



Updating ANZSCO

Reflecting a modern Australian labour market



Scientific research
services

ANZSCO Comprehensive Review

Australian Bureau of Statistics

17/6/2024

ANZSCO [Preliminary] Proposed Changes

Version 2.0



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Essential Notes

The Australian and New Zealand Statistical Classification of Occupations (ANZSCO) describes all occupations for the Australian and New Zealand labour market.

The ABS has undertaken a comprehensive review of the Australian and New Zealand Standard Classification of Occupations (ANZSCO) to reflect the contemporary labour market and better meet stakeholders' needs. Public consultation rounds were held across 2023, with each round targeting selected occupations grouped by focus area.

Statistics New Zealand (Stats NZ) have elected not to participate in the current review and therefore occupation changes have only been considered in respect of the Australian labour market.

Updates to document

This document has been updated based on stakeholder feedback and further research. Minor updates have been made to a handful of occupations. The format of the document has also been updated to improve usability based on feedback received. A preliminary proposed changes document has been created for each of the 43 focus areas. Focus areas were designed to group occupations for consultation purposes only and will not be present in the classification structure.

The preliminary proposed changes presented do not include the full scope of not elsewhere classified categories (nec). Exclusion statements are incomplete and do not reference specific occupation locations within the classification. Outstanding nec categories, exclusion statements and final tweaks to occupations are currently being finalised in preparation for the release of the draft proposed classification in July on the ABS website. The July release will provide users with an opportunity to provide feedback on the structure of the proposed changes, before finalising the update for release by December 2024. These preliminary proposed changes documents are for information only.

Task lists

ABS recognises the potential of Artificial Intelligence (AI) to enhance our operations and efficiency. To this end, we have employed AI to assist in the creation of initial task lists. However, human experts are responsible for the final content, and AI serves as a tool, not a decision-maker. We value stakeholder input and incorporate it into our editing process placing importance on stakeholder submissions and other relevant research contributions.

Learn more about ANZSCO and the review at [Updating ANZSCO | Australian Bureau of Statistics \(abs.gov.au\)](https://abs.gov.au/anzSCO)

Occupations in the Scientific research services focus area include:

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About the focus area

The Scientific research services focus area covers occupations which require specialised knowledge and skills to:

- develop, implement and monitor strategies, policies, plans and activities in designated areas to conserve and protect natural and cultural heritage
- plan, organise, direct the operations of a research or production laboratory
- examine the anatomy, physiology and biochemistry of humans, animals and other living organisms to understand their function and interrelationships
- develop practical applications of experimental and research findings
- study the composition, structure and other physical attributes of the Earth's crust and the minerals contained in it
- study the chemical and physical properties of the universe
- study the physics and dynamics of the atmosphere to understand weather, climate and long-term climatic trends.

Summary of consultation

Stakeholders strongly advocated for the enhancement of scientific research occupations to better reflect emerging roles and address policy implications. Updates to these occupations centred around refining lead statement descriptions, to provide clarity to the scope of responsibility of the occupations.

139912 Environmental Manager

Existing	Proposed
<p>139912 Environmental Manager</p> <p>Plans, organises, directs, controls and coordinates the development and implementation of an environmental management system within an organisation by identifying, solving and alleviating environmental issues, such as pollution and waste treatment, in compliance with environmental legislation and to ensure corporate sustainable development.</p> <p>Skill Level: 1</p>	<p>139912 Environmental Manager</p> <p>Plans, organises, directs, controls and coordinates the development and implementation of an environmental management system within an organisation. Ensures corporate sustainable development or environmental sustainability by identifying, solving and alleviating environmental issues, such as invasive species, pollution and waste treatment or ecosystem restoration, in compliance with environmental legislation.</p> <p>Skill Level: 1</p> <p>Main Tasks:</p> <ul style="list-style-type: none"><li>• Implements environmental strategies, policies and practices within an organisation<li>• Ensures an organisation complies with relevant environmental legislation<li>• Assesses, evaluates, and monitors the sustainability and environmental impact of an organisation<li>• Analyses environmental performance data and reports back to an organisation with recommendations on best environmental and sustainability practices<li>• Plans the budgets, timelines and resources required to improve the sustainability performance of an organisation<li>• Plans and implements programs or regulations for the management, protection, restoration or recovery of marine life, wildlife, vegetation and other natural resources <p>Specialisation:</p> <ul style="list-style-type: none"><li>• Environment and Sustainability Manager

139913 Laboratory Manager

Existing	Proposed
<p>139913 Laboratory Manager</p> <p>Plans, organises, directs, controls and coordinates the operations of a research or production laboratory.</p> <p>Skill Level: 1</p>	<p>139913 Laboratory Manager</p> <p>Plans, organises, directs, controls and coordinates the operations of a research, medical or production laboratory to ensure quality standards are met and health and safety standards comply with regulatory frameworks.</p> <p>Skill Level: 1</p> <p>Main Tasks:</p> <ul style="list-style-type: none">• Implements, manages and oversees protocols and ensures health and safety standards in the laboratory comply with regulatory frameworks• Maintains laboratory equipment and inventory levels• Trains technicians on the proper use of equipment and safety procedures to follow in the laboratory• Manages the daily operations of a laboratory, including the supervision of employees and schedule of activities• Monitors and ensures all laboratory operations are performed according to specifications• Reviews the studies, tests and analysis performed in the laboratory• Plans, organises and coordinates the quality management processes within the laboratory

234211 Chemist

Existing

234211 Chemist

Studies the chemical and physical properties of substances, and develops and monitors chemical processes and production.

