying device.

**Tasks include:**

- \* 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;
- \* planning, laying out and painting letters and designs to make signs;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*71421 Spray-painter, metal*  
*71422 Spray-painter, automobile*  
*71423 Painter, manufactured articles*  
*71424 Painter, metal*  
*71425 Varnisher, manufactured articles*  
*71426 Varnisher, metal*  
*71427 Signpainter*

**7143 BUILDING STRUCTURE CLEANERS**

Building structure cleaners clean exterior surfaces of buildings and other structures.

**Tasks include:**

- \* cleaning the exterior surfaces of stone, brick, metal or similar materials by means of chemicals, of a jet of steam or sand applied under great pressure;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*71431 Cleaner, building exteriors*  
*71432 Sandblaster, building exteriors*

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

Metal, machinery and related trades workers cast, weld, forge and, by other methods, form metal, erect, maintain and repair heavy metal structures, install electrical wiring system, fit, maintain and repair machinery including engines, vehicles, electrical and electronic equipment, or they produce tools and various non-precious-metal articles.

**This sub-major group consists of the following minor groups:**

- 721 METAL MOULDERS, WELDERS, SHEET METAL WORKERS, STRUCTURAL METAL PREPARERS AND RELATED TRADES WORKERS**
- 722 BLACKSMITHS, TOOLMAKERS AND RELATED TRADES WORKERS**
- 723 MACHINERY MECHANICS AND FITTERS**
- 724 ELECTRICAL AND ELECTRONIC EQUIPMENT MECHANICS AND FITTERS**

### **721 METAL MOULDERS. WELDERS. SHEET METAL WORKERS. STRUCTURAL METAL PREPARERS AND RELATED TRADES WORKERS**

Metal moulders, welders, sheet metal workers, structural metal preparers and related trades workers make moulds and cores for casting metal, weld and cut metal parts, make, install and repair articles of sheet metal, install, erect, maintain and repair heavy metal structures, tackle, cable-cars and related equipment, or carry out similar work under water.

#### **7211 METAL MOULDERS AND COREMAKERS**

Metal moulders and coremakers make moulds and cores for casting metal.

**Tasks include:**

- \* making moulds by hand or by using auxiliary machines on a bench for small metal castings, or on the foundry floor or in a pit for large castings;
- \* making cores for use in metal moulds;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 72111 Moulder, metal*
- 72112 Coremaker, metal*

#### **7212 WELDERS AND FLAME CUTTERS**

Welders and flame cutters weld and cut metal parts using gas flame, or an electric arc and other sources of heat to melt and cut, or to melt and fuse metal.

**Tasks include:**

- \* welding metal parts using gas flame, or an electric arc, thermite compound or other methods;
- \* operating resistance-welding machines;
- \* using blowtorch to make and repair lead linings, 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;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

72121 *Welder*  
 72122 *Flame cutter*  
 72123 *Brazier*  
 72124 *Burner, lead*  
 72125 *Solderer*

**7213 SHEET METAL WORKERS**

Sheet metal workers make, install and repair articles and parts of articles of sheet metal such as stainless steel, copper, tin, brass, aluminium, zinc or galvanised iron.

**Tasks include:**

- \* 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;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

72131 *Sheet metal worker*  
 72132 *Coppersmith*  
 72133 *Boilersmith*  
 72134 *Tinsmith*  
 72135 *Panel beater, vehicle*  
 72136 *Marker, sheet metal*

**7214 STRUCTURAL METAL PREPARERS AND ERECTORS**

Structural metal preparers and erectors cut, shape, assemble and erect heavy metal girders and plates to form structures and frameworks.

**Tasks include:**

- \* marking metal members as a guide when drilling, cutting and shaping them for use in buildings, ships and other structures;
- \* drilling, cutting and shaping structural steel in a workshop;
- \* erecting steel members and heavy plates 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;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*72141 Structural steel worker, workshop*

*72142 Erector, constructional steel*

*72143 Plater, ship*

*72144 Riveter*

*72145 Marker, structural metal*

*72146 Shipwright, metal*

*72147 Erector, structural metal*

*72148 Preparer, structural metal*

**7215 RIGGERS AND CABLE SPLICERS**

Riggers and cable splicers erect tackle for lifting and hauling, or install and maintain cables, ropes and wires on construction sites, oil- and gas-well drilling sites, or in ships, aircraft, and other places.

**Tasks include:**

- \* setting up various types of cages, funicular railways, aerial cableways, moving platforms, lifting tackle and other hoisting equipment for moving passengers, workers, materials, machinery and other heavy objects in mountainous areas, around workshops, shipyards or other locations;
- \* joining, repairing and fitting attachments to wires, hemp ropes and cables;
- \* installing and repairing ropes, wires and cables on ships and aircraft;
- \* working as member of crew erecting and repairing derricks for drilling water, gas- and oil-wells and installing cables, hoisting and drilling equipment;
- \* working as member of cable crew fitting and installing wire cables in the construction of suspension bridges;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*72151 Rigger, hoisting equipment*

*72152 Rigger, hoisting equipment/construction*

*72153 Rigger, logging*

*72154 Rigger, ship*

*72155 Rigger, petroleum and gas well drilling*

*72156 Splicer, rope and cable*

*72157 Rigger, aircraft*

*72158 Rigger, railway cable*

## **7216 UNDERWATER WORKERS**

Underwater workers work under water, dressed in scuba gear or diving suit, to inspect, install, repair, and remove equipment and structures.

### **Tasks include:**

- \* working under water to lay and repair bridges, piers and harbour wall foundations;
- \* inspecting for suspected damage and making minor repairs to ships' hulls and underwater installations;
- \* reporting on condition of wrecked ships;
- \* removing underwater obstructions;
- \* drilling holes for underwater blasting;
- \* performing related tasks;
- \* supervising other workers.

### **Example of the occupations classified here:**

*72160 Underwater worker*

## **722 BLACKSMITHS, TOOLMAKERS AND RELATED TRADES WORKERS**

Blacksmiths, toolmakers and related trades workers hammer and forge bars, rods\_or ingots of iron, steel and other metals to make and repair various kinds of tools, equipment and other articles, and polish and sharpen metal surfaces.

### **7221 BLACKSMITHS, HAMMERSMITHS AND FORGING-PRESS WORKERS**

Blacksmiths, hammersmiths and forging-press workers draw wire, hammer and forge bars, rods, ingots and plates of iron, steel or other metals to make and repair various kinds of tools, metal articles, pieces of equipment, agricultural and related implements.

### **Tasks include:**

- \* heating metal in forge furnace 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 hammer equipped with open dies;
- \* operating closed die-drop hammer to forge metal articles;
- \* operating a power-press machine equipped with closed dies to forge metal articles;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

*72211 Blacksmith*  
*72212 Hammersmith*  
*72213 Drop-hammer operator*  
*72214 Forging-press operator*  
*72215 Toolsmith*

## **7222 TOOLMAKERS AND RELATED WORKERS**

Toolmakers and related workers make and repair tools, sports guns, locks, dies, patterns and other metal articles, as well as make engines or machinery components, and parts thereof, using hand and machine tools to work metal to fine tolerances.

### **Tasks include:**

- \* making, maintaining and repairing dies, jigs, gauges and fixtures, using hand tools and various kinds of machine tools;
- \* making engines or machinery components, and parts thereof;
- \* fitting and assembling parts to make and repair jigs, fixtures and gauges;
- \* repairing and modifying sports guns and other small arms;
- \* making, fitting, assembling, repairing and installing lock parts and locks;
- \* making and repairing metal patterns used in making foundry moulds;
- \* laying out lines and reference points on metal stock to guide other workers who cut, turn, mill, grind or otherwise shape metal;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

*72221 Maker, tool and die*  
*72222 Pattern-maker, metal foundry*  
*72223 Maker, jig and fixture*  
*72224 Marker, metal*  
*72225 Locksmith*  
*72226 Gunsmith*

## **7223 METAL GRINDERS, POLISHERS AND TOOL SHARPENERS**

Metal grinders, polishers and tool sharpeners grind and polish metal surfaces and sharpen tools.

### **Tasks include:**

- \* operating fixed or portable buffing and polishing machines;
- \* sharpening cutting tools and instruments using grinding wheel or mechanically operated grinding machines;
- \* repairing, adjusting and sharpening saw blades and metal teeth of cylinders in textile carding machines;
- \* grinding crank pins and journals of crankshaft accurately to uniform diameters by special grinding machine and attachments;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

*72231 Grinder, metal*  
*72232 Sharpener, cutting instruments*  
*72233 Sharpener, machine tools*  
*72234 Repairer, saw*

72235 *Grinder, textile card*  
72236 *Grinder, crankshaft*  
72337 *Polisher, metal*  
72338 *Finisher, metal*

## **723    MACHINERY MECHANICS AND FITTERS**

Machinery mechanics and fitters fit, install, service and repair engines, vehicles, agricultural or industrial machinery, and mechanical equipment.

### **7230    MACHINERY MECHANICS AND FITTERS**

Machinery mechanics and fitters fit, install, service and repair vehicle or aircraft engines, vehicles and agricultural or industrial machinery, and mechanical equipment.

#### **Tasks include:**

- \* fitting, examining, testing and servicing vehicle or aircraft engines, agricultural or industrial machinery, and mechanical equipment;
- \* replacing engine 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;
- \* oiling and greasing stationary engines, machinery or vehicles;
- \* inspecting and testing new machinery and mechanical equipment for conformity with standards and specifications;
- \* performing related tasks;
- \* supervising other workers.

#### **Examples of the occupations classified here:**

72301 *Mechanic, machinery*  
72302 *Fitter, machinery*  
72303 *Mechanic, office machinery*  
72304 *Mechanic, earth-moving equipment, constructional and agricultural machinery*  
72305 *Mechanic, mining machinery*  
72306 *Mechanic, marine engine*  
72307 *Mechanic, motor vehicle*  
72308 *Mechanic, aircraft engine*

## **724    ELECTRICAL AND ELECTRONIC EQUIPMENT MECHANICS AND FITTERS**

Electrical and electronic equipment mechanics and fitters fit, adjust, install and repair electrical motors, generators, household appliances, computer hardware, sound and image recording and telecommunications systems, install, service and repair electrical wiring systems in homes, industrial plants and other establishments, ships, motor vehicles and aircraft, and install, construct and repair electrical power transmission cables, telephone and telegraph lines and related equipment.

## **7241 ELECTRICAL MECHANICS AND FITTERS**

Electrical mechanics and fitters fit, adjust, install, service and repair electrical wiring systems, electrical machinery and other electrical apparatus and equipment in buildings, factories, workshops or other places.

### **Tasks include:**

- \* installing, maintaining and repairing electrical wiring systems and related equipment in various buildings such as schools, hospitals, commercial establishments, residential buildings and other structures;
- \* 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, or electrical apparatus in aircraft, ships and vehicles;
- \* installing, maintaining and repairing electrical equipment in theatres and radio or television studios;
- \* inspecting and testing manufactured electrical products;
- \* planning and carrying out preventive and scheduled maintenance of electrical installation;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

- 72411 Fitter, electrical*
- 72412 Fitter, electrical/elevator and related equipment*
- 72413 Electrician, building*
- 72414 Electrician, ship*
- 72415 Electrician, vehicle*
- 72416 Electrician, aircraft*
- 72417 Electrician, stage and studio*
- 72418 Electrical repairman, household appliance*

## **7242 ELECTRONICS FITTERS, MECHANICS AND SERVICERS**

Electronics fitters, mechanics and servicers fit, adjust, install, service and repair computer hardware, sound and image recording and transmitting telecommunications equipment, audio and video recorders and other electronic equipment.

### **Tasks include:**

- \* fitting and adjusting computer hardware, sound and image recorders and transmitters, radar equipment, electronic components of musical instruments, medical or industrial equipment and signalling systems;
- \* inspecting and testing manufactured electronic products;
- \* examining radio or television equipment, tape recorders, video cassette recorders, and other audio-visual equipment, replacing defective parts and making adjustments and repairs;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 72421 *Fitter/repairer, electronics*
- 72422 *Fitter, electronics/radio, television, video and radar equipment*
- 72423 *Fitter, electronics/signalling system*
- 74224 *Fitter, electronics/medical equipment*
- 74225 *Fitter, electronics/computer and related electronic equipment*
- 74226 *Fitter, electronics/industrial equipment*
- 74227 *Fitter, electronics/meteorological equipment*

**7243 TELEGRAPH AND TELEPHONE INSTALLERS AND SERVICERS**

Telegraph and telephone installers and servicers install, service and repair telephone and telegraph equipment in homes, business or telephone exchanges.

**Tasks include:**

- \* installing, servicing and repairing telecommunications equipment such as telephones, switchboard telegraph and data transmission equipment;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 72437 *Installer, telephone and telegraph*
- 72432 *Mechanic, telephone and telegraph*

**7244 ELECTRICAL LINE INSTALLERS, REPAIRERS AND CABLE JOINTERS**

Electrical line installers, repairers and cable jointers install and repair power, telephone, telegraph and television lines and cables.

**Tasks include:**

- \* installing and repairing overhead and underground electrical power and electrical traction lines;
- \* installing and repairing overhead and underground telephone and telegraph lines;
- \* making joints in overhead and underground cables;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 0 *Line worker, electrical power*
- 1 *Cable line worker, telephone/telegraph/television*
- 2 *Jointer, cable/electric*
- 3 *Layer, underground cable*

**73 PRECISION, PRINTING AND RELATED TRADES WORKERS**

Precision, printing and related trades workers make and repair precision instruments, musical instruments, various articles such as jewellery, precious metalware, ceramics, porcelain ware and glassware or they perform printing or book-binding tasks.

**This sub-major group consists of the following minor groups:**

- 730 PRECISION WORKERS IN METAL AND RELATED MATERIALS**
- 731 POTTERS, GLASS MAKERS AND RELATED TRADES WORKERS**
- 732 PRINTING AND RELATED TRADES WORKERS**

### **731 PRECISION WORKERS IN METAL AND RELATED MATERIALS**

Precision workers in metal and related materials make and repair precision instruments, musical instruments, jewellery and other articles of precious metals.

#### **7311 PRECISION INSTRUMENT MAKERS AND REPAIRERS**

Precision instrument makers and repairers make, repair and calibrate mechanical watches, clocks, nautical, meteorological, optical, surgical, dental, orthopaedic and other precision instruments and equipment.

**Tasks include:**

- \* making, adjusting and repairing mechanical watches and clocks;
- \* making, adjusting and repairing nautical and meteorological instruments and equipment;
- \* making, adjusting and repairing optical instruments;
- \* making, adjusting and repairing surgical instruments and other medical equipment;
- \* making and repairing medical, orthopaedic and dental appliances and prostheses;
- \* calibrating instruments using standard weights and measures and using hand tools to adjust and align parts and small balancing weights;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 73111 Maker and repairer, instrument/precision*
- 73112 Maker and repairer, dental prosthesis*
- 73114 Maker and repairer, orthopaedic appliance*
- 73115 Maker and repairer, watch and clock*
- 73116 Maker and repairer, instrument/optical*
- 73117 Maker and repairer, balance*
- 73118 Maker, instrument/meteorological*
- 73119 Maker, instrument/nautical*

#### **7312 MUSICAL INSTRUMENT MAKERS AND TUNERS**

Musical instrument makers and tuners make, repair and tune a variety of musical instruments using hand or power tools.

