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## GOVERNMENT NOTICE

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### DEPARTMENT OF HIGHER EDUCATION AND TRAINING

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4 November 2014

#### LIST OF OCCUPATIONS IN HIGH DEMAND: 2014

I, Bonginkosi Emmanuel Nzimande, MP, Minister of Higher Education and Training,  
hereby publish the List of Occupations in High Demand: 2014.



DR BENZIMANDE, MP

MINISTER OF HIGHER EDUCATION AND TRAINING

DATE: 27/10/2014

**LIST OF OCCUPATIONS IN HIGH DEMAND: 2014**

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**LIST OF OCCUPATIONS IN HIGH DEMAND: 2014**



**higher education  
& training**

Department:  
Higher Education and Training  
REPUBLIC OF SOUTH AFRICA

**ACRONYMS AND ABBREVIATIONS**

ABET	Adult Basic Education and Training
DHA	Department of Home Affairs
DHET	Department of Higher Education and Training
DPRU	Development Policy Research Unit
DoL	Department of Labour
DTI	Department of Trade and Industry
EDD	Department of Economic Development
FET	Further Education and Training
HRD	Human Resource Development
HRDC	Human Resource Development Council
HRDCSA	Human Resource Development Council of South Africa
HSRC	Human Sciences Research Council
ICT	Information and Communications Technology
IT	Information Technology
IPAP	Industrial Policy Action Plan
JIPSA	Joint Initiative on Priority Skills Acquisition
JOUR	Job Opportunities and Unemployment Report
NDP	National Development Plan
NGP	New Growth Path
NSDS	National Skills Development Strategy
NSFAS	National Student Financial Aid Scheme
SETA	Sector Education and Training Authority
SIPs	Strategic Integrated Projects
SSP	Sector Skills Plan
TTT	Technical Task Team
OFO	Organising Framework for Occupations

## TABLE OF CONTENTS

1. INTRODUCTION .....	4
2. PURPOSE.....	4
3. LIFESPAN OF LIST .....	5
4. KEY CONCEPTS .....	5
5. UTILITY .....	6
6. PROCESSES FOLLOWED IN COMPILING THE LIST.....	6
7. FINAL CONSULTATIONS ON THIS PUBLICATION .....	7
8. INFORMATION SOURCES .....	9
9. KEY FINDINGS .....	10
10. SCORING OF OCCUPATIONS .....	14
11. EXPLANATION OF THE LIST OF OCCUPATIONS IN HIGH DEMAND.....	16
12. LIST OF OCCUPATIONS IN DEMAND: 2014.....	17
13. APPENDIX: CLUSTER OF OCCUPATIONS .....	20
14. REFERENCES.....	26

## 1. INTRODUCTION

- 1.1 The White Paper for Post-School Education and Training (DHET, 2013a) asserts that “if the provision of education and training is to be better coordinated with the needs of society and the economy, central information about skills needs is required”. It emphasises that “identifying current and future skills demand as accurately as possible is extremely important if the goals of the National Development Plan, the New Growth Path and the Industrial Policy Action Plan are to be achieved”.
- 1.2 The White Paper (DHET, 2013a) notes further that the identification of skills needs should be used to inform, *inter alia*, human resource planning, funding allocations, programme development, and immigration strategies.
- 1.3 The Human Resource Development Strategy of South Africa (HRDSA) 2010 – 2030 (RSA, 2009), emphasises the need for a national “scarce skills list”<sup>1</sup> which is aligned to South Africa’s social and economic priority goals.
- 1.4 The Immigration Amendment Act of 2011 (RSA, 2011) compels the Minister of Home Affairs to compile a “critical skills list”<sup>2</sup> to facilitate the issuing of work visas. It states that The Department of Home Affairs could draw on the “national scarce skills list” to compile its own “critical skills” list.
- 1.5 Numerous reports have drawn attention to the problems experienced by Government, as well as the private sector, in implementing planned growth strategies, fast-tracking service delivery and producing high quality products and services owing to a lack of skilled people.
- 1.6 It is evident from the above, that information about skills needs is of vital importance for a variety of reasons. These imperatives have necessitated the Minister of Higher Education and Training to gazette this list of occupations in high demand.

## 2. PURPOSE

This document provides a list of occupations that have been identified as being in high demand at a national level. It is intended to inform decision-making in relation to a wide range of issues pertaining to skills planning and development, as indicated in Section 5 of this document.

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<sup>1</sup> This document uses the term “occupations in high demand”, instead of the commonly used term “scarce skills” because the former expresses the findings of this work more appropriately.

<sup>2</sup> The Department of Home Affairs uses the term “critical skills” to refer to what is commonly known as “scarce skills” or “occupations in high demand”.

### 3. LIFESPAN OF LIST

This list of occupations in high demand will be reviewed, and a revised list will be published in 2015. The revised list will reflect a strengthened methodology and will take into account new shifts in the labour market.