Skill Level: 1

Specialisations:

- Analytical Chemist
- Industrial Chemist

Proposed

234214 Chemist

Studies the chemical and physical properties of substances and identifies their practical uses. Develops and monitors chemical processes to create or improve products in industries such as pharmaceutical, manufacturing and agriculture.

Skill Level: 1

Main Tasks:

- Designs and conducts experiments to identify chemical composition, energy and chemical changes in natural substances and processed materials
- Researches and analyses the chemical composition, properties and structure of matter to develop or improve existing theories, methods and processes
- Ensures laboratory experiments in chemistry follow protocols and regulations, and meet quality control standards
- Studies, analyses and tests chemistry research processes for application in product improvement or development
- May develop and improve products, chemical formulas, methods and processes for use at an industrial scale
- May study, analyse and model the operations of a chemical plant

Specialisations:

- Analytical Chemist
- Industrial Chemist
- Quality Control Chemist

234212 Food Technologist

Existing	Proposed
<p>234212 Food Technologist</p> <p>Alternative Title:</p> <ul style="list-style-type: none">• Food Scientist <p>Develops new and improves existing food products, and sets standards for producing, packaging and marketing food.</p> <p>Skill Level: 1</p>	<p>234212 Food Technologist</p> <p>Analyses, develops and improves methods for the production, processing and preservation of existing and new food products and sets standards for producing, packaging and marketing food.</p> <p>Skill Level: 1</p> <p>Main Tasks:</p> <ul style="list-style-type: none">• Studies the properties of food to support the development of new products or to improve existing food products• Develops, manages and maintains quality systems for food processing• Designs and improves food processing and packaging methods to increase efficiency and reduce costs• Ensures food safety and quality by testing and analysing samples of raw materials, ingredients and finished products• Tests food products to ensure compliance with health regulatory frameworks and quality standards• Develops new methods for food preservation such as freezing, canning and drying• Conducts research to create new food products and improve the quality, safety and nutritional value of food <p>Specialisation:</p> <ul style="list-style-type: none">• Food Scientist

234213 Wine Maker

Existing	Proposed
<p>234213 Wine Maker</p> <p>Alternative Title:</p> <ul style="list-style-type: none">• Oenologist <p>Plans, supervises and coordinates the production of wine or spirits from selected varieties of grapes.</p> <p>Skill Level: 1</p>	<p>234213 Winemaker</p> <p>Alternative Title:</p> <ul style="list-style-type: none">• Oenologist <p>Plans, supervises and coordinates the production of wine or spirits from selected varieties of grapes.</p> <p>Skill Level: 1</p> <p>Main Tasks:</p> <ul style="list-style-type: none">• Studies, develops and improves models used in the processing and blending of wine to improve or create new products• Tests and monitors the quality of grapes at different stages of production to assess ripeness, sugar and acid content to identify the ideal time for harvesting• Liaises with vineyard personnel or contract growers to provide grapes and advises on how to maintain their integrity for processing• Conducts laboratory and taste tests on wine samples to study and improve wine quality• Plans and oversees the wine bottling process to ensure safety and quality standards are met

234311 Conservation Officer

Existing	Proposed
<p>234311 Conservation Officer</p> <p>Develops and implements programs and regulations for the protection of fish, wildlife and other natural resources.</p> <p>Skill Level: 1</p> <p>Specialisation:</p> <ul style="list-style-type: none">• Landcare Facilitator	<p>234311 Conservation Officer</p> <p>Alternative Title:</p> <ul style="list-style-type: none">• Environmental Officer <p>Develops and implements programs and regulations for the protection, restoration and recovery of aquatic life, vegetation, wildlife and other natural assets.</p> <p>Skill Level: 1</p> <p>Main Tasks:</p> <ul style="list-style-type: none">• Evaluates habitat, wildlife and fisheries needs, and formulates short-term and long-term management goals and objectives• Ensures compliance with laws and regulations to conserve aquatic life, vegetation, wildlife and other natural assets• Develops, reviews and manages policies, procedures and programs to achieve conservation and protection of natural assets• Coordinates and manages conservation and rehabilitation projects• Liaises with relevant rights holders and stakeholders in the development and implementation of conservation activities <p>Specialisation:</p> <ul style="list-style-type: none">• Landcare Facilitator

