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Latest release

Sub-major Group

24 Design, Engineering and Science Professionals

OSCA - Occupation Standard Classification for Australia

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24 Design, Engineering and Science Professionals

Design buildings, landscapes and products for manufacture and visual communication, design, plan and organise the testing, construction and maintenance of structures, machines, production systems and plants, and perform analytical, conceptual and practical tasks in relation to the chemical and physical properties of the universe, living organisms and the environment.

OSCA skill level

The occupations in this sub-major group have a skill level corresponding to the qualifications and experience below.

- Skill Level 1: Bachelor Degree, higher qualification, or at least five years of relevant experience

Minor Group

241 Architects, Planners and Surveyors

Design buildings, urban areas and landscapes, conduct survey work to precisely position geographical features, prepare and revise maps, and develop and implement plans and policies for controlling the use of land.

OSCA skill level

The occupations in this minor group have a skill level corresponding to the qualifications and experience below.

- Skill Level 1: Bachelor Degree, higher qualification, or at least five years of relevant experience

Unit Group

2411 Architects, Landscape Architects and Urban Designers

Design commercial, industrial, institutional, residential and recreational buildings, landscapes and urban areas.

OSCA skill level

The occupations in this unit group have a skill level corresponding to the qualifications and experience below.

- Skill Level 1: Bachelor Degree, higher qualification, or at least five years of relevant experience

Occupation

241131 Architect

Plans and designs residential and multi-residential, commercial and industrial buildings.

Provides concepts, plans, specifications and detailed drawings. Negotiates with builders and consultants, and advises on the procurement of buildings.

Registration or licensing is required.

Specialisations

- Conservation or Heritage Architect
- Design Architect
- Project Architect

Skill level: 1

Main tasks

- Works with clients, engineers, consultants and other stakeholders to determine their requirements and objectives for architectural projects

- Develops detailed, innovative, sustainable and functional architectural designs, taking into consideration social, environmental and economic concerns
- Conducts site inspections to assess project feasibility and submit town planning designs for permits
- Addresses requests for information as part of contract administration from consultants, engineers and other stakeholders involved in the building construction process
- Evaluates and selects appropriate building materials, finishes and systems to achieve sustainability objectives
- Completes design tasks (3D modelling) in accordance with project and client design briefs
- Utilises building information modelling (BIM), and applies relevant building regulations and codes to manage the planning and design of building projects

Occupation

241132 Landscape Architect

Plans, designs and manages natural and built environments by applying aesthetic and scientific principles to address ecological sustainability, preserve cultural heritage, and enhance the quality and health of landscapes.

Landscape Designers are excluded from this occupation. Landscape Designers are included in Occupation 312134 Landscape Designer.

Skill level: 1

Main tasks

- Designs, plans, manages and maintains projects for new developments, heritage protection, preservation of natural and cultural landscapes, and the rehabilitation of degraded landscapes
- Prepares landscape documentation including drawings, specifications, schedules and contract documents, and calls for tenders on behalf of clients
- Conducts research and analysis to develop sustainable landscape designs, planning and management practices, methods and development strategies
- Conducts feasibility studies and impact assessments to assess the impact of development upon the ecology, environmental character, cultural values and community health and welfare of landscapes
- Collects and documents data through site analysis, considering indigenous practices, landform, soils, vegetation, hydrology, visual characteristics, and human-made and managed features
- May provide expert advice and advocacy on landscape matters in conflict resolution, judicial courts and commissions

Occupation

241133 Urban Designer

Designs and plans the spatial form and layout of cities, towns, suburbs and precincts, considering the relationship between urban systems and social, environmental and economic needs.

Skill level: 1

Main tasks

- Designs and plans the division of land and layout of cities, towns and suburbs to integrate public spaces, infrastructure, buildings, streets and parks
- Performs site analysis using spatial data, and analyses the physical, cultural, social and environmental characteristics of sites to inform urban design projects
- Produces documents such as master plans, performs feasibility studies, and creates urban design guidelines
- Creates detailed drawings and plans utilising artistic and graphic skills to convert concepts into technical drawings using software, such as computer-aided design (CAD)
- Works with design and planning teams, and negotiates with stakeholders and consultants to shape urban places
- Creates or contributes to policy, standards and guidelines that affect the built environment
- Advises state and local governments about the potential impacts of development proposals on regions, cities or places

Unit Group

2412 Geospatial Information Professionals and Surveyors

Plan, direct and conduct survey work to determine and delineate boundaries and features of tracts of land, construction projects, marine floors and underground works, prepare and revise maps, charts and other geographic products, and analyse, present and maintain geographical information about locations in space and time.

Building Surveyors, Marine Surveyors and Quantity Surveyors are excluded from this unit group. Building Surveyors are included in Occupation 241931 Building Surveyor. Marine Surveyors are included in Occupation 313433 Marine Surveyor. Quantity Surveyors are included in Occupation 241932 Quantity Surveyor.

OSCA skill level

The occupations in this unit group have a skill level corresponding to the qualifications and experience below.

- Skill Level 1: Bachelor Degree, higher qualification, or at least five years of relevant experience

Occupation

241231 Cartographer

Applies scientific, mathematical and cartographic design principles to prepare and revise maps, charts and other forms of cartographic output.

Skill level: 1

Main tasks

- Collects, researches and analyses geographic data for map and chart creation
- Utilises geographic information systems (GIS) to organise and analyse spatial data
- Creates and updates digital maps and charts using computer software
- Prepares reports and presentations for cartographic communication

Occupation

241232 Engineering Surveyor

Inspects, evaluates, measures, sets-out and monitors infrastructure and construction works to ensure structures are built to plan.

Registration or licensing may be required.

Specialisation

- Construction Surveyor

Skill level: 1

Main tasks

- Measures, sets-out and monitors construction projects, including high rise buildings, roads, tunnels, airports and other forms of infrastructure, to ensure they are built in accordance with design specifications
- Performs surveys, fieldwork, calculations, data reduction and manipulation on construction sites using specialised software and technical equipment, such as theodolites, global positioning systems (GPS), lasers, and aerial and terrestrial scanners

- Completes as-constructed survey reports and plans to confirm a construction project conforms to the intended design and specifications
- Prepares data models for set-out and machine guidance to assist in planning, executing, monitoring and evaluating surveying work
- Works with construction professionals, Architects, property owners, and Civil Engineers to provide accurate survey information for project planning and design phases

Occupation

241233 Geospatial Specialist

Acquires, integrates, analyses, interprets, presents, manages and distributes information about locations in time and space, and develops related equipment, software and services.