### 4. KEY CONCEPTS

- 4.1 **Occupation** refers to a set of jobs whose main tasks and duties are characterised by a high degree of similarity (DHET, 2013b). The occupations identified in the Organising Framework of Occupations (OFO) (DHET, 2013b) therefore represent a category that could encompass a number of jobs or specialisations. For example, the occupation “General Accountant” would also cover specialisations such as “Financial Analyst” and “Insolvency Practitioner”.
- 4.2 **Occupation in high demand** (in this document) refers to an occupation which meets the following criteria:
- a) it is listed as an occupation in the 2013 version of the OFO;
  - b) it is identified as being vitally needed and/or as a “scarce skill” for socio-economic growth and development of the country in the following documents: Scarce and Pivotal Skills Lists published by Sector Education and Training Authorities (SETAs) in 2013; The report of the Joint Initiative on Priority Skills Acquisition (The Presidency, 2010); the National Development Plan (National Planning Commission, 2012); Industrial Policy Action Plan 2012–15 (Department of Trade and Industry, 2012); Job Opportunities and Unemployment Report 2011-2012 (Department of Labour, 2013); Report on the Production of Professionals (HRDC, 2013); and the Strategic Integrated Projects (DHET, 2013c);
  - c) it qualifies for inclusion in terms of the scoring system used to compile the list, as described in Section 10 of this document; and
  - d) it is confirmed as being in high demand, based on information provided by interested parties through a public comment process.
- 4.3 **Organising framework of occupations** is a “coded occupational classification system” (DHET, 2013b) which aims to provide a title and code for every occupation that exists in South Africa. The 2013 version of the OFO identifies and classifies 1 448 occupations in South Africa. These occupations have been assigned 6 digit codes. The OFO also lists alternative titles for occupations, and records specialisations associated with relevant occupations. Occupations that have been clustered are assigned smaller digit codes. For example, “education manager”

represents a cluster of occupations and has been assigned a 4 digit code. The occupation “school principal” would fall under this category, but have a 6 digit code.

- 4.4 **Skill** refers to “the ability to carry out the tasks and duties of a given job” (DHET, 2013b). The OFO classifies skills by a combination of levels and specialisations, which makes it easy to locate a specific occupation within the framework.

## 5. UTILITY

- 5.1 The list of occupations in high demand can be used to support decision-making with respect to a range of issues, including:

- a) supply-side planning in post-school education and training institutions, as well as the workplace;
- b) skills development for special government projects such as the Strategic Integrated Projects;
- c) funding norms and the prioritisation of student funding through instruments such as the National Student Financial Aid Scheme (NSFAS);
- d) strategies to attract skilled personnel from outside of South Africa in the short to medium term;
- e) the development of qualifications and programmes that are relevant to the needs of society and the economy;
- f) sector, industry, regional and employer plans, and
- g) information for career advisory services.

## 6. PROCESSES FOLLOWED IN COMPILING THE LIST

The following processes were followed in compiling the list of occupations in high demand:

*Table 1: Processes followed in compiling the list of occupations in high demand*

<b>STEP 1</b>	Agreement on terms of reference for the compilation of List.
<b>STEP 2</b>	Establishment of an Advisory Committee to advise on the project.
<b>STEP 3</b>	Conduct research and prepare draft list.
<b>STEP 4</b>	Interview a sample of employer associations for verification
<b>STEP 5</b>	Presentation of draft findings to the Advisory Committee.
<b>STEP 6</b>	Review and revision of the document following feedback from the Advisory Committee.
<b>STEP 7</b>	Gazetting of the List for public comment.
<b>STEP 8</b>	Review of public comments and revisions to the List.
<b>STEP 9</b>	Publication of the final List.

## 7. FINAL CONSULTATION ON THIS PUBLICATION

7.1 Representatives from a number of organisations were consulted in the process of verifying the list of occupations in high demand, including: the Department of Home Affairs, the Department of Trade and Industry, the Department of Economic Development, the Department of Labour, the Human Sciences Research Council, the Department of Public Service and Administration, Development Policy Research Unit (University of Cape Town), the SA Institute of Electrical Engineers, the SA Institute of Steel Construction, several Sector Education and Training Authorities, the Engineering Council of South Africa and the Engineering Industries Federation of South Africa.

7.2 The Minister published the *National Scarce Skills: Top 100 Occupations in Demand List* for public comment on 23 May 2014 (Government Gazette No. 37678).

7.3 The Department received a total of 87 responses from the public. These have been categorised as follows:

➤ Professional and employer bodies	48
➤ Academic institutions/academics	16
➤ Individuals	12
➤ Other government departments	06
➤ DHET entities	04
➤ Other	01

7.4 The public comments received by the Department have generally been positive, with many organisations welcoming the publication of the list. The majority of respondents requested the inclusion of additional occupations in the list, while others questioned underlying methodological issues. Most responses can, in the main, be categorised as follows:

- a) 66 motivating for the need for the inclusion of additional occupations;
- b) 8 suggesting improvements to the methodology;
- c) 4 affirming the list and/or providing general comment;
- d) 3 indicating the need for greater alignment with the list of critical skills published by the Minister of Home Affairs; and
- e) Other.

7.5 The Department has considered each of the public comments received in depth, and has revised the Gazette (including the list of occupations in demand) following engagement with the public comments received.