234312 Environmental Consultant

Existing	Proposed
<p>234312 Environmental Consultant</p> <p>Alternative Titles:</p> <ul style="list-style-type: none">• Environmental Adviser• Environmental Auditor• Environmental Officer <p>Analyses and advises on policies guiding the design, implementation and modification of government or commercial environmental operations and programs.</p> <p>Skill Level: 1</p>	<p>234312 Environmental Consultant</p> <p>Alternative Title:</p> <ul style="list-style-type: none">• Environmental Adviser <p>Analyses and advises on policies and practices guiding the design, implementation and modification of government or non-government environmental operations and programs.</p> <p>Environmental Officers are excluded from this occupation.</p> <p>Skill Level: 1</p> <p>Main Tasks:</p> <ul style="list-style-type: none">• Prepares environmental impact assessments for a wide range of development projects• Proposes solutions to mitigate the environmental impact of development projects• Reviews, develops, improves and implements environmental management strategies• Provides advice to improve the sustainability performance of organisations• Advises government and non-government organisations on environmental best practice <p>Specialisation:</p> <ul style="list-style-type: none">• Closure Planner

234313 Environmental Research Scientist

Existing	Proposed	
<p>234313 Environmental Research Scientist</p> <p>Alternative Title:</p> <ul style="list-style-type: none"> Environmental Scientist <p>Studies and develops policies and plans for the control of factors which may produce pollution, imbalance in or degradation of the environment.</p> <p>Skill Level: 1</p> <p>Specialisations:</p> <ul style="list-style-type: none"> Air Pollution Analyst Ecologist Land Degradation Analyst Water Quality Analyst 	<p>234315 Ecologist</p> <p>Studies the relationships between living organisms and the environment around them and develops plans for the restoration, preservation and enhancement of biodiversity.</p> <p>Skill Level: 1</p> <p>Main Tasks:</p> <ul style="list-style-type: none"> Studies interactions such as competition, cooperation and predation between species Investigates local and global ecosystems, including how species respond to environmental challenges and climate change Develops, plans and conducts field research and ecological monitoring surveys Utilises remote sensing and modelling to track ecosystems and predict the impact of biodiversity shifts in natural systems Researches how changes in habitat connectivity and patterns of natural and human disturbance impact species and biodiversity over time Provides advice on ecological restoration practices to repair ecosystems that have been degraded or damaged through natural processes or activities such as agriculture, construction, forestry and mining Plans, conducts and monitors reintroductions of locally extinct species 	<p>234316 Environmental Research Scientist</p> <p>Alternative Title:</p> <ul style="list-style-type: none"> Environmental Scientist <p>Researches environmental phenomena and studies and develops policies and plans for the control of adverse environmental factors and the protection, effective management, restoration and recovery of the environment.</p> <p>Ecologists are excluded from this occupation</p> <p>Skill Level: 1</p> <p>Main Tasks:</p> <ul style="list-style-type: none"> Studies, records and analyses atmospheric conditions, demographic characteristics and air, mineral, soil and water samples Examines the impact of human activity on the environment and creates plans to reduce these impacts Investigates the source of adverse environmental factors such as air and water pollution and land degradation Develops conservation and environmental rehabilitation plans to prevent, reduce or remediate the impacts of activities such as agriculture, construction, forestry and mining Develops and leads environmental sustainability projects Plans, conducts and manages environmental research and monitoring projects <p>Specialisation:</p> <ul style="list-style-type: none"> Water Quality Analyst

Existing	Proposed	
<p>234314 Park Ranger</p> <p>Assists in controlling a State or national park, scenic area, historic site, nature reserve, recreation area or conservation reserve in accordance with authorised policies and priorities.</p> <p>Skill Level: 1</p> <p>Specialisation:</p> <ul style="list-style-type: none"> Aboriginal and Torres Strait Islander Land and Sea Ranger 	<p>234317 Aboriginal and Torres Strait Islander Land and Sea Ranger</p> <p>Alternative Title:</p> <ul style="list-style-type: none"> Indigenous Australian Land and Sea Ranger <p>Combines traditional ecological knowledge with conservation training and western science to protect and manage land, sea and culture on the lands and waters on which they are culturally authorised to operate.</p> <p>Skill Level: 1</p> <p>Main Tasks:</p> <ul style="list-style-type: none"> Undertakes biodiversity monitoring and threatened species management programs using scientific techniques coupled with traditional ecological and cultural knowledge Conducts cultural burning and wildfire suppression Shares traditional skills and knowledge in partnership with research, education, philanthropic and commercial organisations to contribute to environmental research and activities Engages with visitors and community groups to facilitate traditional knowledge transfer and increase cultural awareness Provides cultural and heritage site management Undertakes weed and feral animal control and environmental regeneration activities Monitors waters and controls marine debris such as ghost nets May participate in biosecurity and fisheries compliance activities 	<p>234318 Park Ranger</p> <p>Assists in managing a state or national park, recreation area, public or private conservation reserve, marine park, scenic area, historic site, nature reserve or protected area in accordance with authorised policies and priorities.</p> <p>Aboriginal and Torres Strait Islander Land and Sea Rangers are excluded from this occupation.</p> <p>Skill Level: 1</p> <p>Main Tasks:</p> <ul style="list-style-type: none"> Implements policies and organises activities in designated parks and other areas to conserve and protect natural and cultural heritage Participates in management planning by providing environmental information and making inventories of plants, animals and items of cultural and heritage significance Constructs, installs and maintains park assets such as management trails, signage, walking tracks and visitor facilities Undertakes pest and weed, marine debris and fire management programs and may participate in wildfire responses Conducts rehabilitation, restoration and threatened species management programs to conserve and maintain park values and assets Provides visitor services and education about the park environment Monitors for and reports on activities such as illegal fishing or timber gathering May undertake compliance and enforcement activities

Existing

234411 Geologist

Studies the composition, structure and other physical attributes of the earth to increase scientific knowledge and to develop practical applications in fields such as mineral exploitation, civil engineering, environmental protection and rehabilitation of land after mining.