**Tasks include:**

- \* making and repairing accordions and stringed and wind instruments;
- \* building and repairing organs and making parts for such organs;
- \* making instrumental parts of pianos and assembling and repairing such pianos;
- \* tuning pianos and other keyboard instruments;

- \* making and repairing other musical instruments;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*73121 Tuner, musical instrument*  
*73122 Maker, stringed-musical instrument*  
*73123 Maker, drum*  
*73124 Maker, wood-wind musical instrument*  
*73125 Maker, metal-wind musical instrument*

**7313 JEWELLERY AND PRECIOUS-METAL WORKERS**

Jewellery and precious-metal workers make and repair jewellery and precious metalware, cut and set gems and engrave designs on jewellery and precious metal articles.

**Tasks include:**

- \* casting jewellery and other non-ferrous metal articles by hand;
- \* making complete jewellery articles such as rings, brooches and bracelets;
- \* cutting and polishing gems and setting them in jewellery articles;
- \* making, remodelling and repairing precious metalware;
- \* rolling and beating precious metals;
- \* engraving letters and designs on jewellery and precious metalware;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*73131 Goldsmith*  
*73132 Repairer, jewellery*  
*73133 Slicer, gem*  
*73134 Setter, gem*  
*73135 Roller, precious metal*  
*73136 Engraver, jewellery*  
*73137 Polisher, gem*  
*73138 Enameller, jewellery*

**732 POTTERS. GLASS MAKERS AND RELATED TRADES WORKERS**

Potters, glass-makers and related trades workers make bricks, tiles, pottery, porcelain ware and glassware, engrave and etch designs on glass articles, and paint or decorate glass, ceramics and related articles and signs.

**7321 POTTERS AND RELATED WORKERS**

Potters and related workers make pottery, porcelain ware, bricks and tiles.

**Tasks include:**

- \* making articles of pottery and porcelain;
- \* making clay or plaster-of-Paris moulds;

- \* forming articles on potter's wheel with hands, or using interior or exterior moulding shapes and shaping tools;
- \* forming articles by casting semi-liquid clay in plaster-of-Paris moulds;
- \* forming bricks and tiles into special shapes by hand;
- \* making articles by pressing plastic clay into moulds by hand;
- \* operating screw-press or hydraulic press to make products from clay dust;
- \* operating a machine which extrudes moist clay for further processing;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 73211 Potter*
- 73212 Moulder/presser, brick and tile*
- 73213 Modeller, pottery and porcelain*
- 73214 Caster, pottery and porcelain*
- 73215 Thrower, pottery and porcelain*

**7322 GLASS MAKERS, CUTTERS, GRINDERS AND FINISHERS**

Glass makers, cutters, grinders and finishers blow, mould, press and roll shapes from molten glass and cut, grind and polish glass.

**Tasks include:**

- \* shaping molten glass by means of blowpipe, hand moulding, heating and bending;
- \* heating, moulding and pressing optical glass to make lens blanks;
- \* grinding and polishing lens blanks;
- \* grinding and bevelling edges of glass;
- \* cutting sheet glass with hand tools and sawing prisms and other shapes from optical glass blocks;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 73221 Blower, glass*
- 73222 Bender, glass*
- 73223 Cutter, optical glass*
- 73224 Cutter, glass*
- 73225 Polisher, glass*
- 73226 Grinder, glass*
- 73227 Moulder, glass lens*
- 73228 Finisher, glass*

## **7323 GLASS ENGRAVERS AND ETCHERS**

Glass engravers and etchers engrave and etch designs on glass articles.

### **Tasks include:**

- \* engraving monograms and ornamental designs on glassware;
- \* etching decorative designs, calibration markings and other figures on glass articles;
- \* cutting designs on glass articles with sandblasting equipment;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

*73231 Engraver, glass*

*73232 Etcher, glass*

*73233 Sandblaster, glass*

## **733 PRINTING AND RELATED TRADES WORKERS**

Printing and related trades workers set and arrange printing type or copy by hand or by electronic key-boarding or other machines, make printing plates from set-up type, engrave lithographic stones, printing plates and rollers, make and print with silk-screens, print on paper and other materials, or bind and finish books.

### **7331 COMPOSITORS, TYPESETTERS AND RELATED WORKERS**

Compositors, typesetters and related workers set and arrange printing type by hand, machine or computer.

#### **Tasks include:**

- \* setting type by hand and printing copies with simple machines;
- \* operating linotype, monotype and typesetting machines;
- \* arranging set-up of type and spacing material and illustration blocks to make pages;
- \* arranging pages in sequence for printing;
- \* operating electronic key-boarding machines which reproduce letters on film or sensitised paper for eventual reproduction in printing;
- \* arranging photo-composed type film for reproduction on printing plates;
- \* performing word processing and typesetting works;
- \* performing related tasks;
- \* supervising other workers.

#### **Examples of the occupations classified here:**

*73311 Compositor*

*73312 Printer*

*73313 Typesetter*

*73314 Operator, desktop publishing equipment*

*73315 Maker, braille plate*

### **7332 STEREOTYPERS AND ELECTROTYPERS**

Stereotypers and electrotypers make printing plates from set-up type by stereotyping and electroplating processes.

**Tasks include:**

- \* making moulds of set-up type with papier mache, wax or other materials;
- \* making printing plates by casting metal in moulds of papier mache or other material bearing impression of type, or by putting lead alloy backing on copper shell made by electroplating moulds to reproduce type;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*73321 Stereotyper*

*73322 Electrotyper*

### **7333 BOOKBINDERS AND RELATED WORKERS**

Bookbinders and related workers bind books and other publications by hand or machine and perform book finishing operation.

**Tasks include:**

- \* binding books and periodicals by hand;
- \* setting and operating bookbinding machines;
- \* embossing designs or titles on books by hand or machine;
- \* mounting maps and charts;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*73331 Bookbinder*

*73332 Embosser, book*

### **7334 PRINTING AND PHOTO ENGRAVERS AND ETCHERS**

Printing and photo engravers and etchers engrave lithographic stones and printing plates, rollers, dies and blocks by various processes, develop and process photographic film and make prints.

**Tasks include:**

- \* cutting designs through film applied to surface of lithographic stones;
- \* engraving steel and copper plates, rollers, dies or wood, rubber and linoleum blocks by hand;

- \* engraving metal plates and rollers by machine;
- \* transferring designs from lithographic stone to metal plates;
- \* etching metal plates or rollers with acid and retouching;
- \* performing all or several tasks in preparing printing plates by photogravure process;
- \* processing black and white or colour film and plates to obtain negatives or transparent positives;
- \* printing black and white or colour photographs;
- \* developing x-ray films;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 73341 Engraver, printing/metal plate*
- 73342 Etcher, printing/metal plate*
- 73343 Engraver, printing/lithographic stone*
- 73344 Photo-engraver*
- 73345 Developer, film/colour and black and white*
- 73346 Developer, film/x-ray*

**7335 SILK-SCREEN, BLOCK AND TEXTILE PRINTERS**

Silk-screen, block and textile printers cut stencils for use in silk-screen printing and print on paper, metal, textiles and other materials with silk-screens, blocks of rubber, wood or other materials, or engraved printing rollers.

**Tasks include:**

- \* cutting stencils for silk-screen printing;
- \* printing on paper, metal, textiles and other materials by silk-screen process;
- \* printing designs and patterns on cloth or wallpaper with engraved blocks or machines equipped with engraved rollers;
- \* reproducing copies of textile designs by tracing them onto transparent materials;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 73351 Cutter, stencil/silk screen*
- 73352 Printer, silk screen*
- 73353 Printer, textile*
- 73354 Printer, block*
- 73355 Press-operator, embossing*
- 73356 Tracer, textile design*

## **74 FOOD PROCESSING, WOODWORKING, TEXTILE, LEATHER AND RELATED TRADES WORKERS**

Food processing, woodworking, textile, leather and related trades workers treat and process agricultural and fisheries raw materials into food and other products, and produce and repair goods made of wood, textiles, leather or other materials.

**This sub-major group consists of the following minor groups:**

- 741 FOOD PROCESSING AND RELATED TRADES WORKERS**
- 742 WOOD TREATERS, CABINET MAKERS AND RELATED TRADES WORKERS**
- 743 TEXTILE, GARMENT AND RELATED TRADES WORKERS**
- 744 PELT, LEATHER AND SHOEMAKING TRADES WORKERS**

### **741 FOOD PROCESSING AND RELATED TRADES WORKERS**

Food processing and related trades workers slaughter animals, kill fish, treat and prepare them and related food items for human and animal consumption, make various kinds of bread, cakes and other flour products, process and preserve fruits, vegetables and related foods, taste and grade various food products and beverages, or prepare tobacco and make tobacco products.

#### **7411 MEAT AND FISH PREPARERS**

Meat and fish preparers slaughter animals, kill fish, clean, cut and dress meat and fish and prepare related food items or preserve meat, fish and other foods and food products by drying, salting or smoking.

##### **Tasks include:**

- \* slaughtering animals or killing fish;
- \* flaying and trimming carcasses;
- \* cutting and dressing meat and fish for sale or further processing;
- \* preparing ingredients and making sausages and similar products using simple chopping, mixing and shaping machines;
- \* curing meat, fish and other foods;
- \* 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;
- \* performing related tasks;
- \* supervising other workers.

##### **Examples of the occupations classified here:**

- 74111 Slaughterer**
- 74112 Butcher**
- 74113 Fishmonger**
- 74114 Curer, meat/fish**
- 74115 Salter, meat/fish**
- 74116 Maker, sausage**

## **7412 BAKERS, PASTRY COOKS AND CONFECTIONERY MAKERS**

Bakers, pastry cooks and confectionery makers make various kinds of bread, buns, cakes and other flour products, as well as handmade chocolate and sugar confectionery.

### **Tasks include:**

- \* making bread, buns, cakes, biscuits, pastries, pies and other flour products;
- \* making handmade confectionery from mixtures of sugar, chocolate and other ingredients with the help of tools and some machines;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

*74121 Baker*  
*74122 Baker, bread*  
*74123 Baker, pastry*  
*74124 Maker, confectionery*  
*74125 Maker, chocolate*  
*74126 Maker, yeast*  
*74127 Maker, noodle*  
*74128 Maker, chewing-gum*

## **7413 FRUIT, VEGETABLE AND RELATED PRESERVERS**

Fruit, vegetable and related preservers process or preserve fruits, nuts and related foods in various ways including cooking, drying, salting, or juice or oil extraction.

### **Tasks include:**

- \* extracting juices from various fruits;
- \* extracting oils from oil-bearing seeds, nuts or fruits;
- \* cooking, salting or drying fruits, vegetables and related foods;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

*74131 Preserver, fruit*  
*74132 Preserver, vegetable*  
*74133 Maker, fruit juice*  
*74134 Maker, vegetable juice*  
*74135 Expeller, oil*

## **7414 FOOD AND BEVERAGE TASTERS AND GRADERS**

Food and beverage tasters and graders inspect, taste and grade various types of agricultural products, food and beverages and liquor.

### **Tasks include:**

- \* inspecting, testing and tasting agricultural products, food and beverages and liquor at various stages of processing to determine quality and grade into appropriate class;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

74141 *Grader/taster, tea*  
74142 *Grader/taster, coffee*  
74143 *Grader/taster, food*  
74144 *Grader/taster, liquor*  
74145 *Grader, meat*  
74146 *Grader, fruit/vegetable*  
74147 *Taster, juice*  
74148 *Grader, oil*

**7415 TOBACCO PREPARERS AND TOBACCO PRODUCTS MAKERS**

Tobacco preparers and tobacco products makers prepare tobacco leaves and make various tobacco products.

**Tasks include:**

- \* 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 container which moistens tobacco for further processing;
- \* removing midribs and stalks from tobacco leaves and shredding tobacco;
- \* making cigars, cigarettes and other tobacco products by hand or using simple machines;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

74151 *Grader, tobacco*  
74152 *Maker, cigar*  
74153 *Maker, cigarette*  
74154 *Quality checker, cigarette*

**742 WOOD TREATERS, CABINET MAKERS AND RELATED TRADES WORKERS**

Wood treaters, cabinet makers and related trades workers season and preserve wood, make and repair wooden furniture, wooden fittings, patterns and model, wicker furniture and related articles, and decorate and repair wooden articles and wooden parts of goods.

**7421 WOOD TREATERS**

Wood treaters season and preserve wood.

**Tasks include:**

- \* seasoning wood by air-drying in sunlight;
- \* treating wood with chemicals to protect it against decay or parasites manually;
- \* grading wood or veneer according to size and quality;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*74211 Treater, wood*  
*74212 Seasoner, wood*  
*74213 Grader, wood*  
*74124 Grader, veneer*

**7422 CABINET MAKERS AND RELATED WORKERS**

Cabinet makers and related workers make, decorate and repair wooden furniture, wheels or other wooden parts of vehicles, wooden fittings, patterns, models and other items such as pipes, shoes, or sports racquets and sticks.

**Tasks include:**

- \* making and repairing wooden articles such as cabinets and other furniture, using woodworking machines and hand tools;
- \* making and repairing wooden vehicles, wheels or other wooden parts of vehicles;
- \* making and repairing wooden articles such as patterns, scale models and mock-ups, casks, tobacco pipes, picture frames, wooden toys, wooden clogs, shoes or sports racquets or sticks;
- \* decorating furniture and fixtures by inlaying wood, applying veneer and carving designs;
- \* finishing surfaces of wooden articles or furniture;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*74221 Maker, cabinet/wooden*  
*74222 Builder, bullock cart*  
*74223 Maker, furniture/wooden*  
*74224 Maker, coffin*  
*74225 Maker, clog*  
*74226 Maker, model/wooden*  
*74227 Veneer applier*  
*74228 Maker, picture frame*

**7423 BASKETRY WEAVERS, BRUSH MAKERS AND RELATED WORKERS NOT ELSEWHERE CLASSIFIED**

Basketry weavers, brush makers and related workers not elsewhere classified make wicker furniture, brushes and brooms and weave baskets and mats.

**Tasks include:**

- \* making wicker furniture from peeled and softened rattan, reeds, rushes, willow branches and similar materials;
- \* making various kinds of baskets by interlacing rattan, reeds, rushes or similar materials;
- \* selecting and preparing brush materials such as bristles, nylon, fibres and wire, and setting them in brush base;

- \* selecting and preparing materials such as broom corn, bass and whisker fibre, and fastening them to broom handles;
- \* making mats from palm or coconut tree leaves and grass materials;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*74231 Maker, basket*  
*74232 Maker, brush*  
*74233 Weaver, mat*  
*74234 Maker, broom*  
*74235 Maker, furniture/rattan*

**743 TEXTILE. GARMENT AND RELATED TRADES WORKERS**

Textile, garment and related trades workers prepare natural and synthetic textile fibres, threads and yarns, make and repair garments and other textile articles, make patterns and mark and cut textile, leather and other materials in the manufacture of garments, gloves and miscellaneous products, or upholster furniture and interior of vehicles, or sew textiles and similar materials.