7.6 In its consideration of the public comments received, the Department acknowledges the following:

- a) That it will not be possible to confine the list of occupations in demand to 100 as originally intended, owing to the need to include additional occupations, following strong motivations from the public. Consequently, the revised list is simply stated as “Occupations in High Demand”.
- b) That there is a need to seek improved synergy between the critical skills list published by the Minister of Home Affairs and that published by yourself – at the same time, acknowledging that both lists may not, of necessity, be exactly the same, owing to their different purposes.
- c) That the methodology to be used in compiling future iterations of the list of occupations in demand needs to be strengthened, particularly in relation to data sources and engagement with professional councils, business organisations and other government departments. In the meanwhile, the explanation for the methodology used in the compilation of the list has been improved and strengthened in the current Gazette.

## 1. INFORMATION SOURCES

8.1 A comprehensive and diverse range of information sources were employed and triangulated using a rigorous methodological approach, to establish the list of occupations in high demand. These sources listed below as follows:

- a) Report of the Joint Initiative on Priority Skills Acquisition (JIPSA), published by the Presidency in March 2010.
- b) The Scarce and Pivotal Skills Lists (2013/2014) compiled by SETAs.
- c) The Scarce Skills List compiled for the Strategic Integrated Projects (SIPs) by the Department of Higher Education and Training (DHET), in August 2013.
- d) The New Growth Path (2010) produced by the Department of Economic Development.
- e) The Industrial Policy Action Plan 2 2012/13 – 2014/15 (2012) developed by the Department of Trade and Industry.
- f) The National Development Plan (2012) developed by the National Planning Commission.
- g) The Human Resource Development Strategy for South Africa (2010) developed by the Human Resource Development Council of South Africa (HRDCSA).
- h) A report, Job Opportunities and Unemployment in the South African Labour Market 2011-2012 (2013) produced by the Department of Labour.
- i) A research paper: Key issues in improving the quantity and quality of professionals in South Africa produced by the HRDCSA (2012).
- j) A research paper: Occupational shifts and shortages: skills challenges facing the South African economy (2013) produced by the Development Policy Research Unit (DPRU).
- k) A research paper: Growth, employment and skills: the New Growth Path revisited (2013) produced by the DRPU.
- l) A report on salaries in South Africa (2013) produced by Career Junction.
- m) Group discussions and interviews were held with key professional bodies and other stakeholders in February 2014 to test preliminary findings.

## 9. KEY FINDINGS

9.1 **Joint Initiative on Priority Skills Acquisition (JIPSA):** JIPSA was established in 2006 as an initiative of the Accelerated and Shared Growth Initiative for South Africa, to deal with the supply of priority skills to the economy. It identified the following five priority skills areas for immediate attention:

- a) High-level, world-class engineering and planning skills for the “network industries”, namely transport, communications, water and energy;
- b) City, urban and regional planning and engineering skills;
- c) Artisanal and technical skills, with priority attention to infrastructure development, housing and energy, and in other areas identified as being in strong demand in the labour market;
- d) Management and planning skills in education and health; and
- e) Mathematics, science and language competence in public schooling.

In addition, JIPSA made proposals to prioritise skills initiatives in the fields of tourism, information and communication technology, business process outsourcing and bio-fuels. The priority skills defined in the JIPSA process were driven by the political imperative for infrastructure development and job creation. Over a four-year period, between 2006 and 2009, the JIPSA process laid important foundations for the future of human resource development in South Africa.

9.2 **Industrial Policy Action Plan 2012/13 – 2014/15 (IPAP 2):** IPAP 2 of the Department of Trade and Industry represents a crucial component of the overall industrial strategy of the country. It has identified 3 sectors for leveraging market growth and associated upgrading of supply capacity and capability:

- a) Green industry: the manufacturing of componentry inputs into the renewable energy generation programme and solar power heating and other industrial opportunities arising from requirements of high energy efficiency in the economy;
- b) Agro-processing: including expediting regulatory and support mechanisms to establish a large-scale bio-fuels industry; identification and promotion of export market opportunities in net food-importing countries; and product development and standards support; and
- c) Fabrication, capital and transport equipment: leveraging large-scale procurement in rail and electricity, providing associated upgrading support; and taking advantage of mining capital equipment investment locally and on the rest of the continent.

**9.3 National Development Plan (NDP):** The NDP (2010-2030) is an all-encompassing plan that offers a long-term perspective across all spheres of South African society. It identifies the role that different sectors should play in overcoming poverty and inequality and reducing unemployment, and the implications these have for skills development. It foregrounds the following in respect to skills needs:

- a) Public service delivery: The NDP highlights the fact that there are critical shortages of good-quality doctors, engineers, information technology professionals, forensic specialists, detectives, planners, accountants, prosecutors, curriculum advisors, among others, in the public service;
- b) Sustainable Livelihoods: provision of life skills programmes, entrepreneurship and community development programmes;
- c) Education and Training: increasing the pool of mathematics and science teachers at all levels in the system;
- d) Research and Development: increasing the pool of scientists in the country, including the number of PhDs, for knowledge production and innovation;
- e) Public infrastructure: increase the number of engineers, technologists, technicians and artisans to support the roll-out of public programmes; and
- f) Health professionals: increasing the number of doctors and nurses.

**9.4 New Growth Path (NGP):** The New Growth Path is a bold, imaginative and effective strategy to create the millions of new jobs South Africa needs. The strategy sets out critical markers for employment creation and growth and identifies where viable changes in the structure and character of production can generate a more inclusive and greener economy over the medium to long run.