Specialisations

- Geospatial Analyst
- GIS Consultant
- GIS Manager

Skill level: 1

Main tasks

- Gathers geospatial data through satellite imagery, aerial photography, GPS, surveys and other sources
- Cleans, organises and formats geospatial data for analysis
- Uses geospatial technology such as GIS to analyse spatial data to describe and infer trends and patterns, solve problems and answer spatial data-related queries
- Communicates findings and insights from geospatial data using reports, dashboards and interactive maps to technical and non-technical stakeholders
- Develops and maintains databases and information systems for geospatial data management

Occupation

241234 Land Surveyor

Locates and defines public and private land boundaries by using precise measuring equipment.

Registration or licensing may be required.

Specialisation

- Registered or Licensed Land Surveyor

Skill level: 1

Main tasks

- Uses specialised technical equipment, such as theodolites, GPS, lasers, and aerial and terrestrial scanners, to take, record and collate measurements and locations in relation to land boundaries
- Establishes site horizontal and vertical height data
- Determines the position of boundaries of public or private land, and prepares plans and associated documents
- Develops and establishes reference systems for geographic and land information
- Consults with other professionals such as Architects and engineers, to ensure land development projects are completed to plan
- Works with government officials and other stakeholders to ensure that land development projects are completed in compliance with regulations and local laws
- Sets-out land and building developments
- May map out positions of boundaries where land is subdivided, bought or sold, and plan and provide critical professional advice for project developments in land and buildings

Occupation

241235 Mine Surveyor

Designs and measures mines, tunnels and other underground works, maps out mineral deposits, and determines the commercial viability of open cut and underground mines. Registration or licensing may be required.

Skill level: 1

Main tasks

- Identifies limits for excavation purposes and marks drill patterns for blasting in open cut mines
- Determines, controls and maps the location and direction of tunnels in underground mines
- Establishes site horizontal and vertical height data
- Calculates the volume of materials moved or minerals mined
- Uses GIS to create site maps, including mine structures and deposit layers
- Identifies potential risks and environmental effects of mining activities

Occupation

241299 Geospatial Information Professionals and Surveyors nec

This occupation group covers Geospatial Information Professionals and Surveyors not elsewhere classified.

Registration or licensing may be required.

Skill level: 1

Occupations in this group include:

- Geodetic Surveyor
- Hydrographic Surveyor

Unit Group

2413 Urban and Regional Planners

Develop and implement plans and policies for the controlled use of urban and rural land, assess development and advise on economic, environmental and social factors affecting land use.

OSCA skill level

The occupations in this unit group have a skill level corresponding to the qualifications and experience below.

- Skill Level 1: Bachelor Degree, higher qualification, or at least five years of relevant experience

Occupation

241331 Urban and Regional Planner

Develops and implements plans and policies for the controlled use of urban and rural land, assesses development, and advises on economic, environmental and social factors affecting land use.

Specialisations

- Environmental Impact Assessment Planner
- Land Planner
- Statutory or Development Assessment Planner
- Strategic Planner (Urban and Regional)
- Town or Urban Planner

- Traffic and Transport Planner

Skill level: 1

Main tasks

- Conducts research and analysis to assess current land use patterns and trends
- Inspects sites to assess compliance with land use regulations and policies
- Consults with stakeholders such as government officials, community groups and developers, to gather input and feedback on land use plans
- Advises governments and organisations on urban and regional policy and resource planning
- Undertakes development assessments and prepares, reviews and evaluates environmental impact reports, incorporating digital spatial information to inform decision-making

Unit Group

2419 Other Architects, Planners and Surveyors

This unit group covers Architects, Planners and Surveyors not elsewhere classified. It includes Building Surveyors and Quantity Surveyors.

OSCA skill level

The occupations in this unit group have a skill level corresponding to the qualifications and experience below.

- Skill Level 1: Bachelor Degree, higher qualification, or at least five years of relevant experience

Occupation

241931 Building Surveyor

Reviews, analyses and assesses building plans for compliance to current building standards, and issues relevant legislative permits, certification and approvals.

Registration or licensing is required.

Alternative title

- Building Certifier

Skill level: 1

Main tasks

- Assesses and approves building permit applications to ensure compliance with building codes, local ordinances, zoning and contract specifications
- Undertakes, or directs Building Inspectors to undertake, critical stage inspections of buildings under construction to determine if the work complies with the development consent and legislative requirements
- Prepares a written record of building work inspected and documents details identifying non-compliant issues
- Enforces the requirements of building legislation by issuing written directions to fix non-compliant building work, providing building notices, and issuing or removing building orders
- Responds to enquiries or complaints from people affected by their decisions made when carrying out statutory functions
- Issues occupancy permits and certificates of final inspection upon the completion of building work if all requirements are met

Occupation

241932 Quantity Surveyor

Determines, analyses and manages the costs associated with construction projects, including the feasibility, design, construction and operation stages.

Registration or licensing may be required.

Specialisations

- Cost Engineer
- Cost Manager
- Cost Planner
- Estimating Manager

Skill level: 1

Main tasks

- Prepares cost estimates for construction projects based on varying levels of design
- Prepares detailed cost plans for budgetary control, including bills of quantities, and manages progress payments
- Monitors the project through the construction phases and adjusts cost based on variations

- Prepares tender documents and evaluates contractor bids
- Prepares tax depreciation reports
- Prepares replacement cost assessments for insurance purposes
- Engages with key stakeholders, including asset owners, financiers, Architects, builders, engineers and developers

Minor Group

242 Design Professionals

Design digital and graphic content for entertainment, information and visual communication, and design products and interior spaces for manufacture and construction. Urban Designers are excluded from this minor group. Urban Designers are included in Occupation 241133 Urban Designer.

OSCA skill level

The occupations in this minor group have a skill level corresponding to the qualifications and experience below.

- Skill Level 1: Bachelor Degree, higher qualification, or at least five years of relevant experience

Unit Group

2421 Digital Designers

Plan, design and develop user interfaces and user experiences, websites and other digital content for a range of digital platforms.

Animators and Visual Effects Artists, Digital Game Developers, Graphic Designers and Illustrators are excluded from this unit group. Animators and Visual Effects Artists, Graphic Designers and Illustrators are included in Unit Group 2423 Graphic and Visual Content Designers. Digital Game Developers are included in Occupation 273131 Digital Game Developer.

OSCA skill level

The occupations in this unit group have a skill level corresponding to the qualifications and experience below.

- Skill Level 1: Bachelor Degree, higher qualification, or at least five years of relevant experience

Occupation

242131 Multimedia Designer

Plans, designs and produces digitally delivered information, promotional content, instructional material and entertainment through online and recorded digital media. Animators, instructional designers (education) and Web Designers are excluded from this occupation. Animators are included in Occupation 242331 Animator or Visual Effects Artist. Instructional designers (education) are included in Occupation 259331 Education Adviser. Web Designers are included in Occupation 242133 Web Designer.