**7431 FIBRE PREPARERS**

Fibre preparers prepare cotton, hemp and other natural textile fibres for spinning and winding.

**Tasks include:**

- \* grading and classifying natural textile fibres;
- \* washing wool fibres;
- \* cleaning and fluffing textile fibres;
- \* forming fibres into sliver, combing them, combining sliver into sliver laps or forming sliver into rove;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*74311 Grader, fibre*  
*74312 Carder, fibre*  
*74313 Drawer, fibre*  
*74314 Rover, fibre*  
*74315 Comber, fibre*  
*74316 Picker, fibre/textiles*

**7432 TAILORS, DRESSMAKERS AND HATMAKERS**

Tailors, dressmakers and hatmakers make suits, dresses and other garments from textile fabrics, leather or any other material, carry out alterations and repairs, or make hats, or participate in the manufacture of ready-to-wear garments.

**Tasks include:**

- \* making overcoats, suits, skirts, shirts, blouses, lingerie, corsetry and similar garments according to customers' requirements;
- \* participating in the manufacture of ready-to-wear clothing;
- \* making various kinds of hats and caps;
- \* altering, restyling and repairing garments;
- \* making and caring for costumes used in theatrical, television and motion picture productions;
- \* making wig according to specification, fastening strands of hair to cloth base;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 74321 Tailor/dressmaker*
- 74322 Hat/cap-maker/milliner*
- 74323 Maker, wig*

**7433 TEXTILE, LEATHER AND RELATED PATTERN-MAKERS AND CUTTERS**

Textile, leather and related pattern-makers and cutters make patterns and mark and cut textile, leather and other materials in the manufacture of garments, gloves and miscellaneous products.

**Tasks include:**

- \* drawing and cutting out patterns for making suits, dresses, shirts, blouses, gloves, hats and caps and other garments;
- \* making outlines of patterns on cloth, light leathers or other materials to guide cutting;
- \* cutting material according to pattern outline for making up garments, gloves and related items;
- \* performing pattern-making, marking and cutting tasks in the manufacture of other products such as soft furnishings, umbrellas and canvas goods;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 74331 Pattern-maker, garment*
- 74332 Pattern-maker, hat and cap*
- 74333 Marker, garment*
- 74334 Cutter, garment*
- 74335 Cutter, gloves*
- 74336 Pattern-maker, sails*

**7434 UPHOLSTERERS AND RELATED WORKERS**

Upholsterers and related workers upholster furniture, make mattresses, or make and install interior decorations of textile, leather and similar materials.

**Tasks include:**

- \* installing, arranging and securing springs, padding and covering material to furniture frames;
- \* fitting and installing covers and cushioning for seats and other furnishings on vehicles such as motor cars, buses, railways coaches and aircraft;
- \* making mattresses;
- \* fitting and installing soft furnishings and interior decorations of textiles, leather and similar materials;
- \* repairing upholstered parts of worn furniture, mattresses and related products;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 74341 Upholsterer, furniture*
- 74342 Upholsterer, vehicle*
- 74343 Maker, mattress*
- 74344 Maker, cushion*
- 74345 Maker, bedding*
- 74346 Maker, quilt*
- 74347 Upholsterer, aircraft*
- 74348 Upholsterer, railway carriage*

**7439 TEXTILE, GARMENT AND RELATED TRADES WORKERS NOT ELSEWHERE CLASSIFIED**

This unit group covers textiles, garment and related trades workers not elsewhere classified in Minor Group 743: Textiles, Garment and Related Trades Workers, including those who are engaged in various sewing tasks, embroidering works and making umbrellas, fabric bags and sacks, artificial flowers, dolls and stuffed-toys and related items.

**Tasks include:**

- \* performing various sewing tasks in making, altering and repairing articles of textile leather and other materials;
- \* embroidering decorative designs on garments or materials;
- \* weaving plain or figured cloth, tapestry, lace, carpet or other fabrics on hand looms;
- \* knitting garments and other articles by hand;
- \* crocheting or making braid by hand;
- \* making nets by hand;
- \* cutting out and assembling materials such as fabric, paper or plastic to make artificial flowers;
- \* making and repairing dolls or stuffed-toys;
- \* manufacturing and repairing fabric bags and sacks;
- \* assembling complete umbrella by fixing various component parts such as collapsible metal frame, springs and umbrella cloth to stick;

- \* sewing sails, tents, awnings and similar articles;
- \* repairing faults or defects in woven cloth or carpet by hand using needle and thread;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

74391 *Seamstress*  
 74392 *Carpet mender*  
 74393 *Embroiderer, hand*  
 74394 *Maker, artificial flower*  
 74395 *Maker, doll and stuffed-toy*  
 74396 *Maker, umbrella*  
 74397 *Maker, sack*  
 74398 *Maker, sail, tent and awning*

**744 PELT, LEATHER AND SHOEMAKING TRADES WORKERS**

Pelt, leather and shoemaking trades workers make leather from hides and skins, make and repair footwear and other articles made of natural or synthetic leather with the exception of garments, hats and gloves.

**7441 PELT DRESSERS, TANNERS AND FELLMONGERS**

Pelt dressers, tanners and fellmongers prepare hides and skins for making leather products.

**Tasks include:**

- \* sorting and grading pelts, hides and skins;
- \* removing flesh and fat from pelts before curing;
- \* removing flesh and hair from hides;
- \* removing long coarse hair from pelts and trimming underlying hair to even length;
- \* operating machine to split hides edgeways;
- \* treating hides to convert them into leather;
- \* applying dyes to fur pelts;
- \* dressing and applying dyes and stains to leather;
- \* stretching and smoothing dressed pelts;
- \* performing related tasks;
- \* supervising other workers.

**Example of the occupations classified here:**

74410 *Pelt dresser, tanner and fellmonger*

## **7442 SHOEMAKERS AND RELATED WORKERS**

Shoemakers and related workers make and repair standard or special footwear and, except for leather garments, hats and gloves, make natural or synthetic leather articles such as luggage, handbags, and belts, or participate in the manufacture of shoes and related goods.

### **Tasks include:**

- \* making patterns to guide the cutting of shoe parts;
- \* cutting out, preparing and fitting together shoe parts;
- \* sewing shoe parts together;
- \* making standard or orthopaedic footwear to individual requirements;
- \* making other special types of footwear to order;
- \* examining and finishing footwear;
- \* repairing footwear;
- \* making and repairing articles such as saddles and harnesses for animals, luggage, handbags, wallets, belts, brief-cases, leather bags and other accessories;
- \* cutting out, shaping and padding parts for making leather articles;
- \* sewing and stitching leather parts by hand or machine;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

- 74421 Shoemaker*
- 74422 Maker, footwear/orthopaedic*
- 74423 Cobbler*
- 74424 Pattern-maker, footwear*
- 74425 Maker, leather goods*
- 74426 Maker, sports equipment/footwear*

## **MAJOR GROUP 8: PLANT AND MACHINE-OPERATORS AND ASSEMBLERS**

Plant and machine-operators and assemblers operate and monitor industrial and agricultural machinery and equipment, drive and operate trains, motor vehicles and mobile machinery and equipment, or assemble products from component parts according to strict specifications and procedures.

The work mainly calls for experience with and an understanding of industrial and agricultural machinery and equipment as well as an ability to cope with machine-paced operations and to adapt to technological innovations. Most occupations in this major group require skills at the second skill level.

**This major group consists of the following sub-major groups:**

- 81 STATIONARY PLANT AND RELATED OPERATORS**
- 82 MACHINE-OPERATORS AND ASSEMBLERS**
- 83 DRIVERS AND MOBILE PLANT OPERATORS**

### **81 STATIONARY PLANT AND RELATED OPERATORS**

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Stationary plant and related operators operate and monitor industrial plant for mining or for the processing of metal, minerals, glass, ceramics, wood, paper, chemicals, or water-treating, electrical-power-generating and other purposes, as well as automated or semi-automated assembling processes and industrial robots.

**This sub-major group consists of the following minor groups:**

- 811 MINING AND MINERAL PROCESSING PLANT OPERATORS**
- 812 METAL PROCESSING PLANT OPERATORS**
- 813 GLASS, CERAMICS AND RELATED PLANT OPERATORS**
- 814 WOOD PROCESSING AND PAPERMAKING PLANT OPERATORS**
- 815 CHEMICAL PROCESSING PLANT OPERATORS**
- 816 POWER GENERATING AND RELATED PLANT OPERATORS**
- 817 AUTOMATED ASSEMBLY LINE AND INDUSTRIAL ROBOT OPERATORS**

#### **811 MINING AND MINERAL PROCESSING PLANT OPERATORS**

Mining and mineral processing plant operators operate and monitor plant for cutting channels in a mine workface, for processing mineral ore and stone, or for the drilling and sinking of wells.

##### **8111 WELL DRILLERS, BORERS AND RELATED WORKERS**

Well drillers, borers and related workers erect and operate machinery which cut channels in a mine workface and perform related tasks in the sinking and operation of wells.

**Tasks include:**

- \* operating and monitoring machinery for cutting channels in a mine or quarry workface or for drilling blasting holes in mines or quarries;
- \* operating and monitoring continuous mining machines;
- \* preparing and operating derrick pipe-handling devices and slush pumps;
- \* operating rotary or percussion-drilling machinery and equipment to drill oil or gas wells;
- \* cleaning and servicing oil or gas wells and replacing pumping rods, casings and tubings;
- \* setting up and operating drilling machinery and equipment to drill wells or bores other than for oil or gas;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 81111 Machine-operator, cutting/mine*
- 81112 Machine-operator, drilling/mine*
- 81113 Machine-operator, drilling/quarry*
- 81114 Machine-operator, mining/continuous*
- 81115 Machine-operator, boring equipment/well*
- 81116 Operator, derrick/oil and gas wells*
- 81117 Operator, drilling equipment/well*
- 81118 Operator, pulling equipment/oil and gas wells*

**8112 MINERAL ORE AND STONE PROCESSING PLANT OPERATORS**

Mineral ore and stone processing plant operators operate and monitor machinery and equipment for processing mineral ore and stone.

**Tasks include:**

- \* operating and monitoring equipment which crushes and breaks lumps of minerals and stones to required size;
- \* operating and monitoring washing, separating, leaching, precipitating, filtering, extracting and combining equipment to wash mineral ores in order to remove waste material;
- \* combining mineral ores with solvents to facilitate further processing;
- \* separating metal or mineral concentrates from ore or alluvial deposits by thickening, floatation, gravity separation, filtration, or magnetic or electrostatic separation;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 81121 Machine-operator, crushing/mineral ore*
- 81122 Machine-operator, milling/minerals*
- 81123 Floatation worker, minerals*
- 81124 Machine-operator, milling/stone*
- 81125 Machine-operator, crushing/coal*
- 81126 Tender, jig*

## **812     METAL PROCESSING PLANT OPERATORS**

Metal processing plant operators operate and monitor ore smelting, metal converting and refining furnaces, metal rolling mills, metal heat treating or metal extrusion plant.

### **8121    ORE AND METAL FURNACE-OPERATORS**

Ore and metal furnace-operators operate and monitor ores smelting, metal converting and refining furnaces.

#### **Tasks include:**

- \* operating and monitoring blast furnaces to smelt ores for the production of ferrous or non-ferrous metals;
- \* operating and monitoring furnaces to convert or refine pig-iron or scrap-metal to produce steel;
- \* operating and monitoring furnaces to convert or refine non-ferrous metals;
- \* performing related tasks;
- \* supervising other workers.

#### **Examples of the occupations classified here:**

- 81211   Furnace-operator, converting/non-ferrous metal*
- 81212   Furnace-operator, refining/steel (open-hearth furnace)*
- 81213   Furnace-operator, smelting/metal (blastfurnace)*
- 81214   Furnace-operator, refining/non-ferrous metal*

### **8122    METAL MELTERS, CASTERS AND ROLLING MILL OPERATORS**

Metal melters, casters and rolling mill operators operate and monitor rolling mills to roll metal, or furnaces to melt or reheat metal, or machines to cast metal.

#### **Tasks include:**

- \* operating and monitoring furnaces to melt ferrous and non-ferrous metals for casting;
- \* operating and monitoring furnaces to reheat stock metal forms prior to forging, power-pressing, rolling and further processing;
- \* operating and monitoring rolling mills to shape hot or cold steel into shapes for further processing, or into final shapes;
- \* operating and monitoring rolling mills to reduce or form hot or cold non-ferrous metal to specified shapes, such as plate, sheet or foil;
- \* operating and monitoring rolls to form seamless tubes and pipes from billets which have been pierced longitudinally;
- \* pouring molten metal into moulds and operating and monitoring casting machines;
- \* operating continuous mills in which hot steel slabs are passed through a series of rolls (stands) to produce finished plates or sheets in one continuous operation;
- \* operating rolling mills to reduce or form hot or cold non-ferrous metal into plate, sheet, foil, wire or rod of specified dimensions;
- \* manipulating controls of rolling mills according to signals from rollers;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 81221 Furnace-operator, melting/metal*
- 81222 Machine-operator, casting/metal*
- 81223 Machine-operator, die-casting*
- 81224 Operator, rolling mill/non-ferrous metal*
- 81225 Furnace-operator, reheating/metal*
- 81226 Machine-operator, casting/centrifugal (cylindrical metal products)*
- 81227 Machine-operator, casting/continuous rod (non-ferrous metal)*
- 81228 Hot-roller, steel*

**8123 METAL HEAT TREATING PLANT OPERATORS**

Metal heat treating plant operators operate and monitor plant altering the physical properties of metal objects by heating, cooling and chemical treatment.

**Tasks include:**

- \* operating and monitoring furnaces which heat and cool metal objects to relieve internal stresses, restore ductility and refine grain structure;
- \* operating and monitoring furnaces which harden steel objects;
- \* operating and monitoring plant which imparts a hard skin and tough, ductile core to steel objects by treating them with chemicals, heating and quenching or cooling them;
- \* operating and monitoring furnaces which reheat hardened steel objects to relieve stresses and to impart toughness;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 81231 Annealer, metal*
- 81232 Furnace-operator, hardening/metal*
- 81233 Temperer, metal*
- 81234 Furnace-operator, heat-treating/metal*
- 81235 Furnace-operator, case-hardening/metal*

**8124 METAL DRAWERS AND EXTRUDERS**

Metal drawers and extruders operate and monitor machinery and equipment which draw and extrude metals to make wire, tubes and similar products.

**Tasks include:**

- \* operating and monitoring wire-drawing machines;
- \* operating and monitoring machines to draw seamless metal tubing;
- \* operating and monitoring extrusion presses to make metal rods, bars and seamless tubing;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 81241 Drawer, metal*
- 81242 Extruder, metal*
- 81243 Drawer, seamless pipe and tube*
- 81244 Machine-operator, barbed-wire*

**813 GLASS, CERAMICS AND RELATED PLANT OPERATORS**

Glass, ceramics and related plant operators operate and monitor kilns, furnaces and other machinery and equipment used in the manufacture of glass as well as ceramic products.

**8131 GLASS AND CERAMICS KILN AND RELATED MACHINE-OPERATORS**

Glass and ceramics kiln and related machine-operators operate and monitor kilns, furnaces and other machinery and equipment used in the manufacture of glass, ceramics, porcelain or bricks.