Skill Level: 1

Specialisations:

- Marine Geologist
- Palaeontologist

Proposed

234411 Geologist

Studies the composition, structure and other physical attributes of the Earth or other planetary bodies to increase scientific knowledge and to develop practical applications in fields such as mineral exploitation, civil engineering, space exploration, environmental protection and rehabilitation of land after mining.

Skill Level: 1

Main Tasks:

- Studies physical attributes of the surface and subsurface of the Earth or other planetary bodies
- Studies the different chemical and physical processes involved in the evolution of the Earth or other planetary bodies
- Collects Earth or planetary materials and analyses their composition, structure and other physical properties
- Studies and analyses the properties of reservoirs and deposits of resources, such as oil, gas, or minerals, to estimate their volumes and potential for extraction
- Estimates how rocks, fossils and other geological materials formed and infers their age and the conditions they formed in
- Builds an understanding of the evolution of the Earth or other planetary bodies and how it may impact upon people
- Studies and monitors the effects of anthropogenic processes such as resource extraction on Earth or other planetary bodies

Specialisations:

- Engineering Geologist
- Exploration Geologist
- Geochemist
- Mine Geologist
- Petrophysicist
- Project Geologist
- Research Geologist

234412 Geophysicist

Existing	Proposed
<p>234412 Geophysicist</p> <p>Studies the composition, structure and other physical attributes of the earth, locates minerals, petroleum or ground water, and detects, monitors and forecasts seismic, magnetic, electrical, geothermal and oceanographic activity.</p> <p>Skill Level: 1</p> <p>Specialisations:</p> <ul style="list-style-type: none">• Oceanographer• Seismologist	<p>234412 Geophysicist</p> <p>Studies the composition, structure and other physical attributes of the Earth or other planetary bodies, locates materials such as minerals, petroleum, ground water, and detects, monitors and forecasts seismic, magnetic, electrical, geothermal and oceanographic activity.</p> <p>Skill Level: 1</p> <p>Main Tasks:</p> <ul style="list-style-type: none">• Studies, measures and analyses seismic, gravitational, electrical, thermal, magnetic forces and other physical attributes of the Earth or other planetary bodies• Designs and improves methods and procedures for geophysical measurement, data collection and data processing• Plans, analyses and assesses geophysical surveys to assist in locating and understanding water, petroleum and other mineral-bearing sources• Studies the internal structure of the Earth or other planetary bodies to understand their composition and predict volcanic and tectonic activity and their associated risks• Studies the physical conditions and processes of oceans such as density, temperature, water currents and the interactions of the atmosphere and the ocean <p>Specialisation:</p> <ul style="list-style-type: none">• Oceanographer

234413 Hydrogeologist

Existing	Proposed
<p>234413 Hydrogeologist</p> <p>Monitors, measures, analyses and describes the earth's surface and groundwater resources and many aspects of the water cycle, including human use of water resources.</p> <p>Skill Level: 1</p>	<p>234413 Hydrologist</p> <p>Monitors, measures, analyses, models, describes and quantifies the Earth's underground and surface water systems and their interactions with the water cycle, including human use and management of water resources.</p> <p>Skill Level: 1</p> <p>Main Tasks:</p> <ul style="list-style-type: none">• Collects, analyses and interprets groundwater or surface water data• Studies the distribution and physical and chemical properties of surface water and groundwater• Identifies the location of groundwater reservoirs and other water bodies and assists in their exploration• Studies the quality of water and develops methods to ensure water is safe for human consumption or other applications• Assists in the planning and development of water supply to urban areas• Uses models to predict the impact of human activities such as mining and construction on groundwater and surface water, and advises on the avoidance or mitigation of those impacts <p>Specialisations:</p> <ul style="list-style-type: none">• Hydrogeologist• Groundwater Modeller

234511 Life Scientist (General)

Existing	Proposed
<p>234511 Life Scientist (General)</p> <p>Alternative Title:</p> <ul style="list-style-type: none">• Biologist (General) <p>Studies the origin, anatomy, physiology, reproduction and behaviour of living organisms and the ways in which they interact with the environment in which they live.</p> <p>Skill Level: 1</p>	<p>Retire occupation and merge residual with nec category (not yet finalised).</p>

234513 Biochemist

Existing	Proposed
<p>234513 Biochemist</p> <p>Studies the biochemistry of living organisms and the molecular structure and function of related components.</p> <p>Skill Level: 1</p> <p>Specialisations:</p> <ul style="list-style-type: none">• Enzyme Chemist• Protein Chemist	<p>Retire occupation and merge residual with nec category (not yet finalised).</p>