- a) Engineers: Target at least 30 000 additional engineers by 2014, changing subsidy formulae for universities as appropriate;
- b) Artisans: Target at least 50 000 additional artisans by 2015, with annual targets for state-owned enterprises;
- c) Workplace skills: Improve skills in every job and target 1, 2 million workers for certified on-the-job skills improvement programmes annually from 2013;
- d) Further education and training (FET) colleges: Colleges have a central role in providing important middle-level skills for young people; and

- e) **Information and communications technology (ICT) skills:** The departments of education should ensure that computer skills are taught in all secondary schools and form part of the standard adult basic education and training (ABET) curriculum by 2015. All public servants should also receive ICT training.
- 9.5 **Strategic Integrated Projects (SIPs):** The South African Government adopted a National Infrastructure Plan in 2012, which aims to transform the economic landscape while simultaneously creating significant numbers of new jobs, and strengthening the delivery of basic services. Government will invest R827 billion in building new and upgrading existing infrastructures over the next three years. These investments will improve access to healthcare facilities, schools, water, sanitation, housing and electrification. On the other hand, investment in the construction of ports, roads, railway systems, electricity plants, hospitals, schools and dams will contribute to faster economic growth. This work has been organised into 18 Strategic Integrated Projects (SIPs) each of which has a dedicated SIP Coordinator to oversee the implementation and coordination of the numerous discrete projects that fall under each one. The skills shortages identified in SIPs relate mainly to the engineering and built environment fields. It notes that there is a dire shortage of engineers, technologists, technicians and artisans across a range of disciplines.
- 9.6 **Job Opportunities and Unemployment Report 2011-2012 (JOUR):** The Department of Labour (DoL) provides an analysis of the number of vacancies recorded in the print media against the claims it receives by unemployed persons in relation to the Unemployment Insurance Fund (UIF). The outcome of this analysis signals possible skills mismatches that may exist in the South African labour market. According to the JOUR, occupations with a high number of vacancies include: various types of managers, senior officials in the public sector, engineers, technicians, artisans, mathematics and science teachers and Information technology (IT) professionals.
- 9.7 **HRDC report on the Production of Professionals (2013):** The HRDC established a Technical Task Team (TTT) in 2013, to identify challenges related to the supply of professionals in South Africa, and for the development of interventions that could address certain shortfalls. The Task Team's report focuses on a number of professions, taking into account national needs, as well as skills scarcities. The report compares the numbers of skilled professionals in South Africa in relation to population size, with the ratios obtaining in a number of other, comparator countries. While there are certain caveats concerning the data, it is clear that there is a large gap with respect to the numbers of professionals in SA, which needs to be addressed. The HRDC report highlights the need for the production of professionals in the following fields: engineering, mining, health care and the built environment.

- 9.8 **SETA Scarce Skills List (2013):** A key requirement of SETAs is to identify and list scarce skills in the designated sector. The SETA scarce skills lists represent the research findings of SETAs and are approved by employers, as well as labour. The list of occupations identified by each of the 21 SETAs as being scarce, were scored and weighted in line with the methodology described in Section 10 of this document.
- 9.9 **Pivotal Skills List (2013):** In 2013, in addition to their sectorally-based scarce skills lists, SETAs also generated a pivotal skills list which refers to the top ten ranked occupations on the SETA Scarce Skills List. Pivotal skills are earmarked for the pivotal grant funding mechanism of the DHET. The list of ten occupations identified by each of the 21 SETAs as being “pivotal,” were scored and weighted in line with the methodology described in Section 10 of this document.
- 9.10 **Salary and Wage Analysis (2013/2014):** Salary and wage analysis was conducted to corroborate the list of occupations in high demand. The report produced by Career Junction indicates high salary and wage growth for occupations identified in the list, well above inflation in many instances. Wage growth was strong for engineers, project managers, medical personnel, artisans and IT professionals.

## 10. SCORING OF OCCUPATIONS

The methodology used to identify occupations in high demand involved the use of a scoring system to determine eligibility for the list. The following steps were followed in compiling the list:

- a) Identification of occupations that were stated in source documents as being “in need” or “scarce”.
- b) Assignment of points to each occupation, based on a 100-point rating scale as indicated in the scorecard in Table 2 below.
- c) Identification of the top 100 occupations in demand, based on occupations that scored the highest points.
- d) Inclusion of additional occupations to the list of 100, upon consideration of submissions made by interested parties (such as employer organisations, professional bodies, other government departments and academics), to the public call for comment on the draft list of occupations in demand (Government Notice 380 of 2014) .
- e) The following issues were considered in the allocation of weights and scores to the identified occupations:
  - Occupations with professional designations (such as engineers, quantity surveyors, doctors and teachers) were allocated a higher score because the literature internationally and domestically points to a high demand for such occupations globally. The latter is confirmed in a study conducted by the HRDC in 2012 on the demand for professions.
  - Some source documents (such as the NDP and IPAP 2) refer to clusters of occupations rather than actual occupations. In these instances, the identification of occupations was inferred; hence a lower score was allocated to occupations inferred from these sources in order to mitigate the risk of researcher bias.
  - Occupations identified by SIPs were weighted with 10 points because they relate mainly to infrastructure projects. It was necessary to minimise the risk of bias towards occupations focused on infrastructure development only.
  - Occupations listed in Pivotal Skills Lists produced by SETAs were allocated a maximum of 20 points because they were based on recent studies and focus directly on areas pivotal to the sector-wide economy.