Specialisation

- Instructional Designer (Multimedia)

Skill level: 1

Main tasks

- Plans and designs the layout and structure of digital multimedia projects for use in various media contexts such as advertising campaigns, educational presentations and social media material
- Uses specialised software, static and animated information, text, pictures, video and sound to produce content for an intended audience and purpose
- Develops multimedia prototypes, mock-ups and storyboards that incorporate voice, images and text
- Researches and selects appropriate software, tools and technologies for multimedia production

Occupation

242132 UI / UX Designer

Designs, develops and optimises the user interface and user experience of apps, websites or products, using digital tools, user research and consultation, interactive and visual design, and usability function and testing.

Alternative titles

- UI Designer
- User Experience Designer
- User Interface Designer
- UX Designer

Skill level: 1

Main tasks

- Conducts user requirement analysis and creates user flows, journey maps, personas, scenarios and task analysis to inform design decisions
- Creates new designs, including wireframes, prototypes and visual designs, for app and web user interfaces
- Plans, estimates and executes discovery and design processes using customer-centred design principles and usability testing methods
- Tests and rapidly translates research findings into design solutions
- Conducts discovery activities and workshops to gain quantitative and qualitative insights to improve apps and websites
- Aligns business goals and customer needs into digital strategies and designs
- Ensures that designs adhere to relevant guidelines or standards for accessibility

Occupation

242133 Web Designer

Plans, designs, develops and prepares information for websites using text, pictures, colours, layout and data sources to deliver information tailored to an intended audience and purpose.

Multimedia Designers, user experience designers and user interface designers are excluded from this occupation. Multimedia Designers are included in Occupation 242131 Multimedia Designer. User experience designers and user interface designers are included in Occupation 242132 UI / UX Designer.

Alternative title

- Website Designer

Skill level: 1

Main tasks

- Researches client needs, target audience and current web design trends
- Creates sketches or digital mock-ups of the website's layout, navigation and content placement
- Creates, reviews or redesigns existing wireframes to plan out the structure and functionality of the site
- Ensures website accessibility for all users, considering diverse abilities and devices

- Works closely with Web Developers to ensure that the final website looks and functions as intended
- Establishes design guidelines based on standards and best practices
- May identify and secure domain names for the websites

Unit Group

2422 Fashion, Industrial, Jewellery and Textile Designers

Plan, design, develop and document products for manufacture and prepare designs and specifications of products for mass, batch and one-off production.

OSCA skill level

The occupations in this unit group have a skill level corresponding to the qualifications and experience below.

- Skill Level 1: Bachelor Degree, higher qualification, or at least five years of relevant experience

Occupation

242231 Fashion Designer

Plans, designs and develops clothing, accessories, footwear or other items of personal apparel, considering the form and construction of clothing, historical styles and contexts, contemporary and cultural trends, colour, fabric and decoration, and the techniques and processes available for manufacture.

Skill level: 1**Main tasks**

- Liaises with clients to confirm design concepts and costs
- Prepares sketches, plans and samples of designs to present to clients
- Selects fabrics, colours and materials for designs
- Collaborates with patternmakers and sample makers
- Presents designs to clients, conducts fittings, and adjusts designs as necessary

Occupation

242232 Industrial Designer

Plans, designs, develops and documents industrial, commercial or consumer products for manufacture, and prepares designs and specifications of products for mass or batch production.

Alternative title

- Product Designer

Specialisations

- Furniture Designer
- Packaging Designer

Skill level: 1

Main tasks

- Undertakes product research and analyses functional, commercial, cultural and aesthetic requirements
- Generates ideas and concepts for new industrial products or product improvements
- Develops detailed design specifications and documentation for production of products such as toys, home appliances and furniture
- Creates design sketches, illustrations, models and samples for presentation to clients and manufacturers
- Selects, specifies and recommends functional and aesthetic materials, production methods and finishes for manufacture
- Prepares and commissions prototypes and samples
- Collaborates with engineers, manufacturers and product testers to ensure design feasibility and manufacturability

Occupation

242233 Jewellery Designer

Conceptualises and designs prototypes and details for the manufacture of jewellery and objects for personal adornment, such as pendants, rings, bracelets, necklaces, brooches, hair decorations and other decorative objects, using various precious and semi-precious metals, resins and gemstones.

Watch makers are excluded from this occupation. Watch makers are included in Occupation 332338 Watch and Clock Maker and Repairer.

Skill level: 1

Main tasks

- Designs and sketches jewellery and objects for personal adornment
- Develops detailed technical drawings and specifications for the manufacture of jewellery and decorative objects, including sculptures, lamp shades and vases
- Uses techniques such as repoussé, engraving, hand fabrication and casting, to model designs for mass or batch production, or one-off commissions
- Selects and sources materials such as metals, precious stones and plastics, for the production of jewellery pieces
- Collaborates with manufacturers and craftspeople to ensure the accurate production of designs
- Tests and evaluates the functionality and durability of each piece

Occupation

242234 Textile Designer

Creates and develops patterns, prints, textures and illustrations for the production of different kinds of cloth, material and fabric for garments and soft furnishings.

Fashion Designers are excluded from this occupation. Fashion Designers are included in Occupation 242231 Fashion Designer.

Skill level: 1

Main tasks

- Researches and prepares textile design concepts based on current trends, client needs and artistic insights
- Develops colour palettes that resonate with fabric design themes, and creates original patterns, prints, textures and illustrations for various types of cloth and fabric
- Chooses the appropriate fabric and yarn types based on specific designs
- Provides detailed specifications for production, such as yarn counts and weave structures, to ensure consistent output
- Creates prototype designs or samples using manual and digital techniques
- Tests and evaluates textile designs for quality, durability and functionality
- Collaborates with clients, design teams, manufacturers and suppliers to understand design requirements and specifications

Unit Group

2423 Graphic and Visual Content Designers

Plan, design and develop animation, pictures, diagrams, visual effects and other visual content for a variety of purposes.

Digital Game Developers, Multimedia Designers, UI / UX Designers and Web Designers are excluded from this unit group. Digital Game Developers are included in Occupation 273131 Digital Game Developer. Multimedia Designers, UI / UX Designers and Web Designers are included in Unit Group 2421 Digital Designers.

OSCA skill level

The occupations in this unit group have a skill level corresponding to the qualifications and experience below.

- Skill Level 1: Bachelor Degree, higher qualification, or at least five years of relevant experience

Occupation

242331 Animator or Visual Effects Artist

Designs and creates visual effects or animated content to conceptualise or enhance characters, scenes, backgrounds and other elements for film, television video games or other media.