234514 Biotechnologist

Existing	Proposed
<p>234514 Biotechnologist</p> <p>Studies the anatomy, physiology and characteristics of living organisms and isolated biological molecules, and develops new materials for applying to a range of purposes.</p> <p>Skill Level: 1</p> <p>Specialisations:</p> <ul style="list-style-type: none">• Cell Geneticist• Molecular Biologist• Molecular Geneticist	<p>234514 Biotechnologist</p> <p>Studies the anatomy, physiology, genetics and characteristics of living organisms and isolated biological molecules to improve or develop new products and processes in a wide range of industries including agriculture, food production and medicine.</p> <p>Skill Level: 1</p> <p>Main Tasks:</p> <ul style="list-style-type: none">• Studies, analyses and manipulates genes to develop new drugs• Analyses and models large datasets of molecular and genomic sequences to identify patterns• Researches, develops and creates new products in biotechnology• Identifies and improves industrial use of genetic attributes of cells and organisms• Uses computational methods to develop new or improve existing software tools and algorithms used in the analysis of large datasets of biological data• Researches, develops and improves biodegradable materials• Genetically modifies crops to improve pest resistance and increase productivity <p>Specialisations:</p> <ul style="list-style-type: none">• Bioinformatician• Molecular Biologist

234515 Botanist

Existing	Proposed
<p>234515 Botanist</p> <p>Studies the anatomy, physiology, biochemistry and ecology of plants.</p> <p>Skill Level: 1</p> <p>Specialisations:</p> <ul style="list-style-type: none">• Plant Pathologist• Plant Physiologist• Plant Taxonomist	<p>234515 Botanist</p> <p>Studies the anatomy, physiology, biochemistry and ecology of plants.</p> <p>Skill Level: 1</p> <p>Main Tasks:</p> <ul style="list-style-type: none">• Studies and researches the life cycle of plants• Identifies, classifies and records plant species• Identifies and studies diseases and disorders of plants• Studies, researches and assesses the effect of environmental factors on plant growth and distribution• Manages botanical collections• Monitors plant populations and their distribution <p>Specialisation:</p> <ul style="list-style-type: none">• Plant Pathologist

234516 Marine Biologist

Existing	Proposed
<p>234516 Marine Biologist</p> <p>Studies the anatomy, physiology, functions, characteristics, behaviour and environments of all forms of life living in the sea and connected water bodies.</p> <p>Aquaculture or Fisheries Scientists are excluded from this occupation. Aquaculture or Fisheries Scientists are included in Occupation 234116 Aquaculture or Fisheries Scientist.</p> <p>Skill Level: 1</p>	<p>234516 Marine Biologist</p> <p>Studies the anatomy, physiology, functions, characteristics, behaviour and environments of all forms of life living in the sea and connected water bodies.</p> <p>Aquaculture or Fisheries Scientists are excluded from this occupation.</p> <p>Skill Level: 1</p> <p>Main Tasks:</p> <ul style="list-style-type: none">• Collects and analyses samples to assess environmental effects on marine life• Studies breeding patterns, physiological processes, behaviour and other characteristics of marine organisms• Estimates, monitors and manages populations of marine life• Assesses the impact of human activities on marine life• Develops, conducts and improves breeding programs to support endangered species of marine life

234517 Microbiologist

Existing	Proposed
<p>234517 Microbiologist</p> <p>Studies microscopic forms of life such as bacteria, viruses and protozoa.</p> <p>Skill Level: 1</p> <p>Specialisation:</p> <ul style="list-style-type: none">• Bacteriologist (Non-medical)	<p>234517 Microbiologist</p> <p>Studies the growth and characteristics of microorganisms such as bacteria, viruses, algae, fungi and protozoa and the effect they might have on plants, animals and environment.</p> <p>Medical Microbiologists are excluded from this occupation.</p> <p>Skill Level: 1</p> <p>Main Tasks:</p> <ul style="list-style-type: none">• Studies microorganisms in a range of environments to learn about their behaviour• Studies, identifies and monitors physiological and morphological characteristics of microorganisms• Develops and improves methods to prevent the spread of disease• Studies, analyses and grows microbe cultures for use in the food and drink or agriculture industry• Tests and analyses food, drink and related manufacturing processes to identify contamination• Establishes process and safety standards for the processing of food to prevent spoilage and illness

234521 Entomologist

Existing	Proposed
<p>234521 Entomologist</p> <p>Studies the anatomy, physiology, characteristics, ecology, behaviour, environments, and impact of insects.</p> <p>Skill Level: 1</p> <p>Specialisations:</p> <ul style="list-style-type: none">• Entomologist (Biosecurity)• Medical Entomologist	<p>234521 Entomologist</p> <p>Studies the anatomy, physiology, characteristics, ecology, behaviour, environments, and impact of insects.</p> <p>Skill Level: 1</p> <p>Main Tasks:</p> <ul style="list-style-type: none">• Collects, analyses and classifies insect specimens• Develops and conducts experimental studies with insects• Studies the characteristics of insects and their interactions with other animals and their environment• Estimates, monitors and manages insect populations• Investigates and assesses risks posed by insects• Plans insect control programs and creates risk mitigation strategies to protect the environment and human health <p>Specialisations:</p> <ul style="list-style-type: none">• Entomologist (Biosecurity)• Medical Entomologist