*Table 2: Weighting Scorecard used to identify Occupations in High Demand*

NO	ALLOCATION OF POINTS	MAXIMUM SCORE
1	<b>SETA Scarce Skills List (2013):</b> 1 point is allocated to an occupation if it is identified in a specific SETA Scarce Skills List (21 SETAs).	10
2	<b>Pivotal Skills List (2013):</b> 2 points are allocated to an occupation if it is identified in a specific SETA Scarce Skills List (21 SETAs). The breakdown is as follows:	20
	Identified 5 times by SETAs	20
	Identified 4 times by SETAs	16
	Identified 3 times by SETAs	12
	Identified 2 times by SETAs	8
	Identified 1 time by a SETA	4
3	<b>JIPSA:</b> 10 points each are allocated to an occupation if it is identified in JIPSA.	10
4	<b>NDP:</b> 5 points are allocated to an occupation if it is identified in the NDP.	5
5	<b>IPAP2:</b> 5 points are allocated to an occupation if it is identified in IPAP2.	5
6	<b>Job Opportunities and Employment Report:</b> Points are allocated to an occupation if it is identified in the index. The breakdown is as follows:	10
	+1000 vacancies	10
	900-999 vacancies	9
	800-899 vacancies	8
	700-799 vacancies	7
	600-699 vacancies	6
	500-599 vacancies	5
	400-499 vacancies	4
	300-399 vacancies	3
	200-299 vacancies	2
	100-199 vacancies	1
7	<b>Profession:</b> 20 points are allocated to a profession if it is identified as scarce.	20
8	<b>SIPs:</b> 10 points are allocated to an occupation if it is identified as scarce in the SIPs List.	10
9	<b>Study Duration:</b> 10 points are allocated if an occupation requires a minimum of 3 years of formal study.	10
	<b>TOTAL</b>	<b>100</b>



## 11. EXPLANATION OF THE LIST OF OCCUPATIONS IN HIGH DEMAND

- a) The List of Occupations in High Demand: 2014 is listed in Table 3 below. This list includes both occupations as well as clusters of occupations as listed in the OFO. As indicated in Table 3, clusters of occupations are indicated with an asterisk.
- b) The specific occupations associated with each cluster are indicated in an Appendix, in order to avoid the list being unwieldy. The Appendix also provides alternative names for occupations where applicable.
- c) The list was compiled on the basis of the methodology described in the sections above.
- d) It should be noted that the occupations identified as being in high demand are not ranked relative to each other.
- e) This list is drawn up from a national perspective. There may be occupations not mentioned in this document that may be in high demand at provincial, local or sectoral levels.
- f) If an occupation is not included in this list, it should NOT be assumed that there is no need for such occupations in the economy.

## 12. LIST OF OCCUPATIONS IN HIGH DEMAND: 2014

*Table 3: List of occupations in high demand: 2014*

OCCUPATIONAL TITLE	OFO CODE
Medical Doctor	221*
Physical and Engineering Science Technicians	311*
Manufacturing Managers	1321*
Physicists and Astronomers	2111*
Meteorologists	2112*
Industrial and Production Engineers	2141*
Environmental Engineers	2143*
Telecommunications Engineers	2153*
Landscape Architects	2162*
Nursing Professionals	2221*
Dieticians and Nutritionists	2265*
Audiologists and Speech Therapists	2266*
Vocational or Further Education Teachers	2321*
Accountants	2411*
Software Developers	2512*
Ships' Deck Officers and Pilots	3152*
Medical Imaging and Therapeutic Equipment Technicians	3211*
Clearing and Forwarding Agents	3331*
Steam Engine and Boiler Operators	7182*
Earthmoving and Related Plant Operators	7342*
Local Authority Manager	111203
Finance Manager	121101
Personnel / Human Resource Manager	121201
Health and Safety Manager	121206
Corporate General Manager	121901
Programme or Project Manager	121905
Quality Systems Manager	121908
Sales and Marketing Manager	122101
Research and Development Manager	122301
Construction Project Manager	132301
Supply and Distribution Manager	132401
Logistics	132402
Chief Information Officer	133101
ICT Project Manager	133102
Medical Superintendent / Public Health Manager	134201
Environmental Manager	134901
Production/Operations Manager	134915
Retail Manager (General)	142103
Geologist	211401
Geophysicist	211402

**NOTE:**

1. (\*) Refers to a cluster of occupations within this OFO category. The attached Appendix lists specific occupations that fall under each of these clusters.
2. The occupations listed in Table 3 are not ranked relative to each other