**Tasks include:**

- \* operating and monitoring glass-making furnaces;
- \* operating and monitoring glass-annealing furnaces to prevent or remove internal stresses;
- \* operating and monitoring tempering furnaces to toughen glass;
- \* operating and monitoring machines which shape glass articles by blowing or pressure-moulding;
- \* operating and monitoring machines which draw or roll molten glass to a continuous sheet of flat glass;
- \* operating and monitoring floating-glass production plant;
- \* operating and monitoring machines which polish and level plate-glass surfaces;
- \* operating and monitoring machines which make glass rods and tubes from molten glass by drawing or drawing and blowing;
- \* operating and monitoring kilns which bake pottery and porcelain ware or which fix glazing and decoration by rebaking;
- \* operating and monitoring kilns which bake bricks and tiles;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 81311 Furnace-operator, glass production*
- 81312 Furnace-operator, annealing/glass*
- 81313 Kiln-operator, brick and tile*
- 81314 Kiln-operator, pottery and porcelain*
- 81315 Temperer, glass*
- 81316 Machine-operator, blowing/glass*
- 81317 Machine-operator, engraving/glass*
- 81318 Operator, sandblasting equipment/glass*

## **8139 GLASS, CERAMICS AND RELATED PLANT OPERATORS NOT ELSEWHERE CLASSIFIED**

This unit group covers glass and ceramics plant operators not classified elsewhere in Minor Group 813: Glass, Ceramics and Related Plant Operators. For instance, here should be classified those who are engaged in operating and monitoring machinery and equipment used to mix ingredients for glass-making or for the preparation of clay, glaze and abrasives, or which extrude molten glass in order to form fibreglass filaments.

### **Tasks include:**

- \* operating and monitoring machines which mix ingredients for glass-making;
- \* operating and monitoring machines which prepare clay for the production of ceramics and bricks;
- \* operating and monitoring machines for making glaze or abrasives;
- \* operating and monitoring machines which extrude molten glass to form fibreglass filaments;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

- 81391 Mixer, glass*
- 81392 Mixer, clay*
- 81393 Maker, glaze*
- 81394 Maker, fibreglass*
- 81395 Press-operator, filtering/clay*
- 81396 Machine-operator, mixing/abrasives*
- 81397 Machine-operator, glaze production*

## **814 WOOD PROCESSING AND PAPERMAKING PLANT OPERATORS**

Wood-processing and papermaking-plant operators operate and monitor machinery and equipment which saw, cut and grind wood in preparation for further use, convert wood and their materials into pulp, and make paper from pulp.

### **8141 WOOD PROCESSING PLANT OPERATORS**

Wood processing plant operators operate and monitor machinery and equipment for sawing wood, cutting veneer and making plywood, particle board and chipboard, and otherwise prepare wood for further use.

#### **Tasks include:**

- \* operating and monitoring log in-feed and conveyor systems;
- \* operating and monitoring head saws, resaws and multiblade saws to saw logs, cants, flitches, slabs or wings and remove rough edges from sawn timber;
- \* operating and monitoring machines which cut veneer;
- \* operating and monitoring plywood core-laying machines and hot-plate plywood presses;
- \* operating steam-heated kilns to season wood;
- \* operating equipment which treat wood;

- \* operating dryer to dry freshly shaped veneer sheets;
- \* operating machines to clip continuous sheet of veneer to specified width;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*81411 Sawyer, wood*  
*81412 Cutter, veneer*  
*81413 Plywood core layer*  
*81414 Press-operator, plywood*  
*81415 Machine-operator, seasoning/wood*  
*81416 Machine-operator, treating/wood*  
*81417 Operator, veneer dryer*  
*81418 Operator, auto-clipper*

**8142 PAPER PULP PLANT OPERATORS**

Paper pulp plant operators operate and monitor machinery and equipment which convert materials such as wood, rags, esparto, straw, scrap-pulp and paper into stock for use in papermaking.

**Tasks include:**

- \* operating and monitoring chipper and grinding machines which reduce logs to pulp;
- \* operating and monitoring digesters which produce pulp from materials such as wood, rags, esparto, straw or scrap-pulp and scrap paper;
- \* operating and monitoring machines which bleach wood pulp, rags, esparto, straw or scrap-pulp and scrap paper;
- \* operating and monitoring machines which mix, beat and hydrate pulp and other ingredients to prepare stuff for making paper;
- \* cutting rags, wastepaper and straws to small pieces with cutting machine for making paper pulp;
- \* operating valves to charge raw materials into digester;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*81421 Operator, digester*  
*81422 Machine-operator, chipping*  
*81423 Operator, beater*  
*81424 Machine-operator, grinding/wood*  
*81425 Operator, bleacher*  
*81426 Cutter, paper pulp*  
*81427 Valve operator, paper pulp*  
*81428 Operator, paper-pulp plant*

## **8143 PAPERMAKING PLANT OPERATORS**

Papermaking plant operators operate and monitor machinery and equipment which make paper, paper board and sheet pulp from pulp stock.

### **Tasks include:**

- \* operating and monitoring section of papermaking machinery and equipment in which wet pulp is formed into paper or in which paper is dried, calendered, wound, slit, and rewound;
- \* operating and monitoring supercalenders used to impart gloss and finish to surface of paper;
- \* operating and monitoring machinery and equipment used to glaze or impregnate paper with coating mixture;
- \* operating machine to cut rolls of paper into required length;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

*81431 Machine-operator, papermaking*

*81432 Operator, supercalender/paper*

*81433 Machine-operator, coating*

*81434 Machine-operator, cutting/paper*

*81435 Machine-operator, cardboard production*

## **815 CHEMICAL PROCESSING PLANT OPERATORS**

Chemical processing plant operators operate and monitor machinery and equipment which process chemicals and related materials to obtain products with desirable properties.

### **8151 CRUSHING, GRINDING AND CHEMICAL MIXING MACHINERY OPERATORS**

Crushing, grinding and chemical mixing machinery operators operate and monitor machinery which crushes, grinds, mixes and blends chemicals and other materials used in chemical and related processes.

### **Tasks include:**

- \* operating and monitoring mills and crushing machines or power driven pulverising machines which reduce solid chemicals and related materials to suitable size for further processing;
- \* operating and monitoring machines in which solids or liquids used in chemical and related processes are mixed or blended;
- \* operating and monitoring machines which mix pigments, oil and chemicals to make paint;
- \* operating and monitoring machines which mix raw materials to form glue or adhesives;
- \* operating and monitoring machines which grind and mix compound for match heads and match box sides;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 81511 Machine-operator, mixing and blending/chemical and related processes*
- 81512 Operator, crusher/chemical and related processes*
- 81513 Roll-mill operator, chemical and related processes*
- 81514 Machine-operator, pulverising/chemical and related processes*
- 81515 Machine-operator, paint-mixing*
- 81516 Machine-operator, glue-mixing*
- 81517 Compounder, match/chemical and related processes* • .

**8152 CHEMICAL HEAT TREATING PLANT OPERATORS**

Chemical heat treating plant operators operate and monitor machinery and equipment which cook, roast and provide other types of heat treatment in chemical and related processes.

**Tasks include:**

- \* operating and monitoring machinery and equipment which cook materials in order to purify, mix or compound them to give them special properties or effect chemical changes in them;
- \* operating and monitoring ovens, kilns or similar equipment which heat substances to dry them, give them special properties or effect chemical changes in them;
- \* operating and monitoring driers that heat liquid or slurries to remove water or volatile liquid components;
- \* operating and monitoring furnaces or burning kilns to calcine mixtures of raw, ground stone, clay and other materials in the production of cement;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 81521 Cooker, chemical processes*
- 81522 Roaster, chemical processes*
- 81523 Operator, drier/chemical and related processes*
- 81524 Cement furnaceman*
- 81525 Kiln-operator, chemical and related processes*
- 81526 Operator, retort/chemical and related processes*
- 81527 Operator, spray-drier/chemical and related processes*
- 81528 Operator, heat-treating-plant/chemical and related processes*

**8153 CHEMICAL FILTERING AND SEPARATING EQUIPMENT OPERATORS**

Chemical filtering and separating equipment operators operate and monitor machines and equipment which filter and separate chemicals and related materials.

**Tasks include:**

- \* operating and monitoring equipment in which solutions are forced, under pressure, through a filtering unit;
- \* operating and monitoring equipment in which solutions are vacuum-drawn through filtering media fitted to a rotating drum;

- \* operating and monitoring machines which separate substances by centrifugal force;
- \* operating and monitoring equipment which removes sediment and water from crude oil;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 81531 Press-operator, filter/chemical and related materials* ' -
- 81532 Operator, centrifugal-separator/chemical and related processes*
- 81533 Rotary drum filterer*
- 81534 Operator, separator/chemical and related processes*
- 81535 Operator, treating equipment/crude oil*

**8154 CHEMICAL STILL AND REACTOR OPERATORS (EXCEPT PETROLEUM AND NATURAL GAS)**

Chemical still and reactor operators (except petroleum and natural gas) operate and monitor equipment which distils and refines chemicals, except petroleum.

**Tasks include:**

- \* operating and monitoring equipment in which crude liquid chemicals are treated to refine or separate them into their chemical constituents;
- \* operating and monitoring equipment which performs a sequence of operations in a chemical reaction process;
- \* operating and monitoring evaporation tanks, vacuum pans or similar devices to concentrate solutions and suspensions;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 81541 Operator, still/chemical processes*
- 81542 Reactor-converter (chemical processes)*
- 81543 Evaporator operator*

**8155 PETROLEUM AND NATURAL GAS REFINING PLANT OPERATORS**

Petroleum and natural gas refining plant operators operate and monitor plant which refines, distils and treats petroleum, petroleum-based products and by-products, or natural gas.

**Tasks include:**

- \* operating and monitoring plant which removes sulphur from petroleum and petroleum-based products and byproducts;
- \* operating and monitoring equipment which processes carbide and water into acetylene gas;
- \* operating and monitoring equipment to liquefy and compress chlorine gas;
- \* operating and monitoring equipment to obtain oxygen and nitrogen from air to industrial and therapeutic use;
- \* operating and monitoring plant in which pressure distillate and non-condensable gases are treated;

- \* operating filter presses to separate oil of paraffin distillate from paraffin wax;
- \* operating and monitoring pumps which circulate petroleum products or water and chemical solutions through refinery;
- \* operating and monitoring control panels in petroleum refinery;
- \* operating and monitoring stills which distil or refine petroleum products;
- \* operating and monitoring machines which blend petrol with chemicals and other additives;
- \* operating and monitoring machines which refine or otherwise treat natural gas;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 81551 Pumpman (petroleum refining)*
- 81552 Stillman (petroleum refining)*
- 81553 Controlman (petroleum refining)*
- 81554 Operator, gas plant*
- 81555 Operator, paraffin plant*
- 81556 Blender (petroleum refining)*
- 81557 Operator, treater/petroleum and natural gas refining*
- 81558 Operator, pumping-station/petroleum and natural gas*

**8159 CHEMICAL PROCESSING PLANT OPERATORS NOT ELSEWHERE CLASSIFIED**

This unit group covers chemical processing plant operators not classified elsewhere in Minor Group 815: Chemical Processing Plant Operators, including those who are engaged in operating and monitoring machinery and equipment which treat chemical solutions with bleaching reagents, produce coke or gas from coal, extrude and form natural or synthetic fibres, produce fertilisers, or extract and process radioactive materials.

**Tasks include:**

- \* operating and monitoring plant which treats chemical solutions with bleaching reagents;
- \* operating and monitoring plant which produces coke or gas from coal;
- \* operating and monitoring plant which extrudes or forms natural or synthetic polymers into synthetic fibres;
- \* operating and monitoring fertiliser plant equipment;
- \* operating and monitoring plant which separates and extracts radioactive materials from their ores or processes such materials;
- \* operating pumps or other equipment to fill cylinders or other containers with liquefied or compressed gases;
- \* operating equipment which manufactures mosquito coils;
- \* operating equipment which manufactures polyurethane foam from chemical;
- \* operating acid plant for manufacturing various types of acids such as sulphuric, hydrochloric, nitric or other acids;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 81591 Operator, liquefaction plant/gases*
- 81592 Operator, bleacher/chemicals*
- 81593 Machine-operator, mosquito coil production*
- 81594 Kiln-operator, charcoal*
- 81595 Foam maker, chemical*
- 81596 Yarn maker, synthetic*
- 81597 Operator, acid plant*
- 81598 Operator, fertiliser plant*

**816 POWER GENERATING AND RELATED PLANT OPERATORS**

Power generating and related plant operators operate and monitor machinery and equipment in an electrical power generating plant, incinerator, water treatment and related plant, and operate and maintain ships' and other types of steam-engines and boilers.

**8161 POWER GENERATING PLANT OPERATORS**

Power generating plant operators operate and monitor machinery and equipment which produce electric or other power and control its distribution.

**Tasks include:**

- \* operating and monitoring coal, oil or natural gas-fired steam-power generating plant;
- \* operating and monitoring hydroelectric-power generating stations;
- \* controlling power output and distribution of electricity from power stations;
- \* performing related tasks;
- \* supervising other workers.

**Example of the occupations classified here:**

- 81610 Operator, power generating plant*

**8162 STEAM ENGINE AND BOILER OPERATORS**

Steam engine and boiler operators operate and monitor steam engines and boilers on land and at sea.

**Tasks include:**

- \* operating and monitoring coal or oil-fired steam engines or boilers on land and at sea;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 81621 Fireperson, ship*
- 81622 Operator, boiler plant/steam*
- 81623 Fireperson, railway engine*

## **8169 INCINERATOR, WATER TREATMENT AND RELATED PLANT OPERATORS NOT ELSEWHERE CLASSIFIED**

Incinerator, water treatment and related plant operators not elsewhere classified operate and monitor various types of plant such as incinerators, water treatment plant, sewage plant, air and gas compressors, pumping stations, and refrigeration or heating and ventilation systems.

### **Tasks include:**

- \* operating and monitoring incinerator machinery and equipment which burn garbage or other waste materials;
- \* operating and monitoring machinery and equipment which purify and clarify water for human consumption or use and later disposal into natural water systems;
- \* operating and monitoring machinery and equipment which regulate the treatment and disposal of sewage and wastes;
- \* operating and monitoring air and gas compressors;
- \* operating and monitoring pumping stations for transferring liquids, gases, semi-liquids and powdered substances from one location to another;
- \* operating and monitoring refrigeration systems for cool or cold storage, or industrial processes;
- \* operating and monitoring heating and ventilation systems;
- \* operating equipment to make ice-blocks;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

- 81691 Operator, stationary engine*
- 81692 Operator, compressor*
- 81693 Operator, incinerator plant*
- 81694 Operator, pumping station*
- 81695 Operator, heating and ventilation equipment*
- 81696 Operator, refrigeration system*
- 81697 Operator, water treatment plant*
- 81698 Operator, sewage plant*

## **817 AUTOMATED ASSEMBLY LINE AND INDUSTRIAL ROBOT OPERATORS**

Automated assembly line and industrial robot operators operate and monitor automated or semi-automated assembly lines as well as industrial robots.