234522 Zoologist

Existing	Proposed
<p>234522 Zoologist</p> <p>Studies the anatomy, physiology, characteristics, ecology, behaviour, and environments of animals.</p> <p>Skill Level: 1</p>	<p>234522 Zoologist</p> <p>Studies the anatomy, physiology, characteristics, ecology, behaviour, and environments of animals.</p> <p>Entomologists are excluded from this occupation.</p> <p>Skill Level: 1</p> <p>Main Tasks:</p> <ul style="list-style-type: none">• Studies animal characteristics, development, physiology, behaviour and movement patterns in controlled and/or natural habitats• Studies the impact of human activity on animal life• Collects, analyses and records animal specimens• Assesses and manages wildlife populations and their habitat• Studies living and extinct animals in order to understand their evolution and behaviour• Researches any possible threats from disease and pollution in the animal life and their habitat

234912 Metallurgist

Existing	Proposed
<p>234912 Metallurgist</p> <p>Researches, develops, tests, controls and provides advice on processes used in extracting metals from their ores, and processes used for casting, alloying, heat treating or welding refined metals, alloys and other materials to produce commercial metal products or develop new alloys, techniques and processes.</p> <p>Registration or licensing may be required.</p> <p>Skill Level: 1</p> <p>Specialisation:</p> <ul style="list-style-type: none">• Welding Engineer	<p>234918 Extractive Metallurgist</p> <p>Researches, develops, tests, controls and provides advice on processes used in extracting metals from their ores, and processes used for casting, alloying or heat treating metals to produce commercial products or develop new alloys, techniques and processes.</p> <p>Physical Metallurgists and Welding Engineers are excluded from this occupation.</p> <p>Skill Level: 1</p> <p>Main Tasks:</p> <ul style="list-style-type: none">• Applies physical and chemical methods to separate and concentrate valuable minerals and metals from ores• Designs process, flowsheets and metallurgical plant processes used to extract metals and minerals from ores• Manages process, metallurgical, smelter and refinery plant operational performance• Produces metal and mineral concentrates and refined or alloyed metals for market• Analyses, develops, produces and improves the quality and purity of metals and alloys• Develops and improves control methods to store and treat waste material produced in extractive metallurgical processes

234913 Meteorologist

Existing	Proposed
<p>234913 Meteorologist</p> <p>Studies the physics and dynamics of the atmosphere to increase understanding of weather and climate, and to forecast changes in the weather and long-term climatic trends.</p> <p>Skill Level: 1</p> <p>Specialisations:</p> <ul style="list-style-type: none">• Climatologist• Weather Forecaster	<p>234913 Meteorologist</p> <p>Studies the physics and dynamics of the atmosphere to increase understanding of weather and climate, and to forecast changes in the weather and long-term climatic trends.</p> <p>Skill Level: 1</p> <p>Main Tasks:</p> <ul style="list-style-type: none">• Analyses and interprets weather data gathered from different sources like meteorological stations, radars and satellite imagery• Studies and analyses historical weather patterns to understand long-term trends and predict future climate scenarios• Provides short to medium-term weather forecasts to the general public• Studies the impact of weather on the environment and effects of human activity on the climate• Develops, tests and improves mathematical and computer models of the weather and climate• Prepares and issues warnings for atmospheric phenomena such as cyclones, storms, floods or other hazards to life and property <p>Specialisation:</p> <ul style="list-style-type: none">• Climatologist

Existing	Proposed	
<p>234914 Physicist</p> <p>Studies matter, space, time, energy, forces and fields and the interrelationship between these physical phenomena to further understanding of the laws governing the behaviour of the universe, and seeks to apply these laws to solve practical problems and discover new information about the earth and the universe.</p> <p>Skill Level: 1</p> <p>Specialisations:</p> <ul style="list-style-type: none"> • Astronomer • Medical Physicist 	<p>234916 Medical Physicist</p> <p>Undertakes research and provides advice on the safe and effective delivery of radiation as prescribed in patient care for radiation oncology, medical imaging and image-guided medical procedures.</p> <p>Registration or licensing may be required.</p> <p>Skill Level: 1</p> <p>Main Tasks:</p> <ul style="list-style-type: none"> • Conducts research and development in radiation oncology, medical imaging, image-guided medical procedures or medical radiation safety • Designs and performs ongoing quality assurance testing and evaluation for radiation oncology and diagnostic imaging equipment and systems • Consults with medical professionals on individual patients' radiation treatment using external radiation beams, internally placed radioactive sources and radioactive substances • Provides advice on balancing image quality, personnel and patient radiation dose and associated risks in radiology and nuclear medicine imaging • Applies knowledge of physics to the development and use of medical radiation treatments, devices, and technologies that may be used for diagnosis and treatment of human diseases • Provides scientific and technical advice on the design of radiation facilities and the safe handling, storage and disposal of radioactive materials 	<p>234917 Physicist</p> <p>Studies matter, space, time, energy, forces and fields and the interrelationship between these physical phenomena to further understanding of the laws governing the behaviour of the universe and seeks to apply these laws to solve practical problems and discover new information about the Earth, the universe, and space weather.</p> <p>Medical Physicists are excluded from this occupation.</p> <p>Skill Level: 1</p> <p>Main Tasks:</p> <ul style="list-style-type: none"> • Conducts research to develop and improve theories and laws related to physics • Develops methods and procedures to study, identify or characterise physical phenomena • Studies the relationship between place and time related to celestial bodies • Applies physics theories and techniques in the development and improvement of scientific, industrial, and military applications • Calculates, models and analyses physical and astronomical data • Develops scientific models or theories to explain properties exhibited by the natural world • Predicts and monitors solar flares, solar wind conditions, ionospheric irregularities or geomagnetic and ionospheric storms <p>Specialisation:</p> <ul style="list-style-type: none"> • Astronomer