Digital Game Developers are excluded from this occupation. Digital Game Developers are included in Occupation 273131 Digital Game Developer.

Specialisations

- 2D Animator
- 3D Animator
- 3D Artist (Animation)
- Animation or Visual Effects Supervisor
- Motion Designer
- VFX Artist

Skill level: 1

Main tasks

- Collaborates with directors, producers or other team members to understand the visual effects or animation requirements for a production
- Designs and creates visual effects, 2D or 3D animated elements, storyboards, frames, sequences and environments using digital art software

- Integrates visual effects and animated sequences with live-action footage or digital environments
- Troubleshoots and problem solves technical or creative issues that arise during the process of creating or integrating visual effects or animation
- May develop a sequence of key frames and character movements, providing a comprehensive visual script

Occupation

242332 Graphic Designer

Plans, designs, develops and prepares visual content for publication using text, symbols, pictures, colours and layout to achieve commercial and communication needs using traditional and digital tools, with particular emphasis on tailoring the message for the intended audience.

Alternative title

- Graphic Artist

Specialisations

- Creative Director (Graphic Design)
- Exhibition Designer

Skill level: 1**Main tasks**

- Consults with clients to determine their graphic design requirements
- Develops and collaborates on design concepts, and presents them to clients for approval
- Selects appropriate colours, images and fonts to enhance the visual appeal of designs
- Creates and manipulates designs for visual elements, such as logos, illustrations and graphics, using traditional and digital tools
- Collaborates with other team members, such as Copywriters and Web Developers, to ensure cohesive design solutions
- Prepares final designs for print or digital publication, reproduction and release

Occupation

242333 Illustrator

Plans, designs, develops and prepares pictures and diagrams to communicate messages, clarify meaning, assist in presentations and illustrate stories.

Specialisation

- Cartoonist

Skill level: 1

High levels of creative talent, interest and personal commitment may substitute for formal qualifications or years of experience.

Main tasks

- Creates visual concepts and develops illustrations for various purposes
- Collaborates with clients or art directors to determine the scope and requirements of illustration projects
- Researches and gathers reference materials to inform the design and development of illustrations
- Sketches preliminary ideas and concepts for illustrations
- Refines and finalises illustrations using traditional and digital media
- Uses drawing, painting, drafting, collage and other techniques to create illustrations
- Utilises image capture and manipulation software to enhance and modify illustrations
- Creates illustrations that effectively communicate messages and clarify meaning
- Adapts illustration styles and techniques to suit different projects and target audiences

Unit Group

2424 Interior Designers

Plan, design, detail and coordinate the construction of commercial, residential, institutional, recreational and temporary interior spaces to transform environments and improve their performance, experience, meaning or purpose.

Interior Decorators are excluded from this unit group. Interior Decorators are included in Occupation 391931 Interior Decorator.

OSCA skill level

The occupations in this unit group have a skill level corresponding to the qualifications and experience below.

- Skill Level 1: Bachelor Degree, higher qualification, or at least five years of relevant experience

Occupation

242431 Interior Designer

Plans, designs, details and coordinates the construction of commercial, residential, institutional, recreational and temporary interior spaces to transform an environment and improve its performance, experience, meaning or purpose.

Registration or licensing may be required.

Interior Decorators are excluded from this occupation. Interior Decorators are included in Occupation 391931 Interior Decorator.

Specialisations

- Commercial Interior Designer
- Residential Interior Designer
- Retail Interior Designer

Skill level: 1

Main tasks

- Consults and coordinates with clients, stakeholders, users and specialist consultants to determine objectives and constraints on interior design projects
- Researches and analyses spatial, functional, economic, ergonomic, comfort, safety, sustainability, inclusivity and aesthetic requirements of interior spaces
- Creates designs that encourage and facilitate optimal use of a space by inhabitants
- Generates presentations, renderings and 3D visualisations to illustrate interior design concepts
- Communicates ideas to clients, stakeholders and collaborators using CAD software and other visualisation tools to develop realistic representations of proposed interior designs
- Selects materials, finishes, furnishings and decorative elements to enhance the aesthetic appeal and functionality of the space
- Details and documents new interior building work for construction to comply with required building codes, standards and authorities
- Collaborates with Architects, contractors, vendors and suppliers to ensure that designs are executed according to specifications, budget and time constraints

Minor Group

243 Engineering Professionals

Design, plan and organise the testing, construction, installation and maintenance of structures, machines and their components, and production systems and plants, and plan

production schedules and work procedures to ensure engineering projects are undertaken efficiently and in a cost effective manner.

OSCA skill level

The occupations in this minor group have a skill level corresponding to the qualifications and experience below.

- Skill Level 1: Bachelor Degree, higher qualification, or at least five years of relevant experience

Unit Group

2431 Chemical and Materials Engineering Professionals

Design and prepare specifications for chemical process systems and the construction and operation of commercial-scale chemical plants, supervise industrial processing and fabrication of products undergoing physical and chemical change, develop and provide advice on processes used to extract metals from their ores, investigate the properties of metals, ceramics, polymers and other materials, and assess and develop their engineering and commercial applications.

OSCA skill level

The occupations in this unit group have a skill level corresponding to the qualifications and experience below.

- Skill Level 1: Bachelor Degree, higher qualification, or at least five years of relevant experience

Occupation

243131 Chemical Engineer

Designs and develops chemical process systems, equipment and specifications for the construction and operation of chemical plants and commercial-scale production, including transportation of chemicals, materials and energy. Supervises industrial processing and fabrication of products undergoing physical and chemical changes.

Registration or licensing may be required.

Specialisations

- Process Control Engineer
- Process Engineer (Chemical)

Skill level: 1

Main tasks

- Researches, designs, develops and improves chemical processes, process systems, reactions and materials
- Identifies ways to optimise performance of chemical equipment and processes while ensuring compliance with safety and environmental regulations
- Develops operating procedures, safety protocols and methods to deal with by-products and waste materials, and troubleshoots problems with chemical manufacturing processes
- Collaborates with plant designers to develop chemical plant specifications, equipment and control instruments for the production process
- Supervises the fabrication and installation of equipment and systems for chemical processes and transportation
- Monitors and analyses data from processes, and conducts research and experiments to develop new chemical processes and improve existing ones
- Provides technical support and guidance to staff involved in chemical processes and plant operations
- May use computer models to identify cost-effective production methods while minimising risks

Occupation

243132 Extractive Metallurgist

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.

Physical metallurgists and welding engineers are excluded from this occupation. Physical metallurgists and welding engineers are included in Occupation 243133 Materials Engineer.

Skill level: 1

Main tasks

- 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

Occupation

243133 Materials Engineer

Investigates the properties of metals, ceramics, polymers and other materials to assess and develop their engineering and commercial applications, such as in the design of composite materials, corrosion resistance and protection, and welding and fabrication.