### **8170 AUTOMATED ASSEMBLY LINE AND INDUSTRIAL ROBOT OPERATORS**

Automated assembly line operators operate and monitor automated or semi-automated assembly lines as well as industrial robots.

#### **Tasks include:**

- \* operating and monitoring automated or semi-automated assembly lines;
- \* operating and monitoring industrial robots;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*81701 Machine-operator, automated assembly line*

*81702 Operator, robot*

## **82 MACHINE-OPERATORS AND ASSEMBLERS**

Machine-operators and assemblers operate and monitor industrial machines or assemble products from parts according to strict specifications and procedures.

**This sub-major group consists of the following minor groups:**

- 821 METAL AND MINERAL PRODUCTS MACHINE-OPERATORS**
- 822 CHEMICAL PRODUCTS MACHINE-OPERATORS**
- 823 RUBBER AND PLASTIC PRODUCTS MACHINE-OPERATORS**
- 824 WOOD PRODUCTS MACHINE-OPERATORS**
- 825 PRINTING, BINDING AND PAPER PRODUCTS MACHINE-OPERATORS**
- 826 TEXTILE PRODUCTS MACHINE-OPERATORS**
- 827 FOOD AND RELATED PRODUCTS MACHINE-OPERATORS**
- 828 ASSEMBLERS**
- 829 MACHINE-OPERATORS NOT ELSEWHERE CLASSIFIED**

### **821 METAL AND MINERAL PRODUCTS MACHINE-OPERATORS**

Metal and mineral products machine-operators operate and monitor metalworking machines or make products composed primarily of non-metallic mineral materials.

#### **8211 MACHINE-TOOL SETTER-OPERATORS**

Machine-tool setter-operators set and operate various machine tools working to fine tolerances.

**Tasks include:**

- \* setting one or more types of machine tools to produce metal articles in standardised series;
- \* operating and monitoring particular types of metalworking machines such as lathes, stamping presses, power shears, metal-bending, milling, planing, boring, drilling, grinding, honing or metal-sawing machines which may be numerically controlled or linked by an automatic-transfer machine;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*82111 Setter-operator, metalworking machine*

*82112 Setter-operator, lathe*

*82113 Setter-operator, shaping machine*

*82114 Setter-operator, boring and drilling machine*

*82115 Setter-operator, honing machine*

*82116 Setter-operator, milling machine*

*82117 Setter-operator, planing machine*

## **8212 CEMENT AND OTHER MINERAL PRODUCTS MACHINE-OPERATORS**

Cement and other mineral products machine-operators operate and monitor extrusion, moulding, mixing, grinding and cutting machines which manufacture and finish various precast concrete and stone products, or which make cast stone for building purposes.

### **Tasks include:**

- \* operating and monitoring extrusion, moulding, grinding and cutting machines which manufacture and finish various precast concrete and stone products such as flagstones, fencing posts, moulded pipe sections and trench liners, walling and partition slabs, building components, cable conduits, fume and dust extraction conduits;
- \* operating and monitoring machines which mix sand, gravel, cement and water to make concrete;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

- 82121 Machine-operator, terrazzo tile*
- 82122 Machine-operator, cast concrete products*
- 82123 Machine-operator, asbestos*
- 82124 Machine-operator, asbestos-cement product*
- 82125 Machine-operator, cast stone products*
- 82126 Machine-operator, abrasive coating*
- 82127 Machine-operator, concrete mixing*
- 82128 Machine-operator, cement products*

## **822 CHEMICAL PRODUCTS MACHINE-OPERATORS**

Chemical products machine-operators operate and monitor machines which process a variety of chemicals and other ingredients to produce pharmaceuticals, toiletries, explosives, photographic or other chemical products, or to finish, plate and coat metal articles.

## **8221 PHARMACEUTICAL AND TOILETRY PRODUCTS MACHINE-OPERATORS**

Pharmaceutical and toiletry products machine-operators operate and monitor machines which process a variety of chemicals and other ingredients used in the production of pharmaceuticals and toiletries.

### **Tasks include:**

- \* operating and monitoring machines for moulding, filtering, fermenting, heating, mixing, grinding, filling and sealing materials used in the production of pharmaceuticals, toiletries, detergents and related products;
- \* operating controls to regulate temperature, pressure, flow and speed of operation;
- \* cleaning and disinfecting equipment;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 82211** *Machine-operator, detergent production*
- 82212** *Machine-operator, pharmaceutical products*
- 82113** *Machine-operator, toiletry products*

**8222 METAL FINISHING, PLATING AND COATING MACHINE-OPERATORS**

Metal finishing, plating and coating machine-operators operate and monitor equipment which finishes, plates and coats metal articles or parts, in order to give them improved resistance to corrosion and abrasion, for decorative purposes, or to impart electrical or magnetic properties.

**Tasks include:**

- \* operating and monitoring equipment which cleans metal articles in preparation for electroplating, galvanising, enamelling 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 on metal products to provide a protective or decorative coating or to build up worn or damaged surfaces;
- \* operating and monitoring equipment to oxidise metal surfaces to decorative finish by chemical process;
- \* operating sandblasting equipment to clean and smoothen surfaces of metal parts;
- \* operating machines to semi-finish the surface of cast metal articles;
- \* operating and monitoring equipment used to impart a rust-resistant finish to metal articles by treating them with chemicals and heating them;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 82221** *Electroplater*
- 82222** *Hot-dip plater*
- 82223** *Galvaniser*
- 82224** *Machine-operator, spraying/metal*
- 82225** *Oxidiser*
- 82226** *Sandblaster, metal*
- 82227** *Casting finisher*
- 82228** *Metal cleaner*

**8223 PHOTOGRAPHIC PRODUCTS MACHINE-OPERATORS**

Photographic products machine-operators operate and monitor equipment which makes photographic film and paper, and which processes exposed photographic film and makes prints.

**Tasks include:**

- \* operating and monitoring equipment which makes photographic film and paper;
- \* operating and monitoring machines for coating and backing photographic plates;
- \* operating and monitoring equipment which processes colour and black-and-white films and plates to obtain negatives or transparent positives;

- \* operating and monitoring equipment which prints black-and-white or colour photographs or which enlarges or reduces photographs;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 82231** *Machine-operator, photograph developing(colour/black-and-white)*
- 82232** *Machine-operator, photograph enlarging*
- 82233** *Machine-operator, film processing/motion film*
- 82234** *Machine-operator, photography printing*
- 82235** *Machine-operator, photographic plate production*
- 82236** *Machine-operator, film paper production*
- 82237** *Machine-operator, photographic film production*
- 82238** *Machine-operator, photographic products*

**8229 CHEMICAL PRODUCTS MACHINE-OPERATORS NOT ELSEWHERE CLASSIFIED**

This unit group covers chemical products machine-operators not classified elsewhere in Minor Group 822: Chemical Products Machine-operators, including those who operate machines which produce chemical-based products such as linoleum, candles, halogen and chlorine gases, matches and related items as well as in the production of ammunition and explosives.

**Tasks include:**

- \* operating and monitoring machines which make linoleum, candles, halogen and chlorine gases, matches and related chemical products;
- \* operating and monitoring machines which mix, blend and otherwise process chemicals to produce explosives substances such as nitro-cellulose, gelignite and various types of propellants;
- \* operating and monitoring machines which make fuses for explosives and pyrotechnics;
- \* operating and monitoring machines which assemble and load shells, bombs, mines and similar devices;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 82291** *Machine-operator, ammunition products*
- 82292** *Machine-operator, candle production*
- 82293** *Machine-operator, explosives production*
- 82294** *Machine-operator, halogen gas production*
- 82295** *Machine-operator, linoleum production*
- 82296** *Machine-operator, match production*
- 82297** *Machine-operator, chlorine gas production*
- 82298** *Machine-operator, lead production*

**823 RUBBER AND PLASTIC PRODUCTS MACHINE-OPERATORS**

Rubber and plastic products machine-operators operate and monitor machines which knead and blend rubber and rubber compounds, and produce various components and products from natural and synthetic rubber and plastics.

## **8231 RUBBER PRODUCTS MACHINE-OPERATORS**

Rubber products machine-operators operate and monitor machines which knead and blend rubber and rubber compounds, and produce various components and products, from natural and synthetic rubber, such as moulded footwear, domestic articles, insulating materials, industrial accessories, or tyres for bicycles, automobiles, tractors, aircraft and other vehicles.

### **Tasks include:**

- \* 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 rubberised fabric by a rolling process;
- \* operating and monitoring machines which extrude compounded rubber or shape vulcanised rubber by moulding;
- \* operating and monitoring machines which build up tyres on a form, vulcanise tyres and mould or rebuild used tyres;
- \* operating and monitoring machines which manufacture rubber products such as hoses, air-bags, rubber foam for cushions and mattresses, rubber stamps, etc;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

- 82311 Machine-operator, milling/rubber*
- 82312 Machine-operator, extruding/rubber*
- 82313 Press-operator, moulding/rubber*
- 82314 Machine-operator, calender/rubber*
- 82315 Machine-operator, cutting/rubber*
- 82316 Machine-operator, tyre production*
- 82317 Tyre retreader*
- 82318 Machine-operator, rubber products*

## **8232 PLASTIC PRODUCTS MACHINE-OPERATORS**

Plastic products machine-operators operate and monitor machines which knead and blend compounds to obtain plastic materials and which make various plastic components and articles.

### **Tasks include:**

- \* operating and monitoring machines which knead, mix and blend compounds to obtain plastic materials;
- \* operating and monitoring machines which shape plastic materials by moulding, extrusion, cutting and other means;
- \* operating and monitoring machines which laminate plastics and plastic-impregnated materials;
- \* operating and monitoring machines which compress plastics powder into pellets;
- \* operating and monitoring machines which emboss designs on plastic sheets;
- \* operating and monitoring machines which make plastic products such as domestic articles, moulded footwear, toys and industrial accessories;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 82321 *Machine-operator, mixing/plastics*
- 82322 *Press-operator, laminating/plastics*
- 82323 *Machine-operator, extruding/plastics*
- 82324 *Machine-operator, injection moulding/plastics*
- 82325 *Machine-operator, compression moulding/plastics*
- 82326 *Machine-operator, vacuum plastic-forming*
- 82327 *Machine-operator, tableting/plastics*
- 82328 *Machine-operator, embossing/plastics*

**824 WOOD PRODUCTS MACHINE-OPERATORS**

Wood products machine-operators operate and monitor woodworking machines which perform repetitive works.

**8240 WOOD PRODUCTS MACHINE-OPERATORS**

Wood products machine-operators operate and monitor woodworking machines which perform repetitive works such as sawing, boring, shaping, planing, turning or carving wood.

**Tasks include:**

- \* setting and operating one or more previously set up machines for sawing, shaping, boring, planing, turning or carving wood;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 82401 *Machinist, wood*
- 82402 *Sawyer, precision wood*
- 82403 *Turner, wood (machine)*
- 82404 *Machine-operator, wood-wool*
- 82405 *Operator, sunder*
- 82406 *Machine-operator, carving/wood*
- 82407 *Machine-operator, furniture production*
- 82408 *Machine-operator, wood products*

**825 PRINTING, BINDING AND PAPER PRODUCTS MACHINE-OPERATORS**

Printing, binding and paper products machine-operators operate and monitor various types of printing and copying machines, or machines which bind and emboss books or which produce various articles from paper, paperboard and similar materials.

**8251 PRINTING MACHINE-OPERATORS**

Printing machine-operators operate and monitor various types of machines which print on paper, tinplate and other materials.

**Tasks include:**

- \* operating and monitoring cylinder, platen, rotary, offset, direct lithographic, rotogravure and wallpaper printing presses;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 82511 Press-operator, printing/cylinder*
- 82512 Press-operator, printing/offset*
- 82513 Press operator, printing/rotary*
- 82514 Press operator, printing/rotogravure*
- 82515 Press-operator, printing/direct lithographic*
- 82516 Press-operator, printing/wallpaper*

**8252 BOOKBINDING MACHINE-OPERATORS**

Bookbinding machine-operators operate machines which bind and emboss books and other publications.

**Tasks include:**

- \* operating bookbinding machines;
- \* operating pressing machines which emboss designs and titles on book covers;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 82521 Machine-operator, bookbinding*
- 82522 Machine-operator, embossing/book*

**8253 PAPER PRODUCTS MACHINE-OPERATORS**

Paper products machine-operators operate machines which produce boxes, envelopes, bags and other products from paper, paperboard, cardboard, cellophane and similar materials.

**Tasks include:**

- \* operating machines which glue paper to cardboard, cut it to the required length or cut and crease cardboard or paperboard to form box blanks;
- \* operating pressing machines which form drinking cups or other containers from paper, paperboard or cardboard;
- \* operating machines which cut, fold and glue paper to make envelopes, paper straws and paper bags, or which form bags from other materials;
- \* operating machines which make joss paper and other ceremonial paper products used in praying and other religious activities;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 82531 Machine-operator, carton and paper box production*
- 82532 Machine-operator, envelope and paper bag production*
- 82533 Machine-operator, cellophane bag production*
- 82534 Machine-operator, straw production*
- 82535 Press-operator, cardboard*

- 82536 *Machine-operator, joss paper production*
- 82537 *Machine-operator, cardboard products*
- 82538 *Machine-operator, paper products*

## **826     TEXTILE PRODUCTS MACHINE-OPERATORS**

Textile products machine-operators operate machines which spin and wind thread, weave fabrics, sew or embroider garments, or treat textile products.

### **8261    SPINNING AND WINDING MACHINE-OPERATORS**

Spinning and winding machine-operators operate machines which prepare fibres, and spin, twist and wind yarn and thread.

#### **Tasks include:**

- \* operating machines which combine textile fibres into uniform blends;
- \* operating machines which clean and fluff textile fibres, transform them into sliver, comb them into sliver for first drawing, combine slivers into sliver lap or sliver laps into ribbon lap, combine several slivers into one attenuated strand of regular quality and weight;
- \* operating machines which transform sliver into roving;
- \* operating machines which spin thread and yarn from roving, wind two or more threads onto bobbin, twist two or more strands of yarn or thread into single heavier and stronger strand, or wind yarn or thread from one package to another;
- \* performing related tasks;
- \* supervising other workers.

#### **Examples of the occupations classified here:**

- 82611 *Spinner, thread and yarn*
- 82612 *Winder, thread and yarn*
- 82613 *Machine-operator, fibre preparing*
- 82614 *Machine-operator, twisting/thread and yarn*
- 82615 *Reeler, silk*

### **8262    WEAVING AND KNITTING MACHINE-OPERATORS**

Weaving and knitting machine-operators operate weaving and knitting machines and related equipment used to produce materials and fabrics.

#### **Tasks include:**

- \* operating machines used to weave or knit plain or figured cloth, tapestry, lace, carpets, garments, net, hosiery or other fabrics or articles;
- \* performing related tasks;
- \* supervising other workers.

#### **Examples of the occupations classified here:**

- 82621 *Machine-operator, weaving*
- 82622 *Machine-operator, knitting*
- 82623 *Machine-operator, net production*
- 82624 *Machine-operator, weaving/carpet*
- 82625 *Jacquard card cutter*

- 82626 *Machine-operator, lace production*
- 82627 *Machine-operator, warping/beam (textile weaving)*
- 82628 *Fabrics repairer*

## **8263 SEWING AND EMBROIDERING MACHINE-OPERATORS**

Sewing and embroidering machine-operators operate sewing machines to make textile, leather garments or embroider ornamental designs on garments or other materials.