272414 Archaeologist

Existing	Proposed
<p>272414 Archaeologist</p> <p>Studies human activity in the past, primarily through the recovery and analysis of the material culture and environmental data left behind, which includes artifacts, architecture, biofacts and cultural landscapes (the archaeological record).</p> <p>Skill Level: 1</p>	<p>272414 Archaeologist</p> <p>Studies human activity in the past, primarily through the recovery and analysis of the material culture and environmental data left behind, which includes artefacts, architecture, biofacts and cultural landscapes (the archaeological record).</p> <p>Skill Level: 1</p> <p>Main Tasks:</p> <ul style="list-style-type: none">• Cleans, examines, records and preserves archaeological finds and sites• Collects, analyses and interprets data from artefacts and archaeological sites• Uses methods such as aerial photography and remote sensing techniques to locate archaeological sites• Collects information and produces simulations to recreate the way a site or artefact would have looked in the past• Assesses archaeological sites for resource management, development or conservation purposes• Recommends methods for archaeological site protection

311411 Chemistry Technician

Existing	Proposed
<p>311411 Chemistry Technician</p> <p>Alternative Title:</p> <ul style="list-style-type: none">Chemistry Technical Officer <p>Performs laboratory tests on organic and inorganic chemicals, analyses test data and carries out technical functions in support of Chemists or Chemical Engineers in a wide variety of areas such as fuels, agricultural products, food, pharmaceuticals, paints, metals, plastics, textiles, detergents, paper, fertilisers, and cosmetics.</p> <p>Skill Level: 2</p> <p>Specialisations:</p> <ul style="list-style-type: none">Chemical Instrumentation OfficerChemical Process AnalystChemistry Laboratory TechnicianDairy Laboratory TechnicianPetroleum Laboratory TechnicianSugar Laboratory Assistant	<p>311411 Chemical Technician</p> <p>Performs laboratory tests on organic and inorganic chemicals, analyses test data and carries out technical functions in support of Chemists or Chemical Engineers in a wide variety of areas such as fuels, agricultural products, food, pharmaceuticals, paints, metals, plastics, textiles, detergents, paper, fertilisers, and cosmetics.</p> <p>Fire Assayers are excluded from this occupation.</p> <p>Skill Level: 2</p> <p>Main Tasks:</p> <ul style="list-style-type: none">Assists in setting up and conducting chemical experiments, tests and analysis on organic and inorganic chemicals according to existing proceduresAssists in the fabrication, installation and modification of chemistry equipment to ensure it meets standardsCollects samples from production batches and tests them for impurities and defectsSets up and maintains chemistry laboratory equipment, instruments and inventoryAssists in monitoring the quality of products and processes at chemical manufacturing facilities to ensure they meet standards and specificationsUndertakes a limited range of technical activities to support chemical research <p>Specialisations:</p> <ul style="list-style-type: none">Chemistry Laboratory TechnicianDairy Laboratory Technician

311412 Earth Science Technician

Existing

311412 Earth Science Technician

Alternative Title:

- Earth Science Technical Officer

Collects and tests earth and water samples, records observations, and analyses data in support of Geologists or Geophysicists.

Skill Level: 2

Specialisations:

- Earth Science Laboratory Technician
- Geochemical Laboratory Technician
- Geological Technical Officer
- Geoscience Laboratory Technician
- Meteorological Observer
- Seismology Technical Officer
- Soil Science Technical Officer
- Water Resources Technical Officer

Proposed

311412 Earth Science Technician

Collects and tests earth and water samples, records observations, and analyses data in support of Geologists, Geophysicists and other earth scientists.