OCCUPATIONAL TITLE	OFO CODE
Materials Scientist	211403
Actuary	212101
Statistician	212103
Medical Scientist	213110
Agricultural Scientist	213202
Air Pollution Analyst	213305
Water Quality Analyst	213306
Production Engineer	214103
Civil Engineer	214201
Civil Engineering Technologist	214202
Mechanical Engineer	214401
Mechanical Engineering Technologist	214402
Marine Engineer	214405
Chemical Engineer	214501
Chemical Engineering Technologist	214502
Mining Engineer	214601
Mining Engineering Technologist	214602
Metallurgical Engineer	214603
Metallurgical Engineering Technologist	214604
Petroleum Engineer	214607
Quantity Surveyor	214904
Agricultural Engineer	214905
Materials Engineer	214907
Materials Engineering Technologist	214908
Electrical Engineer	215101
Electrical Engineering Technologist	215102
Energy Engineer	215103
Energy Engineering Technologist	215104
Electronics Engineer	215201
Electronics Engineering Technologist	215202
Architect	216101
Industrial Designer	216302
Urban and Regional Planner	216401
Land Surveyor	216502
Public Health Physician	221103
Veterinarian	225101
Hospital Pharmacist	226201
Industrial Pharmacist	226202
Retail Pharmacist	226203
SHEQ Practitioner	226302
Occupational Therapist	226902
University Lecturer	231101
Mathematics Teacher (Grades 10 - 12)	232123
Mathematics Teacher (Primary)	233101
Natural Science Teacher (Grade 10-12)	233102
Foundational Phase School Teacher	234101
External Auditor	241104
Financial Investment Advisor	241301

OCCUPATIONAL TITLE	OFO CODE
Company Secretary	242203
Internal Auditor	242211
Careers Counsellor	242301
Occupational Instructor / Trainer	242402
ICT Systems Analyst	251101
Computer Network and Systems Engineer	252301
Network Analyst	252302
Draughtsperson	311801
Forestry Technician	314301
Ship's Engineer	315101
Valuer	331501
Registered Nurse (child and family health)	332102
Retail Buyer	332301
Supply Chain Practitioner	333905
Computer Network Technician	351301
Carpenter and Joiner	641501
Plumber (General)	642601
Air Conditioning and Mechanical Services Plumber	642701
Moulder	651101
Pressure Welder	651201
Welder	651202
Boiler Maker	651302
Metal Fabricator	651401
Rigger	651501
Toolmaker	652201
Fitter and Turner	652302
Automotive Motor Mechanic	653101
Diesel Mechanic	653102
Industrial Machinery Mechanic	653301
Electronic Pre-press Technical Worker	662101
Paper Sheet fed Offset Lithography Technician	662204
Metal Sheet fed Offset Lithography Technician	662205
Heatset Rotary Offset Lithography Technician	662210
Coldset Rotary Offset Lithography Technician	662211
Rotary Printing & Re-reeling Flexographic Machine Technician	662212
Mechanised Bookbinding Technician	662303
Mechanised Hard-cover Bookbinding Technician	662305
Electrician	671101
Electrical Installation Inspector	671102
Millwright	671202
Mechatronics Technician	671203
Electronic Instrument Trades Worker	672105
Automotive Electrician	672106
Melter	684913
Packaging Manufacturing Machine Minder	718304

**APPENDIX: CLUSTER OF OCCUPATIONS****1321 Manufacturing Managers**

132101 Manufacturer  
132102 Production / Operations Manager (Manufacturing)  
132104 Engineering Manager  
132105 Power Generation Production / Operations Manager

**2111 Physicists and Astronomers**

211101 Physicist  
*Astronomer/ Astrophysicist/ Biophysicist/ Crystallographer/ Medical Physicist/ Nanotechnology Engineering Technologists/ Nuclear Physicist*

**2112 Meteorologists**

211201 Meteorologist  
*Atmospheric Scientist/ Climate Scientist/ Climatologist/ Hydrometeorologist/ Weather Forecaster*

211402 Geophysicist

*Geophysical Scientist/ Hydrologist Marine Scientist/ Physical Oceanographer/ Seismologist*

**212103 Statistician**

*Biometrician/ Demographer/ Demographic Analyst/ Epidemiologist/ Geostatistician/ Population Analyst/ Reporting Analyst/ Statistical Analyst/ Statistical GIS Specialist/ Statistical Methodologist/ Statistical Modeller*

**2141 Industrial and Production Engineers**

214101 Industrial Engineer  
214102 Industrial Engineering Technologist  
214103 Production Engineer  
214104 Production Engineering Technologist

**2143 Environmental Engineers**

214301 Environmental Engineer  
214302 Environmental Impact and Restoration Analyst

**214405 Marine Engineer**

*Marine Architect/ Marine Designer/ Naval Architect*

214607 Petroleum Engineer

*Biofuels Engineer/ Biofuels/Biodiesel Technology and Product Development Managers / Gas Engineer/ Mud Engineer/ Natural Gas Engineer/Oil Refinery Engineer/ Petroleum Engineering Technologist/ Petrophysical Engineer*

**2153 Telecommunications Engineers**

215301 Telecommunications Engineer  
215302 Telecommunications Engineering Technologist  
215303 Telecommunications Network Engineer  
215304 Telecommunications Field Engineer

**2162 Landscape Architects**

216201 Landscape Architect  
*Garden Designer*

*Landscape Designer*  
*Landscape Planner*

## **221 Medical Doctors**

### **2211 Generalist Medical Practitioners**

221101 General Medical Practitioner

*Doctor/ General Practitioner (GP)/ Medical Practitioner/ Physician/ Primary Health Care Physician/ Sports Medicine Practitioner/ Sports Physician*

221102 Resident Medical Officer

*Medical Intern*

221103 Public Health Physician

### **2212 Specialist Medical Practitioners**

221201 Anaesthetist

*Anaesthesiologist/ Intensive Care Anaesthetist/ Medical Sedation Specialist/ Obstetric Anaesthetist/ Pain Management Specialist*