### **Tasks include:**

- \* operating and monitoring standard or specialised single- or multiple-needle sewing machines to make or repair garments, gloves and miscellaneous products in textiles or leather;
- \* operating and monitoring standard or specialised single- or multiple-needle sewing machines to embroider ornamental designs on textiles or other materials;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

- 82631 *Machine-operator, sewing*
- 82632 *Embroiderer, machine*

## **8264 TEXTILE BLEACHING, DYEING AND CLEANING MACHINE-OPERATORS**

Textile bleaching, dyeing and cleaning machine-operators operate machines which bleach, dye, wash and otherwise treat fibres, yarn, or cloth or dry clean textile and leather articles.

### **Tasks include:**

- \* operating and monitoring machines which treat textile products to make them lighter in colour or to give them a specific colour;
- \* operating and monitoring machines which wash or dry-clean textile or leather products to remove dirt, impurities, excess chemicals or natural gum;
- \* operating and monitoring machines which shrink cloth or strengthen the weave by interlocking the fibres;
- \* operating and monitoring machines which impregnate textiles with chemicals to render them waterproof;
- \* operating and monitoring machines which treat silk to give it body and weight;
- \* operating and monitoring machines which press, stretch, or impart lustre, or other type of finish to textiles;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

- 82641 *Machine-operator, bleaching/textiles*
- 82642 *Machine-operator, dyeing*
- 82643 *Machine-operator, starching*
- 82644 *Machine-operator, washing and shrinking/textiles*
- 82645 *Machine-operator, drying/textiles*
- 82646 *Machine-operator, dry-cleaning*
- 82647 *Operator, calender/textiles*

## **8265 LEATHER PREPARING MACHINE-OPERATORS**

Leather preparing machine-operators operate and monitor various machines which prepare leather.

### **Tasks include:**

- \* operating and monitoring machines which remove flesh, fat and hair from pelts before curing;
- \* operating and monitoring machines which treat hides and skins in solutions and apply finishing product to convert them into leather;
- \* operating and monitoring machines which apply dyes and stains to leather;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

*82651 Machine-operator, hide processing*

*82652 Machine-operator, fleshing/hide*

*82653 Machine-operator, dehairing/hide*

*82654 Machine-operator, tanning*

*82655 Machine-operator, staining/leather*

*82656 Machine-operator, cutting/leather*

## **8266 SHOEMAKING AND RELATED MACHINE-OPERATORS**

Shoemaking and related machine-operators operate and monitor machines which produce and repair standard or special footwear, handbags and other accessories, mainly made of leather.

### **Tasks include:**

- \* 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 collars or harnesses;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

*82661 Machine-operator, footwear production*

*82662 Machine-operator, footwear production/orthopaedic*

*82663 Machine-operator, footwear production/sports*

## **8269 TEXTILE AND LEATHER PRODUCTS MACHINE-OPERATORS NOT ELSEWHERE CLASSIFIED**

This unit group covers textile and leather products machine-operators not classified elsewhere in Minor Group 826: Textile Products Machine-operators. For instance, here should be classified those who are engaged in operating machines which make hats, mattresses or miscellaneous articles such as braids, lace or other trimmings.

**Tasks would include:**

- \* operating and monitoring machines which make hats, mattresses or miscellaneous articles such as braids, lace or other trimmings;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 82691 *Machine-operator, braid production*
- 82692 *Machine-operator, cutting/garments*
- 82693 *Machine-operator, cutting/textiles*
- 82694 *Machine-operator, hat making*
- 82695 *Machine-operator, mattress production*
- 82696 *Machine-operator, pattern-making/leather*
- 82697 *Machine-operator, pattern-making/textiles*

**827 FOOD AND RELATED PRODUCTS MACHINE-OPERATORS**

Food and related products machine-operators operate machines which process foodstuffs and manufacture food and related products for human and animal consumption.

**8271 MEAT AND FISH PROCESSING MACHINE-OPERATORS**

Meat and fish processing machine-operators operate machines used to slaughter animals, trim carcasses, prepare standard meat or fish cuts, and manufacture meat and fish products.

**Tasks include:**

- \* operating machines used to slaughter animals and to cut carcasses or fish into standard pieces;
- \* operating machines used to mince and mix meat or fish;
- \* operating machines used to process meat and fish and manufacture various meat and fish products such as sausages, belacan, fish-meal, smoked meat or smoked fish;
- \* operating machines used to produce canned or frozen meat and fish dishes;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 82711 *Machine-operator, sausage production*
- 82712 *Machine-operator, fish-meal production*
- 82713 *Machine-operator, belacan production*
- 82714 *Machine-operator, fish processing*
- 82715 *Machine-operator, meat processing*
- 82716 *Machine-operator, canning/fish*
- 82717 *Machine-operator, canning/meat*

**8272 DAIRY PRODUCTS MACHINE-OPERATORS**

Dairy products machine-operators operate machines which process milk and cream and make dairy products.

**Tasks include:**

- \* operating machines which pasteurise, homogenise and heat-treat milk and cream;
- \* operating machines which make condensed or powdered milk;
- \* operating machines which make ice-cream;
- \* operating and monitoring machines which make butter, cheese and other milk or milk-based products;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 82721 Machine-operator, processing/dairy products*
- 82722 Machine-operator, ice-cream production*
- 82723 Machine-operator, pasteurising/dairy products*
- 82724 Machine-operator, butter production*
- 82725 Machine-operator, milk powder production*
- 82726 Operator, vacuum pan/condensed milk*

**8273 GRAIN AND SPICE MILLING MACHINE-OPERATORS**

Grain and spice milling machine-operators operate and monitor machinery used to crush, grind, blend and otherwise process grain, spices and related foodstuffs for human or animal consumption.

**Tasks include:**

- \* operating machinery used for the production of flour, meal and animal feed, and for processing rice;
- \* operating and monitoring milling machines used for grinding grain and spices;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 82731 Miller, grain*
- 82732 Miller, rice*
- 82733 Miller, spice*
- 82734 Miller, tapioca*
- 82735 Machine-operator, milling/mustard seeds*
- 82736 Grinder, feed*
- 82737 Mixer, spice*

**8274 BAKED AND CEREAL PRODUCTS MACHINE-OPERATORS**

Baked goods and cereal products machine-operators operate mixing, blending, shaping and baking machines which produce cereals, bread, pastry, pasta, chocolate and related products from flour, cocoa and other ingredients.

**Tasks include:**

- \* operating machines which mix and blend flour with other ingredients to prepare dough for the production of bread, pastries, pasta, noodle and related products;
- \* operating machines which extrude and shape dough for the production of bread, pastries, pasta and related products;
- \* operating ovens used for baking bread, pastries, pasta and related products;
- \* operating machines used for making cereals;
- \* operating machines used for making chocolate and confectionery;
- \* operating wafer-baking machines to bake wafers;
- \* operating machines for making sago;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 82741 Machine-operator, pastry production*
- 82742 Machine-operator, bread production*
- 82743 Machine-operator, confectionery production*
- 82744 Machine-operator, chocolate production*
- 82745 Machine-operator, noodle production*
- 82746 Machine-operator, sago production*
- 82747 Machine-operator, wafer-baking*
- 82748 Machine-operator, pasta production*

**8275 FRUIT, VEGETABLE AND NUT PROCESSING MACHINE-OPERATORS**

Fruit, vegetable and nut processing machine-operators operate machines which extract juice from fruits and vegetables or oil from oil-bearing seeds, nuts and fruits, and which process fruits, vegetables and nuts by drying, cooking, canning or freezing.

**Tasks include:**

- \* operating machines which extract juice from fruits and vegetables by heating or pressing;
- \* operating machines which extract and refine oil from oil-bearing seeds, nuts and fruits;
- \* operating machines which make margarine and similar products from animal and vegetable oils;
- \* operating machines which prepare fruits, vegetables and nuts for further processing;
- \* operating machines which dry, cook, can, freeze or otherwise process fruits, vegetables and nuts;
- \* operating machines used for various kinds of condiment and sauce production;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 82751 Press-operator, fruit*
- 82752 Press-operator, edible oils*
- 82753 Machine-operator, margarine processing*
- 82754 Machine-operator, vegetable processing*

- 82755 *Machine-operator, refining/oils and fats*  
82756 *Dehydrator, foodstuffs*  
82757 *Machine-operator, canning (food canning and preserving)*  
82758 *Machine-operator, sauce production*

## **8276 SUGAR PROCESSING AND REFINING OPERATORS**

Sugar processing and refining operators operate machines which process raw sugar-cane and produce refined sugar.

### **Tasks include:**

- \* operating machines which crush sugar-cane or extract liquor from sugar-beet;
- \* operating tanks used to purify sugar liquor or produce sugar crystals from hot sugar liquor;
- \* operating machines which refine sugar-beet or sugar-cane by a continuous process;
- \* operating machines which extract and refine sugar juices from maple, palm and other vegetable sources;
- \* operating machines which process honey;
- \* performing related tasks;
- \* supervising other workers.

### **Example of the occupations classified here:**

82760 *Operator, processing and refining/sugar*

## **8277 BREWERS, WINE AND OTHER BEVERAGE MACHINE-OPERATORS**

Brewers, wine and other beverage machine-operators operate machines which mix, press or malt and ferment grains and fruit to make malt liquors, wine and other alcoholic or non-alcoholic beverages, except fruit and vegetable juices.

### **Tasks include:**

- \* operating machines which process barley and other grains used in making distilled and malt liquors, and controlling the fermentation process;
- \* operating machines which process grapes and other fruit used in making wines, and controlling the fermentation process;
- \* operating stills which increase or reduce the alcohol content of alcoholic beverages;
- \* operating machines which blend wines and liquors to obtain desired tastes and flavours;
- \* operating machines which make non-alcoholic beverages, except fruit and vegetable juices;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

- 82771 *Brewer*  
82772 *Machine-operator, distilling/spirits*  
82773 *Kiln-operator, malting/spirits*

- 82774 *Operator, fermentation equipment/spirits*
- 82775 *Attendant, filtration*
- 82776 *Operator, syrup-mixing plant*
- 82777 *Attendant, pasteuriser (brewery)*
- 82778 *Machine-operator, soft-drinks production*

## **8278 TOBACCO PRODUCTS MACHINE-OPERATORS**

Tobacco products machine-operators operate machines which process tobacco and make cigarettes and other tobacco products.

### **Tasks include:**

- \* operating machines which process tobacco in preparation for manufacturing cigarettes, cigar and other tobacco products;
- \* operating machines which produce cigarettes, cigar and other tobacco products;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

- 82781 *Machine-operator, cigarette production*
- 82782 *Machine-operator, cigar production*
- 82783 *Machine-operator, tobacco processing*

## **8279 FOOD AND RELATED PRODUCTS MACHINE-OPERATORS NOT ELSEWHERE CLASSIFIED**

Food and related products machine-operators not elsewhere classified operate machines to prepare tea leaves, coffee, cocoa, animal feeds, bean curd, soup powder and related products.

### **Tasks include:**

- \* operating machines used to dry tea leaves, roll withered leaves or dry rolled leaves, and blend various grades of tea;
- \* operating machines used to cut coffee or cocoa berries and remove and wash off pulp, peel off husk from beans, and cure and blend beans;
- \* operating machines which roast blended coffee or cocoa beans;
- \* operating machines which crush tea or grind coffee or cocoa;
- \* operating machines that mix stocks or poultry feed according to formula to produce animal feeds;
- \* operating machines to make bean curd;
- \* operating machines that mix raw soup powder and other ingredients in making mixed soup powder;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

82791 *Machine-operator, tea-leaf processing*  
82792 *Machine-operator, coffee-bean processing*  
82793 *Machine-operator, cocoa-bean processing*  
82794 *Machine-operator, feed mixing*  
82795 *Machine-operator, bean curd production*  
82796 *Machine-operator, soup powder production*

**828     ASSEMBLERS**

Assemblers assemble components into products according to specifications.

**8281    MECHANICAL MACHINERY ASSEMBLERS**

Mechanical machinery assemblers assemble the components or parts of mechanical machinery according to specifications.

**Tasks include:**

- \* assembling the components or parts of mechanical machinery, engines and vehicles according to specifications;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

82811 *Assembler, automobile*  
82812 *Assembler, refrigeration and air-conditioning equipment*  
82813 *Assembler, motor-cycle*  
82814 *Assembler, earth-moving equipment*  
82815 *Assembler, sewing machine*  
82816 *Assembler, bicycle*  
82817 *Assembler, aircraft*  
82818 *Assembler, industrial machinery*

**8282    ELECTRICAL AND ELECTRONIC EQUIPMENT ASSEMBLERS**

Electrical and electronic equipment assemblers assemble the components or parts of electrical and electronic equipment according to specifications.

**Tasks include:**

- \* assembling the components or parts of electrical and electronic equipment according to specifications;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

82821 *Assembler, electrical equipment*  
82822 *Assembler, electronic equipment*  
82823 *Assembler, semi-conductor*  
82834 *Assembler, battery*  
82835 *Assembler, electric-sign*

- 82826 *Assembler, microelectronics equipment*
- 82827 *Assembler, audio-visual equipment*
- 82828 *Assembler, precision instrument*

## **8283 LEATHER, METAL, RUBBER AND PLASTIC PRODUCTS ASSEMBLERS**

Leather, metal, rubber and plastic products assemblers perform limited specialised tasks in assembling the leather, metal, rubber or plastic components or parts of various types of products such as toys, sports articles, bicycles, etc., according to specifications.

### **Tasks include:**

- \* assembling the leather, metal, rubber or plastic components or parts of various types of products according to specifications;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

- 82831 *Assembler, leather products*
- 82832 *Assembler, metal products*
- 82833 *Assembler, rubber products*
- 82834 *Assembler, plastics products*

## **8289 OTHER ASSEMBLERS NOT ELSEWHERE CLASSIFIED**

Other assemblers not elsewhere classified assemble the components or parts made from wood, paperboard, textile and related materials, of various types of products, according to specifications.

### **Tasks include:**

- \* assembling the components or parts made from wood, paperboard, textile or related materials, of various types of products, according to specifications;
- \* assembling products whose component parts are made of a wide range of materials;
- \* attaching metal, plastic or other fittings;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

- 82891 *Assembler, wood products*
- 82892 *Assembler, paperboard products*
- 82893 *Assembler, textile products*
- 82894 *Assembler, composite products*

## **829 MACHINE-OPERATORS NOT ELSEWHERE CLASSIFIED**

This minor group covers machine-operators not classified elsewhere in minor groups 821 - 828, including those who are engaged to operate machines which pack, label, and, if needed, add revenue stamps to products, packages and containers, or inspect finished products or parts for conformance to manufacturer's standards, finish and appearance.

## **8290 MACHINE-OPERATORS NOT ELSEWHERE CLASSIFIED**

Machine-operators not elsewhere classified operate machines which pack, label and, if needed, add revenue stamps to products, packages and containers, or inspect finished products or parts for conformance to manufacturer's standards, finish and appearance.