Skill Level: 2

Main Tasks:

- Assists in the collection, preparation, testing and analysis of rock, soil and water samples
- Calibrates and maintains testing equipment used by earth scientists
- Assists Geologists, Geophysicists and other earth scientists in the analysis of data
- Supports earth scientists in practical field operations by planning field work, arranging access to sites and ensuring supplies and equipment are available for field surveys
- Conducts surveys on field sites and other areas of interest
- Collects, records and analyses weather conditions information

Specialisations:

- Earth Science Laboratory Technician
- Geology Technician
- Geoscience Laboratory Technician
- Geotechnician
- Meteorological Observer

311413 Life Science Technician

Existing

311413 Life Science Technician

Alternative Title:

- Life Science Technical Officer

Identifies and collects living organisms and conducts field and laboratory studies in support of Life Scientists or Environmental Scientists.

Skill Level: 2

Specialisations:

- Biological Technical Officer
- Botanical Technical Officer
- Ecological Technical Officer
- Environmental Technical Officer
- Forestry Technical Officer
- Forestry Technician
- Wood Technologist
- Zoology Technical Officer

Proposed

311413 Life Science Technician

Identifies, collects and tests living organisms and conducts field and laboratory studies in support of Life Scientists, Medical Scientists or Environmental Scientists.

Registration or licensing may be required.

Fisheries Technical Officers are excluded from this occupation.

Skill Level: 2

Main Tasks:

- Assists in the collection and identification of living organisms
- Assists in maintaining records of collected specimens
- Assists with experiments conducted on living organisms and analysis of data collected about them
- Provides technical services and support for scientists in several fields including biology, agriculture, and environmental science
- Examines and collects body fluids or tissue from animals for scientific analysis or veterinary inspection
- Observes and records the health and behaviour of animals in laboratories, veterinary clinics and agricultural settings

Specialisations:

- Biological Technical Officer
- Environmental Technical Officer
- Forestry Technician
- Microbiology Analyst
- Veterinary Technician

311415 Hydrographer

Existing	Proposed
<p>311415 Hydrographer</p> <p>Measures, analyses and maintains the flow and quality of water in rivers, lakes, stormwater and sewage, and surveys and maps oceans, seas and rivers.</p> <p>Skill Level: 2</p>	<p>311415 Hydrographer</p> <p>Alternative Titles:</p> <ul style="list-style-type: none">• Hydrographic Technician• Water Monitoring Officer <p>Measures, analyses and maintains the flow and quality of water in rivers, lakes, stormwater and sewage, and assists with surveying and mapping oceans, seas and rivers.</p> <p>Hydrographic Surveyors are excluded from this occupation.</p> <p>Skill Level: 2</p> <p>Main Tasks:</p> <ul style="list-style-type: none">• Performs routine mathematical calculations and assists in undertaking measurements for surveying and charting bodies of water• Installs, calibrates and maintains hydrography equipment to monitor water levels and flow, meteorology, sediments and water quality• Assists in the collection of water surveying data such as coastline identification, bed relief or depth and heights of water in oceans, rivers or lakes using navigation systems• Measures the depth of water bodies and monitors turbidity and the accumulation of silt• Uses underwater acoustic equipment to establish and monitor tidal data and outline coastlines

312912 Metallurgical or Materials Technician

Existing	Proposed	
<p>312912 Metallurgical or Materials Technician</p> <p>Tests techniques, procedures, applications of equipment and materials as part of processing and refining and/or research into metals, ceramics, polymers and other materials.</p> <p>Registration or licensing may be required.</p> <p>Skill Level: 2</p> <p>Specialisations:</p> <ul style="list-style-type: none"> • Non-destructive Testing Technician • Petroleum Products Laboratory Technician • Petroleum Refinery Laboratory Technician • Pressure Testing Technician • Ultrasound Technician • Welding Engineering Technician 	<p>312917 Metallurgical or Materials Technician</p> <p>Tests techniques, procedures, applications of equipment and materials as part of processing and refining and/or research into metals, ceramics, polymers and other materials.</p> <p>Non-Destructive Testing (NDT) Technicians are excluded from this occupation</p> <p>Skill Level: 2</p> <p>Main Tasks:</p> <ul style="list-style-type: none"> • Obtains, measures and prepares ore samples for testing • Reviews and approves welding procedures • Conducts metallurgical laboratory test work to troubleshoot performance and advise on how to improve manufacturing techniques • Inspects, measures and assesses the quality and strength of welds to ensure they comply with standards and specifications • Assists metallurgists and other professionals in the use of complex equipment for metal production <p>Specialisations:</p> <ul style="list-style-type: none"> • Fire Assayer • Welding Engineering Technician • Welding Inspector (Non-NDT) 	<p>312918 Non-Destructive Testing Technician</p> <p>Alternative Title:</p> <ul style="list-style-type: none"> • NDT Technician <p>Uses non-destructive testing (NDT) techniques to examine and test the functionality and performance of objects, structures, or materials without damaging or affecting their functionality.</p> <p>Registration or licensing may be required.</p> <p>Skill Level: 2</p> <p>Main Tasks:</p> <ul style="list-style-type: none"> • Uses non-destructive testing techniques to study the properties of materials and structures • Uses non-destructive testing techniques to test materials at all stages of a manufacturing or construction process • Tests and identifies products flaws and structural weaknesses using non-destructive testing techniques • Conducts non-destructive tests to determine where corrosion may occur and how it will spread • Calibrates and maintains non-destructive testing equipment