Registration or licensing may be required.

Specialisations

- Corrosion Engineer
- Materials Welding Engineer
- Physical Metallurgist

Skill level: 1

Main tasks

- Researches and analyses the properties of various materials to produce new composite materials
- Tests materials under different conditions to examine their properties and behaviour to determine their use in various applications or in the development of new technologies
- Analyses the results of laboratory testing on faulty materials to determine the causes of material defects and develop solutions
- Studies the performance of materials to evaluate their deterioration rate under different conditions and identify main factors contributing to degradation
- Produces cost estimates and analyses the feasibility of using different materials in engineering projects
- Conducts analysis on welds to identify welding issues, associated risks, and provide or develop solutions and appropriate mitigation methods

Unit Group

2432 Civil Engineering Professionals

Design, plan, organise and oversee the construction of civil engineering projects such as dams, bridges, pipelines, gas and water supply schemes, sewerage systems, roads, airports and other structures, analyse the likely behaviour of soil and rock when placed under

pressure by proposed structures and design structural foundations, analyse the statical properties of all types of structures and test the behaviour and durability of materials used in their construction, and plan and develop transportation systems.

OSCA skill level

The occupations in this unit group have a skill level corresponding to the qualifications and experience below.

- Skill Level 1: Bachelor Degree, higher qualification, or at least five years of relevant experience

Occupation

243231 Civil Engineer

Plans, designs, organises and oversees the construction and operation of dams, bridges, pipelines, gas supply schemes, airports and other civil engineering projects.

Registration or licensing may be required.

Rail Engineers and Water Engineers are excluded from this occupation. Rail Engineers are included in Occupation 243233 Rail Engineer. Water Engineers are included in Occupation 243236 Water Engineer.

Specialisations

- Airfield Engineer Officer (Air Force)
- Coastal Engineer
- Construction Engineer
- Road Engineer

Skill level: 1

Main tasks

- Analyses site locations and conducts surveys to determine the feasibility and requirements of civil engineering projects
- Undertakes calculations, designs and develops specifications for civil engineering projects, and provides solutions to design-related issues
- Studies, evaluates and reports on the environmental implications of civil engineering projects to ensure compliance with existing regulations
- Determines construction methods, materials and quality standards for civil engineering projects

Occupation

243232 Geotechnical Engineer

Plans, directs and conducts survey work to analyse the mechanics of soil and rock, and its applications to engineering problems to support the safe and efficient design and construction of infrastructure projects.

Registration or licensing may be required.

Skill level: 1

Main tasks

- Assesses construction plans to determine its feasibility based on the understanding of the construction site gathered from geological maps, aerial photographs, project data, collected historical information and other sources
- Collects and tests soil and rock samples to determine their properties and assist in the assessment of geotechnical parameters used in design
- Assesses the impact of soil and rock mechanical properties on the stability of existing structures
- Performs geotechnical calculations and modelling to evaluate the characteristics of the site under study, and use the results from their analysis to design foundations and other geotechnical structures
- Investigates, identifies and analyses geological risks and hazards related to the site, such as landslides, liquefaction or soil erosion
- Develops strategies to minimise risks and recommend appropriate safety measures, such as drainage systems, soil improvement techniques and slope stabilisation methods, to incorporate in the project design

Occupation

243233 Rail Engineer

Plans, designs and develops rail tracks and support structures for rail systems to enable safe and optimised operations.

Registration or licensing may be required.

Rail Signalling Engineers are excluded from this occupation. Rail Signalling Engineers are included in Occupation 243332 Rail Signalling Engineer.

Specialisations

- Rail Track Engineer
- Rolling Stock Engineer

Skill level: 1

Main tasks

- Designs, plans and develops rail tracks and rail system infrastructure, and forecasts the cost of rail projects
- Identifies suitable rail routes to develop effective and sustainable rail systems that meet the needs of clients and communities
- Analyses issues or faults in rail systems and provides advice on suitable engineering solutions
- Ensures building work on rail projects complies with existing safety standards and regulations

Occupation

243234 Structural Engineer

Analyses, calculates and predicts the stability, strength and rigidity of built structures, tests the behaviour and durability of materials used in their construction, and designs and supervises the construction of all types of structures.

Registration or licensing may be required.

Alternative title

- Structural Design Engineer

Specialisations

- Bridge Engineer
- Facade Engineer
- Tunnel Engineer

Skill level: 1

Main tasks

- Calculates pressures, loads and stresses on structural foundations to ensure the safety of the construction
- Studies and analyses the strength of building materials to select and advise on the suitable ones for the construction
- Conducts structural inspections to evaluate the conditions and foundations, and assess the structural integrity
- Uses computer models to simulate and predict the structure's behaviour under varying conditions, such as high winds, flooding or earthquakes

- Researches and improves construction techniques and structural designs

Occupation

243235 Transport Engineer

Plans, designs and develops transport systems to optimise infrastructure efficiency, safety, and the cost effectiveness of moving people and freight.

Registration or licensing may be required.

Rail Engineers are excluded from this occupation. Rail Engineers are included in Occupation 243233 Rail Engineer.

Specialisation

- Traffic Engineer

Skill level: 1

Main tasks

- Designs, plans and evaluates transportation systems or parts of systems, such as highways, urban transit, ports, rail and airports
- Analyses traffic data to identify and predict future travel flow patterns, and conducts studies to determine the feasibility and costs of transportation projects
- Researches and analyses existing transport systems to identify needs and issues, and plans modifications to improve safety
- Uses computer models to simulate transport problems to identify suitable engineering solutions

Occupation

243236 Water Engineer

Plans, designs, researches, manages and oversees water-related engineering projects involving the supply of clean water, prevention of flood damage, and disposal of wastewater and sewage.

Registration or licensing may be required.

Coastal engineers and hydraulic engineers (mechanical) are excluded from this occupation. Coastal engineers are included in Occupation 243231 Civil Engineer. Hydraulic engineers (mechanical) are included in Occupation 243532 Mechanical Engineer.

Specialisations

- Hydraulic Engineer (Civil)
- Water and Wastewater Engineer
- Water Resources Engineer

Skill level: 1

Main tasks

- Plans, develops and improves water facilities and equipment, such as sewers, pipes and pumping stations
- Develops plans for controlling runoff and overland flow to minimise the risk of contamination of nearby bodies of water, such as rivers and lakes, by polluted water
- Studies water quality to identify and characterise sources of water pollution
- Uses computer models to simulate risks of flooding and propose engineering solutions
- Evaluates the operation and maintenance of water or wastewater systems to identify ways to improve their efficiency in a sustainable way
- Designs building features to ensure the supply or removal of fluids in a safe and efficient way
- Designs water or wastewater treatment plants, sewage systems, stormwater capture and treated water reuse schemes

Unit Group

2433 Electrical Engineering Professionals

Design, develop, implement and supervise the manufacture, installation, operation and maintenance of equipment, machines and systems used for the generation, distribution, utilisation and control of electric power, and develop systems used to signal and control trains.