### **Tasks include:**

- \* inspecting finished products or parts for conformance to manufacturer's standards, finish and appearance;
- \* operating machines which wrap and pack various products, including liquid ones, for storage or shipment;
- \* operating machines which, by gluing or other methods, label products, packages and various containers, or add revenue stamps;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

- 82901 Quality checker/tester*
- 82902 Machine-operator, packing*
- 82903 Machine-operator, labelling*
- 82904 Machine-operator, bottling*
- 82905 Machine-operator, capping*
- 82906 Machine-operator, filling/containers*
- 82907 Machine-operator, insulation*
- 82908 Machine-operator, pelletising*

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

Drivers and mobile plant operators drive trains and motor vehicles, operate mobile industrial and agricultural machinery and equipment, or execute deck duties on board ship and other water-borne craft.

**This sub-major group consists of the following minor groups:**

- 831 RAILWAY ENGINE DRIVERS AND RELATED WORKERS**
- 832 MOTOR VEHICLE DRIVERS**
- 833 AGRICULTURAL AND OTHER MOBILE PLANT OPERATORS**
- 834 SHIP'S DECK CREWS AND RELATED WORKERS**

### **831 RAILWAY ENGINE DRIVERS AND RELATED WORKERS**

Railway engine drivers and related workers drive locomotives, monorail or LRT trains to transport freight or passengers, manoeuvre railway coaches or operate railway signals.

#### **8311 RAILWAY ENGINE AND LRT TRAIN DRIVERS**

Railway and LRT train drivers drive or assist in driving locomotives, monorail or LRT trains to transport passengers and freight.

**Tasks include:**

- \* driving or assisting in driving a steam, electric or diesel-electric locomotive engine;
- \* driving monorail or LRT train;
- \* driving a locomotive to haul carriages underground or on the surface of a mine or quarry;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

**83111** *Driver, railway engine*

**83112** *Operator, train/LRT*

**83114** *Driver, mine engine*

**8312 RAILWAY BRAKERS AND RELATED WORKERS**

Railway brakemen and related workers take charge of and safeguard railway freight trains during runs, control the movement of railway traffic by operating signals, switch rolling stock and make up trains in railway yards, make up trains for hauling in mines and control their movement.

**Tasks include:**

- \* taking charge of and safeguarding freight train during run;
- \* controlling flow of railway traffic over section of line by operating signals and switches from control panel or signal box;
- \* 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 haulageways in a mine or quarry;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

**83121** *Brakeman, railway*

**83122** *Signaller, railway*

**83123** *Shunter, railway*

**83124** *Coupler, railway yard*

**832 MOTOR VEHICLE DRIVERS**

Motor vehicle drivers drive and tend motor vehicles to transport passengers, goods and materials.

**8321 MOTORCYCLE DRIVERS**

Motorcycle drivers drive motorcycles or motorised tricycles to transport passengers, goods and materials.

**Tasks include:**

- \* driving motorcycle or motorised tricycle to transport passengers, goods and materials;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*83211 Motorcyclist*  
*83212 Rider, despatch*

**8322 CAR, TAXI AND LIGHT GOODS VEHICLE DRIVERS**

Car, taxi and light goods vehicle drivers drive motor cars and light goods vehicles to transport passengers, mail or goods.

**Tasks include:**

- \* driving passenger cars or taxis;
- \* driving cars, vans or small trucks to deliver mail or goods;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*83221 Driver, taxi*  
*83222 Chauffeur*  
*83223 Driver, van*  
*83224 Driver, ambulance*

**8323 BUS, TRAM AND RELATED DRIVERS**

Bus, tram and related drivers drive buses or tramcars to transport passengers, mail or goods.

**Tasks include:**

- \* driving motor bus, trolley bus or motor coach to transport local or long-distance passengers, mail or goods;
- \* driving tramcar transporting passengers;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*83231 Driver, bus*  
*83232 Driver, tram*

**8324 HEAVY TRUCK AND LORRY DRIVERS**

Heavy truck and lorry drivers drive heavy motor vehicles to transport goods, liquids and heavy materials over short or long distances.

**Tasks include:**

- \* driving 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;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 83241 Driver, lorry*
- 83242 Driver, fire-engine*
- 83243 Driver, dumper*
- 83244 Driver, truck*

**833 AGRICULTURAL AND OTHER MOBILE PLANT OPERATORS**

Agricultural and other mobile plant operators drive or operate agricultural and other machinery and equipment for handling materials and heavy objects.

**8331 MOTORISED FARM AND FORESTRY PLANT OPERATORS**

Motorised farm and forestry plant operators drive or operate one or more types of motorised, mobile farm or forestry machinery or equipment.

**Tasks include:**

- \* driving or operating tractor or self-propelled ploughing, planting, harvesting, baling or other special-purpose farm machinery, or similar tractor-drawn equipment;
- \* driving or operating tractor or self-propelled clearing, planting, harvesting, timber-carrying or other special-purpose forestry machinery;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 83311 Operator, motorised farm equipment*
- 83312 Driver, timber carrier*
- 83313 Driver, winch-truck (logging)*
- 83114 Operator, harvester*

**8332 EARTH-MOVING AND RELATED MACHINERY OPERATORS**

Earth-moving and related machinery operators operate machines to excavate, grade, level and compact earth or similar materials and lay surfaces of asphalt and concrete.

**Tasks include:**

- \* operating excavating machines, equipped with moveable shovel, grab-bucket or dragline bucket, to excavate and move earth, rock, sand, gravel or similar materials, or to tear down buildings or other structures;
- \* operating machines for digging trenches for sewers, drainage, water, oil, gas or similar pipelines;
- \* operating machines equipped with concave steel blade to move, distribute and level earth, sand and other materials;
- \* operating equipment to remove sand, gravel and mud from bottom of body of water;
- \* operating machines for hammering wooden, concrete or steel piles into ground;
- \* operating power roller to compact and smooth layers of materials in making roads, pavements and similar works;

- \* operating machines which spread and smooth concrete or bituminous or tar preparations to construct roadways, roads or similar works;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 83321 *Operator, excavating-shovel*
- 83322 *Machine-operator, trench digging*
- 83323 *Operator, pile-driver*
- 83324 *Operator, bulldozer*
- 83325 *Machine-operator, road making*
- 83326 *Operator, dredge*
- 83327 *Operator, tunnelling machinery/construction*
- 83328 *Operator, drilling plant*

**8333 CRANE, HOIST AND RELATED EQUIPMENT OPERATORS**

Crane, hoist and related equipment operators operate cranes and other hoisting equipment.

**Tasks include:**

- \* operating mobile or stationary cranes with mobile or fixed jib or boom;
- \* operating equipment for hoisting, lowering or raising men and materials on construction site or in mine;
- \* operating ski-lifts and similar equipment;
- \* operating machinery used to haul ferry or barge with goods, passengers and vehicles across short stretches of water;
- \* operating machinery to open and close bridge for the passage of road and water traffic;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 83331 *Operator, crane*
- 83332 *Operator, winch*
- 83333 *Operator, hoist*
- 83334 *Operator, elevator/material-handling*
- 83335 *Operator, cable car*

**8334 LIFTING TRUCK OPERATORS**

Lifting truck operators drive, operate and monitor lifting truck or similar vehicle to transport, lift and stack goods in warehouses, storerooms or other places.

**Tasks include:**

- \* operating lifting-truck and similar equipment to load and unload, transport, lift and stack goods and pallets in terminals, harbours, warehouses, factories and other establishments;
- \* performing related tasks;
- \* supervising other workers.

**Example of the occupations classified here:**

**83340** *Operator, truck/forklift*

**834**    **SHIP'S DECK CREWS AND RELATED WORKERS**

Ship's deck crews and related workers carry out deck duties on board ship and similar duties on board other water-borne craft.

**8340**    **SHIP'S DECK CREWS AND RELATED WORKERS**

Ship's deck crews and related workers carry out deck duties on board ship and similar duties on board other water-borne craft.

**Tasks include:**

- \* standing look-out watches at sea and when entering or leaving harbour or other narrow waters;
- \* steering ship according to instructions;
- \* handling mooring lines on board;
- \* maintaining and, in some cases, operating ship's equipment, cargo gear, rigging, life-saving and fire-fighting appliances;
- \* performing deck and hull cleaning, scraping, painting and other maintenance duties as required;
- \* operating light and signal warning apparatus of a lighthouse;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 83401** *Helmsman*
- 83402** *Boatswain*
- 83403** *Deckhand (ship, barge and boat)*
- 83404** *Quartermaster, ship*
- 83405** *Ram controller*
- 83406** *Ligherman*
- 83407** *Crewman*
- 83408** *Keeper, lighthouse*

## **MAJOR GROUP 9: ELEMENTARY OCCUPATIONS**

Elementary occupations perform simple and routine tasks which mainly require the use of hand-held tools and in some cases considerable physical effort. Most occupations in this major group require skills at the first skill level.

**This major group consists of the following sub-major groups:**

- 91 SALES AND SERVICES ELEMENTARY OCCUPATIONS**
- 92 MESSENGERS, PORTERS, ATTENDANTS AND RELATED WORKERS**
- 93 LABOURERS AND RELATED WORKERS**

### **91 SALES AND SERVICES ELEMENTARY OCCUPATIONS**

Sales and services elementary occupations perform tasks relating to street sales or services, or cleaning, property watching and caretaking.

**This sub-major group consists of the following minor groups:**

- 911 STREET VENDORS AND RELATED WORKERS**
- 912 DOMESTIC AND RELATED HELPERS, CLEANERS AND LAUNDERERS**
- 913 BUILDING CARETAKERS, WINDOW AND RELATED CLEANERS**
- 914 GARBAGE COLLECTORS AND RELATED WORKERS**

#### **911 STREET VENDORS AND RELATED WORKERS**

Street vendors and related workers sell food and other goods in streets and public places.

##### **9110 STREET VENDORS AND RELATED WORKERS**

Street vendors and related workers prepare and sell food and non-food products in streets and public places such as stations, cinemas or theatres.

##### **Tasks include:**

- \* obtaining food and non-food products for sales;
- \* loading and unloading push-cart, bicycle, truck or other vehicle, to transport goods to the streets or public places such as stations or cinemas;
- \* displaying foods, drinks and goods;
- \* receiving payment on the spot;
- \* performing related tasks;
- \* supervising other workers.

##### **Examples of the occupations classified here:**

- 91101 *Vendor, street/food***
- 91102 *Hawker (except prepared food or drinks)***
- 91103 *Hawker (food and non-food)***
- 91104 *Pedler***

## **912 DOMESTIC AND RELATED HELPERS. CLEANERS AND LAUNDERERS**

Domestic and related helpers, cleaners and launderers perform various tasks in private households, hotels, offices, hospitals and other establishments, as well as in aircraft, trains, coaches, trams and similar vehicles, in order to keep the interiors and fixtures clean, or they do hand-laundering and pressing.

### **9121 DOMESTIC HELPERS AND CLEANERS**

Domestic helpers and cleaners perform various tasks in private households in order to keep the interiors and fixtures clean, laundering and pressing as well as preparing and serving meals and refreshments.

#### **Tasks include:**

- \* sweeping, vacuum cleaning, polishing and washing floors and furniture or washing windows and other fixtures;
- \* making beds and cleaning bathrooms;
- \* washing, ironing and mending linen and other textiles;
- \* washing dishes and kitchen utensils;
- \* preparing, cooking and serving meals and refreshments;
- \* purchasing food and other household supplies;
- \* may take care of children and oversee their daily activities;
- \* performing related tasks;
- \* supervising other workers.

#### **Examples of the occupations classified here:**

*91211 Helper, domestic*

*91212 Laundress (household)*

*91213 Cleaner, domestic*

### **9122 HELPERS AND CLEANERS IN OFFICES, HOTELS AND RELATED ESTABLISHMENTS**

Helpers and cleaners in offices, hotels and related establishments perform various cleaning tasks in order to keep clean and tidy the interiors and fixtures of offices, hotels and other establishments as well as of aircraft, trains, buses and similar vehicles.

#### **Tasks include:**

- \* sweeping or vacuum-cleaning, 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 works, including washing and peeling vegetables and fruits;
- \* washing dishes, glassware, cutlery, pots and pans using dishwasher or by hand;
- \* helping guests with baggage and running errand for them;
- \* cleaning and servicing guest rooms in hotels or other lodging establishments;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*91221 Chambermaid/Room boy*  
*91222 Porter, hotel*  
*91223 Washer, hand/dish*  
*91224 Assistant, kitchen*  
*91225 Cleaner, office*  
*91226 Cleaner, hotel*  
*91227 Cleaner, aircraft*  
*91228 Cleaner, bus/interior*

**9123 LAUNDRY AND DRY CLEANING WORKERS**

Laundry and dry cleaning workers launder, press or dry-clean linen and other textiles.

**Tasks include:**

- \* sorting articles for cleaning according to the type of article, colour, fabric and cleaning treatment;
- \* laundering and pressing linen, clothing, fabrics and similar articles by hand in a laundry or other establishment;
- \* cleaning clothing, fabrics, leather goods and similar articles with chemical solutions in a dry-cleaning or other establishment;
- \* placing articles on shelves or hanging garments for delivery or collection;
- \* performing related tasks;
- \* supervising other workers.

**Example of the occupations classified here:**

*91230 Laundry and dry cleaning worker*

**913 BUILDING CARETAKERS. WINDOW AND RELATED CLEANERS**

Building caretakers, window and related cleaners take care of apartment houses, hotels, offices, mosques, temples, churches and other buildings and maintain them in a clean and orderly condition.

**9131 BUILDING CARETAKERS**

Building caretakers take care of apartment houses, offices, schools, mosques, temples, churches and other buildings and maintain them in a clean and orderly condition.

**Tasks include:**

- \* participating in cleaning, simple repairs and maintenance of building interiors;
- \* 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;
- \* taking care of interior and furnishings of churches, mosques and other places of worships;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*91311 Caretaker, building*

*91312 Siak/Sexton*

**9132 VEHICLE, WINDOW AND RELATED CLEANERS**

Vehicle, window and related cleaners clean windows, showcases or other glass surfaces of buildings or vehicles.

**Tasks include:**

- \* cleaning, washing and polishing cars and other vehicles by hand or machine;
- \* washing windows or other glass surfaces with water or various solutions, drying and polishing them;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*91321 Cleaner, window*

*91322 Cleaner, vehicles*

**914 GARBAGE COLLECTORS AND RELATED WORKERS**

Garbage collectors and related workers collect garbage from buildings, yards, streets and other public places, or keep streets and other public places clean.

**9141 GARBAGE COLLECTORS**

Garbage collectors collect and remove garbage from buildings, yards, streets and other public places for disposal.

**Tasks include:**

- \* riding on or in garbage trucks;
- \* collecting garbage from domestic, commercial and industrial establishments;
- \* loading rubbish into bins or garbage trucks;
- \* unloading garbage truck;
- \* collecting night soil containers from private residences and other buildings;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*91411 Garbage disposal worker*

*91412 Night soil carrier*

## **9142 SWEEPERS AND RELATED WORKERS**

Sweepers and related labourers sweep and clean streets, parks, airports, stations and other public places.