221202 Cardiologist

*Cardiac Imaging Fellow*

221203 Emergency Medicine Specialist

*Emergency Physician*

221204 Obstetrician and Gynaecologist

*Child Birth Specialist/ Gynaecological Oncologist Infant Care Medical Specialist/ Urogynaecologist*

221205 Ophthalmologist

*Eye Surgeon/ Medical Eye Specialist/ Ophthalmic Optician*

221206 Paediatrician

*Neonatologist/ Paediatric Thoracic Physician*

221207 Pathologist

*Clinical Cytopathologist/ Forensic Biologist/ Forensic Pathologist/ Forensic Scientist/ Forensic Toxicologist/ Immunologist*

221208 Psychiatrist

*Adolescent Psychiatrist/ Child Psychiatrist/ Forensic Psychiatrist/ Geriatric Psychiatrist/ Medical Psychotherapist/ Psychogeriatrician*

221209 Radiologist

*Diagnostic Radiologist/ Medical Imaging Specialist/ Nuclear Medicine Specialist/ Radiation Oncologist/ Sonologist*

221210 Specialist Physician (General Medicine)

*Cancer Specialist/ Clinical Geneticist/ Clinical Immunologist/ Clinical Oncologist/ Clinical Pharmacologist/ Diabetologist/ Endocrinologist/ Gastroenterologist/ Geriatrician/ Haematologist/ Infectious Diseases Specialist/ Intensive Care Medicine Specialist/ Intensive Care Specialist/ Intensivist/ Medical Specialist/ Musculoskeletal Physician/ Nephrologist/ Neurologist/ Palliative Medicine Specialist/ Pulmonary Specialist/ Renal Medicine Specialist/ Reproductive Endocrinologist/ Respiratory Medicine Physician/ Respiratory Physician/ Thoracic Medicine Physician Thoracic Medicine Specialist/ Venereologist*

221211 Surgeon

*Cardiothoracic Surgeon/ Ear, Nose and Throat Specialist/ Head and Neck Surgeon/ Industrial Medicine Specialist/ Laryngologist/ Neurosurgeon/ Occupational Medicine Specialist/ Orthopaedic Surgeon/ Otolaryngologist/ Otolologist/ Otorhinolaryngologist/ Paediatric Surgeon/ Plastic and Reconstructive Surgeon/ Preventive Medicine Specialist/ Rhinologist/ Sexual Health Physician/ Specialist In Rehabilitation Medicine/ Urologist/ Vascular Surgeon*

## **2221 Nursing Professionals**

222101 Clinical Nurse Practitioner

222102 Registered Nurse (Aged Care)

222103 Registered Nurse (Child and Family Health)

222104 Registered Nurse (Community Health)

222105 Registered Nurse (Critical Care and Emergency)

222106 Registered Nurse (Developmental Disability)  
222107 Registered Nurse (Disability and Rehabilitation)  
222108 Registered Nurse (Medical and Surgical)  
222109 Registered Nurse (Medical Practice)  
222110 Registered Nurse (Mental Health)  
222111 Registered Nurse (Preoperative)  
222112 Registered Nurse (Surgical)  
222113 Paediatrics Nurse  
222114 Nurse Educator  
222115 Nurse Researcher  
222116 Nurse Manager

**2265 Dieticians and Nutritionists**

226501 Dietician  
*Advisor Food Science / Technology/ Dietetic Consultant/ Health Advisor (Nutrition)/ Home Economist/ Nutritionist/ Sports Nutritionist*

226203 Retail Pharmacist  
*Community Pharmacist  
Dispensing Chemist  
Pharmacist Assistant*

**2266 Audiologists and Speech Therapists**

226601 Audiologist  
*Hearing Therapist  
Orthoepist*  
226602 Speech Pathologist  
*Language Therapist  
Speech Clinician  
Speech Therapist*

231101 University Lecturer  
*Assessment Advisor/ Internal Moderator/ Associate Professor/ College of Education Lecturer/ Lecturer/ Professor/ Tertiary Educator*

**2321 Vocational or Further Education Teachers**

232101 Accounting Teacher (Grades 10 - 12)  
232102 Agricultural Management Practices Teacher (Grades 10 - 12)  
232103 Agricultural Sciences Teacher (Grades 10 - 12)  
232104 Agricultural Technology Teacher (Grades 10-12)  
232105 Business Studies Teacher (Grades 10-12)  
232106 Civil Technology Teacher (Grades 10-12)  
232107 Computer Applications Technology Teacher (Grades 10 - 12)  
232113 Electrical Technology Teacher (Grades 10 - 12)  
232114 Engineering Graphics and Design Teacher (Grades 10 - 12)  
232117 Hospitality Studies Teacher (Grades 10 - 12)  
232118 Information Technology Teacher (Grades 10-12)  
232122 Mathematical Literacy Teacher (Grades 10 - 12)  
232123 Mathematics Teacher (Grades 10 - 12)  
232124 Mechanical Technology Teacher (Grades 10-12)  
232126 Physical Science Teacher (Grades 10-12)