OSCA skill level

The occupations in this unit group have a skill level corresponding to the qualifications and experience below.

- Skill Level 1: Bachelor Degree, higher qualification, or at least five years of relevant experience

Occupation

243331 Electrical Engineer

Designs, develops, implements and supervises the manufacture, installation, operation and maintenance of equipment, machines and systems used for the generation, distribution, utilisation and control of electric power from renewable and non-renewable sources.

Registration or licensing may be required.

Specialisations

- Electrical Design Engineer
- Grid Connection Engineer
- Power System Engineer
- Renewable Energy Engineer

Skill level: 1

Main tasks

- Plans, designs and tests power stations and equipment used for the generation, distribution, transmission and utilisation of electric power
- Develops new ways to store power generated by renewable and sustainable energy sources, such as solar, wind and sea
- Determines the type and arrangement of circuits, networks, transformers, circuit-breakers, transmission lines and other equipment
- Installs and tests electrical systems and processes
- Uses software and performs detailed calculations to plan, design and develop manufacturing, construction and installation standards and specifications to improve electrical systems
- Leads and coordinates electrical infrastructure projects in industries such as transportation, construction and manufacturing
- Provides technical expertise in electrical service design, ensuring compliance with industry standards and regulations
- May specialise in research in areas such as power generation and transmission systems, transformers, switchgear and electric motors, telemetry, and control systems
- May manage and integrate renewable energy sources, including battery storage, into the electricity grid

Occupation

243332 Rail Signalling Engineer

Develops systems used to signal and control trains, including equipment on tracks, computer networks and fail-safes. Controls railroad traffic by coordinating between systems and rail companies to keep trains operating safely and smoothly.

Registration or licensing may be required.

Rail Engineers are excluded from this occupation. Rail Engineers are included in Occupation 243233 Rail Engineer.

Alternative title

- Signalling Engineer

Skill level: 1

Main tasks

- Designs, implements and solves technical problems with rail signalling systems
- Provides technical advice and retrofits existing signalling systems to update them, either in response to regulations or to improve efficiency and performance
- Ensures that the rail signalling design conforms to all safety, environmental, construction, commissioning and operational requirements
- Prepares and reviews the signalling design with appropriate solutions to satisfy customer specifications, such as signalling arrangement plans, power calculations, headway signalling spacing calculations, and circuit designs
- Engages with stakeholders to discuss rail signal plans and prepares case studies to understand specifics of signalling installation
- Oversees the maintenance and operations of rail signalling equipment, and investigates equipment faults
- Assists the construction team with on-site signalling equipment installation, testing or commissioning
- Researches, develops and optimises electrical, control and signalling systems
- May oversee tender preparation, including ensuring all technical elements of the tender are coordinated between design, testing, commissioning and construction team members

Unit Group

2434 Electronics Engineers

Design, develop, adapt, install, test and maintain electronic components, circuits and systems used for computer, communication, command and warfare systems, entertainment, transport and other industrial applications.

OSCA skill level

The occupations in this unit group have a skill level corresponding to the qualifications and experience below.

- Skill Level 1: Bachelor Degree, higher qualification, or at least five years of relevant experience

Occupation

243431 Electronics Engineer

Designs, develops, adapts, installs, tests and maintains electronic components, circuits and systems used for computer, communication, command and warfare systems, entertainment, transport and other industrial applications.

Registration or licensing may be required.

Specialisations

- Combat System Engineer
- Control and Instrumental Engineer
- Hardware Engineer

Skill level: 1

Main tasks

- Analyses and prepares material costs, time estimates and design specifications for electronic systems and equipment, and ensures compliance with relevant regulations and standards in electronic engineering
- Develops operating standards for electronic systems and equipment
- Models and simulates processes for the development of new electronic devices
- Designs and integrates electronic circuits, components, systems and equipment for various applications
- Adapts and modifies existing electronic components and systems to meet specific requirements
- Installs, tests and maintains electronic components and systems to ensure proper functioning and optimal performance

Unit Group

2435 Industrial, Mechanical and Production Engineers

Design, organise and oversee the construction, operation, logistics and maintenance of mechanical and process plant and installations, establish programs for the coordination of manufacturing activities, and ensure usage of resources is cost effective.

OSCA skill level

The occupations in this unit group have a skill level corresponding to the qualifications and experience below.

- Skill Level 1: Bachelor Degree, higher qualification, or at least five years of relevant experience

Occupation

243531 Industrial Engineer

Plans, investigates and reviews the logistics and utilisation of personnel, facilities, equipment and materials, operational processes and practices to improve the quality, safety and efficiency of operations in commercial, industrial and production environments.

Registration or licensing may be required.

Specialisations

- Integrated Logistics Support Engineer
- Manufacturing Engineer
- Process Engineer (Industrial)
- Quality Assurance Engineer (Industrial)
- Systems Engineer (Industrial)

Skill level: 1

Main tasks

- Plans, implements and coordinates the sequence of operations in an industrial facility to maximise efficiency of time and resources
- Estimates production costs and risks associated with product design, process changes and fabrication
- Analyses data and product specifications to determine the quality of finished products, identify quality issues, and implement strategies for improving products and processes
- Designs systems and processes to minimise production issues and optimise resource use
- Develops and implements quality control procedures to ensure product and process consistency
- Identifies and analyses potential hazards in industrial facilities, and develops and implements safety policies and strategies to mitigate them

Occupation

243532 Mechanical Engineer

Plans, designs, develops, tests and oversees the manufacturing, operation, maintenance and installation of mechanical systems.

Registration or licensing may be required.

Hydraulic engineers (civil) are excluded from this occupation. Hydraulic engineers (civil) are included in Occupation 243236 Water Engineer.

Specialisations

- Building Services Engineer
- Heating, Ventilation and Air Conditioning Engineer
- Hydraulic Engineer (Mechanical)

Skill level: 1

Main tasks

- Designs mechanical equipment, machines, tools and components for agricultural, mining, construction, manufacturing and other industrial purposes
- Plans and designs the layout, flow and processes of mechanical and process plants
- Oversees the assembly, erection and commissioning of mechanical and process plant and installations
- Studies and analyses mechanical systems and components to evaluate their performance
- Inspects, maintains and tests mechanical equipment, and investigates mechanical failures or unexpected maintenance issues

Occupation

243533 Production or Plant Engineer

Plans, directs and coordinates the design, construction, modification, continued performance and maintenance of equipment and machines in industrial plants, and the management and planning of production and plant activities.