### **Tasks include:**

- \* sweeping streets, parks, airports, stations and similar public places;
- \* operating a mechanical suction sweeper for cleaning roads;
- \* beating dust out of carpets by using a carpet-beater;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

*91421 Sweeper, road*

*91422 Sweeper, park*

*91423 Labourer, odd-jobbing*

## **92 MESSENGERS, PORTERS, ATTENDANTS AND RELATED WORKERS**

Messengers, porters, attendants and related workers deliver messages or goods, carry luggage (except hotels), attend parking places and guard private and public properties, perform ushering duties, or collect vending-machine money, or read electricity, gas or water meters.

### **This sub-major group consists of the following minor group:**

## **920 MESSENGERS, PORTERS, ATTENDANTS AND RELATED WORKERS**

### **920 MESSENGERS, PORTERS, ATTENDANTS AND RELATED WORKERS**

Messengers, porters, attendants and related workers deliver messages or goods, carry luggage (except hotels), attend parking places and guard private and public properties, perform ushering duties, or collect vending-machine money, or read electricity, gas or water meters.

## **9201 MESSENGERS AND PORTERS**

Messengers and porters deliver messages, packages and other items within an establishment or between establishments, to households and elsewhere, or carry luggage especially at stations and airports.

### **Tasks include:**

- \* delivering messages, packages and other items within an establishment or between establishments, or elsewhere;
- \* performing the duties of a post-runner;
- \* delivering various goods to and from enterprises, shops, households and other places;
- \* carrying and delivering luggage at stations, airports and elsewhere;

- \* collecting and delivering files, messages, documents and other items within or on behalf of an office, industrial or business;
- \* sticking poster or displaying poster and banner in prominent places to advertise entertainment, political event or product;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 92011** *Messenger/courier*
- 92012** *Porter, luggage/baggage (except hotel)*
- 92013** *Office boy*
- 92014** *Deliverer, newspaper/leaflets*
- 92015** *Caddie, golf*

**9202 ATTENDANTS**

Attendants are primarily concerned with the provision of services in office, industrial or business, recreational and related establishments.

**Tasks include:**

- \* attending to patient's needs and maintaining cleanliness of wards in hospitals and related establishments;
- \* cleaning laboratory equipment;
- \* operating passenger or goods lift in buildings;
- \* attending to the needs of persons engaged in sports;
- \* collecting parking fees, issuing ticket stubs, directing customers to parking spaces and parking cars;
- \* collecting tickets and admitting patrons to amusement parks and rides, assisting patrons to get on and off rides, and secure and release safety belts and bars;
- \* assigning bowling alleys to patrons, issuing score sheets, renting bowling shoes and collecting fees;
- \* scheduling the use of golf courses, tennis court, fitness clubs and other recreational facilities and may collect fees from players and sell or rent sports equipment;
- \* cleaning and keeping lavatories in buildings such as offices, theatres, restaurants and other establishments in neat and orderly condition;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 92021** *Attendant, laboratory*
- 92022** *Attendant, hospital*
- 92023** *Attendant, parking*
- 92024** *Attendant, lift*
- 92025** *Attendant, amusement park*
- 92026** *Attendant, restroom*
- 92027** *Attendant, sports*

## **9203 WATCHMEN, DOORKEEPERS AND RELATED WORKERS**

Watchmen, doorkeepers and related workers undertake doorkeeping duties in apartment houses and other buildings, watch houses and other properties to prevent illegal entry or theft and detect fire or other hazards, collect tickets, or perform ushering duties.

### **Tasks include:**

- \* doorkeeping in hotels and helping guests, especially on their arrival and departure, with luggage, keys, or information about directions, etc.;
- \* doorkeeping in apartment houses and other buildings, checking the right-of-entry of callers and giving them requested information;
- \* watching houses and other properties to prevent illegal entry or theft, fire or other hazards;
- \* ushering people into courtrooms and similar establishments;
- \* collecting tickets or admission passes and ushering patrons to their seats at entertainment, sporting or recreational venues;
- \* taking charge of cloakrooms in public places;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

- 92031 Watchman*
- 92032 Doorman*
- 92033 Collector, ticket*
- 92034 Attendant, cloakroom*
- 92035 Concierge*

## **9204 VENDING MACHINE-OPERATORS, METER READERS AND RELATED WORKERS**

Vending machine operators, meter readers and related workers stock vending machines and collect money from them or from parking meters and other coin-boxes, or read electricity, gas or water meters.

### **Tasks include:**

- \* 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;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

- 92014 Meter reader*
- 92042 Collector, vending machine/money*

## **93 LABOURERS AND RELATED WORKERS**

Labourers and related workers mainly perform simple and routine farming, forestry, fishing, hunting, trapping, manufacturing, mining, construction or transportation tasks, requiring the use of simple hand-held tools and very often considerable physical effort.

**This sub-major group consists of the following minor groups:**

- 931 AGRICULTURAL AND FISHERY LABOURERS AND RELATED LABOURERS**
- 932 MANUFACTURING LABOURERS AND RELATED WORKERS**
- 933 MINING AND CONSTRUCTION LABOURERS AND RELATED WORKERS**
- 934 TRANSPORT LABOURERS AND RELATED WORKERS**

### **931 AGRICULTURAL AND FISHERY LABOURERS AND RELATED WORKERS**

Agricultural and fishery labourers and related workers mainly perform simple and routine farming, forestry, fishing, hunting or trapping tasks, requiring the use of simple hand-held tools and usually considerable physical effort.

#### **9311 AGRICULTURAL FARMHANDS AND LABOURERS**

Agricultural farmhands and labourers help with farm work by performing a variety of simple farming tasks.

**Tasks include:**

- \* digging and shovelling to clear ditches or for other purposes;
- \* loading and unloading various crops and other materials;
- \* raking, pitching and stacking hay;
- \* watering and weeding;
- \* picking fruits, vegetables and various plants;
- \* helping with planting, harvesting and general farm work;
- \* feeding, watering and cleaning animals and keeping their quarters clean;
- \* performing related tasks;
- \* supervising other workers.

**Example of the occupations classified here:**

**93111 *Labourer, farm***

#### **9312 LANDSCAPE, PARK AND GARDEN MAINTENANCE WORKERS**

Landscape, park and garden maintenance workers perform a variety of simple gardening tasks.

**Tasks include:**

- \* preparing soil and planting flowers, shrubs and trees in parks or public or private gardens;
- \* cutting lawns using hand mover or power motor;
- \* trimming and edging around paths, flower beds and walls using clippers and edging tools;

- \* pruning shrubs and trees to shape and improve growth using shears;
- \* weeding and otherwise tending plants;
- \* spraying lawn shrubs and trees with fertiliser or insecticide;
- \* raking, sweeping and burning leaves, grass or litter;
- \* watering lawn and plants using hose, water can or by activating fixed or portable sprinkler system;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

**93121** *Gardener*  
**93122** *Cutter, grass*  
**93123** *Cutter, tree*  
**93124** *Ground maintenance worker*  
**93125** *Golf course worker*  
**93126** *Labourer, landscape*

**9319 AGRICULTURAL AND FISHERY LABOURERS AND RELATED WORKERS NOT ELSEWHERE CLASSIFIED**

Agricultural and fishery labourers and related workers not elsewhere classified perform a variety of simple forestry, fishery, hunting and trapping tasks.

**Tasks include:**

- \* digging holes for tree planting;
- \* stacking logs and timber;
- \* clearing undergrowth in forest stands;
- \* cleaning up landing areas at logging sites;
- \* cleaning the sea-bed and feeding fish and molluscs that are being cultivated;
- \* digging pits and holes, setting traps, keeping watch and performing other simple tasks connected with hunting and trapping;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

**93191** *Labourer, fishery*  
**93192** *Labourer, forestry*  
**93193** *Labourer, hunting*  
**93194** *Labourer, trapping*

**932 MANUFACTURING LABOURERS AND RELATED WORKERS**

Manufacturing labourers and related workers perform simple and routine tasks connected with manufacturing which require the use of simple hand-held tools and mainly considerable physical effort.

## **9321 RUBBER PROCESSING WORKERS**

Rubber processing workers process raw rubber latex in factories.

### **Tasks include:**

- \* coagulating latex with acid and water;
- \* tending milling machine which rolls coagulated rubber into sheets or scrap rubber into crepe rubber sheets;
- \* tending smokehouse to cure and dry milled rubber sheets;
- \* tending furnace in smokehouse for drying of rubber sheets;
- \* clipping and sorting rubber sheets according to quality;
- \* operating crushing and crumbing machines to process rubber into blocks of special quality;
- \* cleaning and preparing latex tanks and aluminium partitions used for coagulating rubber latex;
- \* performing related tasks;
- \* supervising other workers.

### **Examples of the occupations classified here:**

- 93211 Rubber coagulator*
- 93212 Sheet rubber maker*
- 93213 Attendant, smokehouse/rubber*
- 93214 Smokehouse stoker*
- 93215 Rubber sheet clipper and sorter*
- 93216 Cleaner, latex tank*
- 93217 Heavecrumb process worker*
- 93218 Operator, laminating-machine/rubber*

## **9329 MANUFACTURING LABOURERS AND RELATED WORKERS NOT ELSEWHERE CLASSIFIED**

Manufacturing labourers and related workers not elsewhere classified in Minor Group 932: Manufacturing Labourers and Related Workers perform a variety of simple routine tasks connected with the manufacturing sector such as product sorting, hand packing and simple hand assembling of components.

### **Tasks include:**

- \* carrying out manual sorting of products or components;
- \* carrying out simple assembling of components;
- \* packing materials or products by hand in boxes, bags, cartons, crates, kegs and other containers for shipment or storage;
- \* moving, lifting, carrying, loading, unloading or washing raw materials or products in various manufacturing industries or repair and maintenance of establishments;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 93291 *Labourer, manufacturing*
- 93292 *Sorter*
- 93293 *Winder, coil/hand*
- 93294 *Labourer, assembling*
- 93295 *Labeller, hand*
- 93296 *Packer, hand*
- 93297 *Washer, hand/manufacturing*

**933 MINING AND CONSTRUCTION LABOURERS AND RELATED WORKERS**

Mining and construction labourers and related workers perform simple and routine tasks connected with mining or construction, requiring the use of simple hand-held tools and considerable physical effort.

**9331 MINING AND QUARRYING LABOURERS**

Mining and quarrying labourers perform simple and routine tasks in connection with mining or quarrying.

**Tasks include:**

- \* washing gauge on palong to recover tin concentrate using dulang (pan);
- \* maintaining or constructing underground installations;
- \* removing wood and steel supports from disused workings in mines and quarries;
- \* loading, moving, sorting and piling materials and supplies;
- \* digging out chalk, clay, gravel or sand from open pits;
- \* clearing various obstructions as instructed;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

- 0 *Labourer, mining*
- 1 *Labourer, quarrying*

**9332 CONSTRUCTION AND MAINTENANCE LABOURERS**

Construction and maintenance labourers perform simple and routine tasks in connection with various aspects of construction and maintenance of buildings and other construction.

**Tasks include:**

- \* digging and filling holes and trenches, spreading gravel and related materials and performing other tasks related to the building and maintenance of railway tracks and roads;
- \* cleaning used building bricks and doing other simple work on demolition sites;
- \* clearing various obstructions as instructed;
- \* carrying bricks and mortar to bricklayer on construction site;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

93321 *Labourer, construction*  
93322 *Labourer, maintenance*  
93323 *Labourer, digging*  
93324 *Land clearer*  
93325 *Trackman, railway*  
93326 *Handyman*  
93327 *Labourer, demolition*  
93378 *Hod carrier*

**934 TRANSPORT LABOURERS AND RELATED WORKERS**

Transport labourers and related workers carry out freight handling by hand, move materials or products within an establishment, drive animal-drawn vehicles or pedal trishaws and similar vehicles.

**9341 MATERIAL AND FREIGHT HANDLING WORKERS**

Material and freight handling workers carry out tasks such as packing, carrying, loading and unloading furniture and other household items, or loading and unloading ship and aircraft cargoes and other freight, or carrying and stacking goods in various warehouses.

**Tasks include:**

- \* packing office or household furniture, machines, appliances and related goods to be transported from one place to another;
- \* conveying materials from or about work area in an industrial establishment;
- \* assisting in tying down loads and covering them with tarpaulins;
- \* carrying goods to be loaded on or unloaded from vans, trucks, wagons, ships or aircraft;
- \* guiding truck drivers into loading bays or through confined spaces;
- \* loading and unloading grain, coal, sand and similar goods by placing them on conveyor-belts, pipes, etc.;
- \* 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;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

93411 *Stevedore/docker*  
93412 *Handler, cargo*  
93413 *Loader, railway and road vehicles*  
93414 *Loader, aircraft*  
93415 *Loader, boat (liquid and gases)*  
93416 *Attendant, lorry*  
93417 *Porter, warehouse*  
93418 *Handler, material*

### **9342 PEDAL VEHICLE DRIVERS/TRISHAW PEDALLERS**

Pedal vehicle drivers/trishaw pedallers propel cycles and similar vehicles to transport passengers or goods.

**Tasks include:**

- \* loading or unloading 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;
- \* making minor repairs and keeping vehicle in good order;
- \* collecting fares or charges;
- \* performing related tasks;
- \* supervising other workers.

**Example of the occupations classified here:**

*93420 Driver, pedal vehicle*

### **9343 DRIVERS OF ANIMAL-DRAWN VEHICLES AND MACHINERY**

Drivers of animal-drawn vehicles and machinery drive animal-drawn vehicles to transport passengers or goods, as well as animal-drawn machinery usually in connection with farming.

**Tasks include:**

- \* harnessing animals and hitching 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;
- \* making minor repairs and keeping vehicles in good order;
- \* performing related tasks;
- \* supervising other workers.

**Examples of the occupations classified here:**

*93431 Driver, animal-drawn vehicle or machinery*

*93412 Driver, bullock-cart*

## **MAJOR GROUP 0: ARMED FORCES**

Members of the armed forces are those personnel who are currently serving in the armed forces and who are not free to accept civilian employment. Included are regular members of the army, navy, air force and other military services. Excluded are persons in civilian employment of government establishments concerned with defence issues; police (other than military police); customs inspectors and members of border or other armed civilian services, and members of military reserves not currently on active service. Reference to a skill level has not been used in defining the scope of this major group.

### **011 ARMED FORCES**

Armed Forces perform tasks contributory to the defence of the sovereign state.

#### **0110 ARMED FORCES**

Armed Forces perform tasks contributory to the defence of the sovereign state.

#### **0110 ARMED FORCES**

Armed Forces provide collective defence measures to protect Malaysian waters, land, airspace and other interests.

#### **Tasks include:**

- \* providing forces that are able to repulse any threat to the sovereign state;
- \* operating armoured vehicles, artillery, hand-held weapons and other military combat equipment and defence systems;
- \* patrolling the exclusive economic zone to discourage intrusion and poaching;
- \* controlling the selection and training of staff;
- \* maintaining trained forces to provide military and technical assistance, surveillance activities, search and rescue and disaster relief operations, whenever required;
- \* engaging in peacekeeping operations and enforcing cease-fire agreements;
- \* participating in ceremonial duties;
- \* performing related tasks;
- \* supervising other workers.

#### **Example of the occupations classified here:**

*01100 Armed Forces*