232128 Tourism Teacher (Grades 10 - 12)

**2411 Accountants**

241101 Accountant (General)

*Bank Accountant/ Debtors Manager*

241102 Management Accountant

*Budget Accountant/ Cost Accountant/ Project Accountant*

241106 Accountant in Practice

241107 Financial Accountant

*Business Group Accountant*

*Company Accountant*

*Corporate Accountant*

241108 Forensic Accountant

*Investigating Accountant*

**2512 Software Developers**

251201 Software Developer

251202 Programmer Analyst

251203 Developer Programmer

**311 Physical and Engineering Science Technicians**

**3111 Chemical and Physical Science Technicians**

311101 Chemistry Technician

311102 Physical Science Technician

**3112 Civil Engineering Technicians**

311201 Civil Engineering Technician

311202 Surveying or Cartographic Technician

311203 Town Planning Technician

3113 Electrical Engineering Technicians

311301 Electrical Engineering Technician

311302 Electric Substation Operations Manager

311303 Energy Efficiency Technician

**3114 Electronics Engineering Technicians**

311401 Electronic Engineering Technician

**3115 Mechanical Engineering Technicians**

311501 Mechanical Engineering Technician

311502 Boilers and Pressure Vessels Inspector

311503 Aeronautical Engineering Technician

**3116 Chemical Engineering Technicians**

311601 Chemical Engineering Technician

**3117 Mining and Metallurgical Technicians**

311701 Mining Technician

311702 Metallurgical or Materials Technician

311704 Geophysical Technician

311705 Mine Ventilation Observer

311706 Rock Engineering Technician

311707 Strata Control Officer

**3118 Draughtspersons**

311801 Draughtsperson

**3119 Physical and Engineering Science Technicians not Elsewhere Classified**



311901 Forensic Technician (Biology, Toxicology)  
311902 Fire Investigator  
311903 Food and Beverage Technician  
311904 Manufacturing Technician  
311905 Industrial Engineering Technician  
311906 Environmental Engineering Technician

**3152 Ships' Deck Officers and Pilots**

315201 Ship's Master  
*Charter Boat Operator/ Dredge Master/ Harbour Pilot/ Launch Master/ Master Mariner/ Ship's Pilot/ Tug Master*  
315202 Ship's Officer  
*Deck Officer/ Ships Mate / Officer/ Ship's Navigating Officer*  
315203 Ship's Surveyor  
*Marine Engineer Surveyor/ Nautical Information Advisor/ Nautical Surveyor*  
315204 Marine Certification & Surveillance Manager  
315205 Boat Driver / Coxswain

**3211 Medical Imaging and Therapeutic Equipment Technicians**

321101 Medical Diagnostic Radiographer  
*Magnetic Resonance Technologist/ Mammographer/ Medical / Diagnostic Radiation Technologist/ Medical Imaging Technologist/ Radiographer/ X-Ray Darkroom Technician/ X-Ray Operator*  
321102 Medical Radiation Therapist  
*Medical X-Ray Technician/ Radiation Technologist / Therapist/ Radiotherapist*  
321103 Nuclear Medicine Technologist  
*Nuclear Radiographer/ Radiochemist/ Radioisotope Technician / Technologist*  
321104 Sonographer  
*Cardiac Ultrasound Technician/ Ultrasonographer*  
331501 Valuer  
*Asset Protection Manager/ Commercial Valuer/ Farm / Land Appraiser/ Plant and Machinery Valuer/ Property Valuer/ Real Estate Valuer/ Valuation Advisor / Analyst / Officer*

**3331 Clearing and Forwarding Agents**

333101 Clearing and Forwarding Agent  
*Cargo Agent/ Clearing Agent/ Commercial Support & Claims Coordinator (Cargo)/ Forwarding Agent/ Shipping Agent/ Shipping Agent Coordinator*

**7142 Plastic Products Machine Operators**

714201 Plastic Cable making Machine Operator  
714202 Plastic Compounding and Reclamation Machine Operator  
714203 Plastics Fabricator or Welder  
714204 Plastics Production Machine Operator (General)  
714205 Reinforced Plastic and Composite Production Worker  
714206 Rotational Moulding Operator (Plastics)  
714208 Plastics Manufacturing Machine Minder  
714209 Reinforced Plastics and Composite Trades Worker

**7342 Earthmoving and Related Plant Operators**

734201 Earthmoving Plant Operator (General)  
734202 Backhoe Operator  
734203 Bulldozer Operator  
734204 Excavator Operator

734205 Grader Operator  
734206 Loader Operator  
734207 Mulcher Operator  
734208 Tunnelling Machine Operator  
734209 Mobile Explosives Manufacturing Unit (MEMU) Operator  
734210 Scraper Operator  
734211 Dragline Operator  
734212 Railway Track Master  
734213 Road Roller Operator  
734214 Dump Truck Operator (Off-road)

718304 Packaging Manufacturing Machine Minder  
Carton Maker / Corrugated Board Manufacturing Machine Minder / Corrugated Board Printing and  
Finishing Machine Minder

**7182 Steam Engine and Boiler Operators**

718201 Boiler or Engine Operator \_  
*Air Compressor Operator/ Air-conditioning / Refrigeration Plant Operator/ Boiler Tender/ Marine  
Engine Driver/ Motorman / Motorwoman (Fluids Drilling)/ Ship's Boiler Operator/ Steam Boilerman  
Fireman/ Steam/ Engine Operator/ Stoker/ Thermal Plant Operator*

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