Registration or licensing may be required.

Specialisations

- Automation and Control Engineer (Production or Plant)
- Automation Engineer (Production or Plant)
- Control Systems Engineer (Production or Plant)

- Maintenance Engineer (Shipbuilding)

Skill level: 1

Main tasks

- Determines and plans the layout of equipment and machines in industrial plants
- Develops and implements strategies to improve the performance and efficiency of production and plant activities
- Coordinates the construction, modification and maintenance of equipment and machines in industrial plants
- Identifies and resolves technical issues and problems in industrial plants
- May use established systems to recognise and control at-risk behaviours and situations, and support the interaction of personnel and equipment in production activities
- May manage autonomous fleets of vehicles, and identify and implement operational improvements for autonomous fleet management systems to improve efficiency, productivity and overall operations in production activities

Unit Group

2436 Mining Engineers

Plan and direct the engineering aspects of locating and extracting minerals, petroleum and natural gas from the earth.

OSCA skill level

The occupations in this unit group have a skill level corresponding to the qualifications and experience below.

- Skill Level 1: Bachelor Degree, higher qualification, or at least five years of relevant experience

Occupation

243631 Mining Engineer (excluding Petroleum)

Plans and directs the engineering aspects of locating and extracting minerals from the earth.

Registration or licensing may be required.

Drilling engineers (petroleum) are excluded from this occupation. Drilling engineers (petroleum) are included in Occupation 243632 Petroleum Engineer.

Specialisations

- Drill and Blast Engineer (Mining)
- Process Engineer (Mining)

Skill level: 1

Main tasks

- Plans and designs mining operations, including the location and layout of the mine development
- Researches and improves the efficiency and safety of mining methods and equipment
- Monitors and evaluates mining operations to ensure compliance with safety and environmental regulations
- Assesses mineral reserves and analyses production costs to determine the viability of mining projects
- Conducts geological surveys and analyses data to identify mineral deposits
- Optimises procedures to extract raw materials from the ground using blasting, drilling and other excavation methods

Occupation

243632 Petroleum Engineer

Plans, develops and directs the engineering work in drilling, production and formation evaluation to achieve optimal exploration, development and extraction of oil and gas resources.

Registration or licensing may be required.

Drill and blast engineers (mining) are excluded from this occupation. Drill and blast engineers (mining) are included in Occupation 243631 Mining Engineer (excluding Petroleum).

Specialisations

- Drilling Engineer (Petroleum)
- Reservoir Engineer
- Subsea Engineer (Oil and Gas)

Skill level: 1

Main tasks

- Plans, researches, designs and provides advice on engineering operations for the exploration, location and extraction of oil and gas
- Conducts studies to determine potential locations for drillings
- Uses computer models to determine ideal recovery processes, and simulate and predict reserve performance
- Analyses reservoir rock and fluid data to design optimum methods of controlling the flow of oil or gas from wells
- Monitors the evaluation of wells, well testing and well surveys

Unit Group

2439 Other Engineering Professionals

This unit group covers Engineering Professionals not elsewhere classified. It includes Acoustic Engineers, Aerospace Engineers, Biomedical Engineers, Engineering Technologists, Environmental Engineers, Fire Safety Engineers, Mechatronics Engineers and Naval Architects.

OSCA skill level

The occupations in this unit group have a skill level corresponding to the qualifications and experience below.

- Skill Level 1: Bachelor Degree, higher qualification, or at least five years of relevant experience

Occupation

243931 Acoustic Engineer

Studies and applies the science of sound and vibration in the design and development of technologies to solve acoustic related problems, such as sound quality, transmission of sound, noise control or environmental noise pollution.

Registration or licensing may be required.

Skill level: 1

Main tasks

- Measures sound levels, reverberation and vibration within buildings and outdoor environments

- Analyses and performs tests on acoustic designs to enhance or control sound and vibration
- Models, predicts, measures and assesses the impact of noise on the environment and noise sensitive receptors, including wildlife
- Advises on materials and structures that can be used to minimise noise levels that could disrupt the local environment, and ensures those levels comply with local laws
- Designs noise and vibration attenuation solutions for environmental noise, building engineering services systems in buildings, transport infrastructure and industry

Occupation

243932 Aerospace Engineer

Performs and supervises engineering work concerned with the design, development, manufacture, maintenance and modification of aircraft, launch vehicles and spacecraft for flight.

Registration or licensing may be required.

Specialisations

- Aeronautical Engineer
- Aerospace Engineer Officer - Aeronautical (Navy, Air Force)
- Aerospace Engineer Officer - Armament (Air Force)
- Aerospace Engineer Officer - Electronics (Air Force)
- Propulsion Engineer

Skill level: 1

Main tasks

- Designs and develops aircraft, launch vehicles and spacecraft, components and systems
- Studies and analyses aerospace products to improve their efficiency, performance and safety
- Researches and identifies new technologies, materials and methodologies that can help to improve aerospace products and systems
- Tests, evaluates and assesses aircraft or spacecraft systems, prototypes and equipment to ensure compliance with regulations and standards
- Analyses data to solve technical issues identified in aircraft or aerospace vehicles and their systems
- Inspects damaged aircraft or spacecraft products to identify source of problems and provide possible solutions

Occupation

243933 Biomedical Engineer

Combines engineering principles with science, computing and medicine to develop and maintain medical systems, devices and equipment for health care purposes.

Registration or licensing may be required.

Specialisations

- Bioengineer
- Clinical Engineer
- Medical Engineer
- Medical Equipment or Device Engineer

Skill level: 1

Main tasks

- Designs and develops biomedical systems and devices, including artificial or bionic organs and parts, prosthetics, diagnostic machines and health monitoring devices
- Maintains medical equipment and devices, and performs safety checks to ensure compliance with regulatory standards
- Oversees the implementation of medical devices and systems in health care settings
- Provides support and training to Health Professionals to effectively use medical devices
- May work in clinical settings to diagnose and resolve problems, including analysing data from medical imaging technology
- May design software to run medical equipment or computer simulations to test new drug therapies and delivery systems
- May work with scientists in nanotechnology to design new materials to create medical products

Occupation

243934 Engineering Technologist

Analyses and modifies new and existing engineering technologies, and applies them in the testing and implementation of engineering projects.

Registration or licensing may be required.

Specialisations

- Biomedical Engineering Technologist

- Industrial Engineering Technologist
- Mining Engineering Technologist
- Safety Engineering Technologist
- Structural Engineering Technologist

Skill level: 1

Main tasks

- Researches, identifies and recommends new engineering technologies to support engineering activities
- Modifies existing engineering technologies to improve their efficiency and effectiveness
- Collaborates with engineers and other Professionals to develop and implement engineering solutions
- Applies engineering technologies in the testing and implementation of engineering projects
- Conducts experiments and tests to evaluate the performance of engineering technologies
- Conducts inspections to ensure engineering technologies are applied in compliance with relevant regulations and standards

Occupation

243935 Environmental Engineer

Assesses environmental impacts for engineering projects while working with other Professionals to develop solutions for long-term environmental sustainability. Plans and designs equipment and processes for the treatment and safe disposal of waste materials. Registration or licensing may be required.

Acoustic Engineers and Environmental Consultants are excluded from this occupation. Acoustic Engineers are included in Occupation 243931 Acoustic Engineer. Environmental Consultants are included in Occupation 244431 Environmental Consultant.

Skill level: 1

Main tasks

- Assesses and identifies the potential environmental impacts of air, water, soil and noise levels of engineering projects
- Develops and designs equipment and sustainable processes to prevent, control or remediate environmental impacts

- Oversees and coordinates environmental management plans for engineering projects, such as hazardous waste treatment facilities and air pollution control systems, to protect the environment
- Works with Environmental Research Scientists, Urban and Regional Planners, and other Professionals to assess causes of long-term environmental problems, and to develop solutions
- Liaises with regulators, contractors and other internal and external stakeholders to ensure engineering projects meet environmental requirements and objectives
- May develop uses for renewable energy and contribute to sustainable energy planning and design
- May be involved in the development and planning of sustainable infrastructure, and implementation of environmental rating tools

Occupation

243936 Fire Safety Engineer

Studies, designs and develops fire protection strategies to analyse, prevent and mitigate fire risk in various structures and environments.

Registration or licensing may be required.

Specialisation

- Fire Protection Engineer

Skill level: 1

Main tasks

- Designs fire detection, fire suppression and fire control systems and equipment
- Assesses and rates fire risks to ensure buildings comply with existing fire safety legislation and regulations
- Analyses building designs to develop fire strategies, including fire escape routes, safety systems and facilities for fire services
- Studies causes of fires and provides solutions to prevent them
- Uses computer modelling to simulate and understand fire, test safety levels and validate fire prevention systems
- Designs strategies to protect people and their environment from fire

Occupation

243937 Mechatronics Engineer

Researches, designs and develops intelligent systems that process information and make decisions by combining mechanical, electrical, electronic and software engineering principles.

Registration or licensing may be required.

Specialisation

- Robotics Engineer

Skill level: 1

Main tasks

- Researches, designs and develops intelligent systems, machinery and mechatronic components and equipment
- Designs prototypes for intelligent systems and mechatronic products
- Conducts computer modelling and simulations to assess mechatronic products performance
- Analyses mechatronics prototype test results and provides solutions on how to improve performance
- Designs, builds and implements mechatronic product modifications to improve safety, functionality and reliability

Occupation

243938 Naval Architect

Designs and oversees the construction and repair of marine craft and floating structures.

Registration or licensing may be required.

Skill level: 1

Main tasks

- Oversees the design, construction, repair, conversion or decommissioning of marine craft and floating structures
- Uses specialist CAD software to design marine craft and floating structures, taking into account factors such as stability, strength and performance
- Designs and coordinates the build of offshore floating structures such as offshore drilling platforms, floating units and subsea infrastructure installations
- Prepares detailed plans, specifications and cost estimates to establish basic characteristics of marine craft, such as size, weight and speed
- Ensures marine craft and floating structures comply with design specifications and safety and regulatory standards

- Collaborates with engineers and other Professionals to coordinate the design and layout of marine craft and floating structure systems, equipment, and machinery

Occupation

243999 Engineering Professionals nec

This occupation group covers Engineering Professionals not elsewhere classified.

Registration or licensing may be required.

Skill level: 1

Occupations in this group include:

- Agricultural Engineer
- Calibration Engineer
- Product Design Engineer
- Safety Engineer
- Test and Activation Engineer (Naval Shipbuilding)

Minor Group

244 Natural and Physical Science Professionals

Perform analytical, conceptual and practical tasks in relation to environmental factors and agricultural production, the chemical and physical properties of the universe, the extraction and processing of mineral ores, life forms including the physiology and biochemistry of humans, plants and animals, and disease prevention.

OSCA skill level

The occupations in this minor group have a skill level corresponding to the qualifications and experience below.

- Skill Level 1: Bachelor Degree, higher qualification, or at least five years of relevant experience

Unit Group

2441 Agricultural, Fisheries and Forestry Scientists

Advise farmers, primary industries and government on aspects of farming, fisheries, aquaculture and forestry, develop techniques for increasing productivity, and study and develop plans and policies for the management of land, fisheries and forest areas.

OSCA skill level

The occupations in this unit group have a skill level corresponding to the qualifications and experience below.

- Skill Level 1: Bachelor Degree, higher qualification, or at least five years of relevant experience

Occupation

244131 Agricultural Consultant

Advises farmers, agricultural businesses, rural industries and government on the production, processing and distribution of farm products.

Alternative title

- Agricultural Adviser

Specialisations

- Agricultural Extension Officer
- Landcare Officer

Skill level: 1

Main tasks

- Provides advice and guidance to farmers and agricultural businesses on best practices for production, processing and distribution of farm products
- Conducts research and analysis on agricultural trends and market conditions
- Evaluates farming operations for efficiency
- Develops and implements strategies to improve productivity and profitability
- Provides recommendations on land use, crop selection and livestock management
- Assists in the development and implementation of sustainable farming practices
- Advises farmers on issues such as livestock and crop disease, control of pests and weeds, soil improvement, animal husbandry and feeding programs
- Collaborates with government agencies and industry organisations to develop and implement agricultural policies and programs
- Conducts training and workshops for farmers and agricultural workers

Occupation

244132 Agricultural Research Scientist

Researches and studies commercial plants, animals and cultivation techniques to enhance the productivity of farms and agricultural industries.

Aquaculture and Fisheries Scientists are excluded from this occupation. Aquaculture and Fisheries Scientists are included in Occupation 244134 Aquaculture or Fisheries Scientist.

Alternative title

- Agricultural Scientist

Specialisation

- Research Agronomist

Skill level: 1

Main tasks

- Researches and studies the environmental factors affecting commercial crop production, pasture growth and animal breeding
- Researches and studies the effects of cultivation techniques, soils, insects and plant diseases on animal and crop production
- Develops procedures and techniques for solving agricultural or horticultural problems, and improving the efficiency of production
- Designs and conducts experiments to test new farming methods and technologies
- Collaborates with farmers and industry stakeholders to prioritise research needs
- Writes research proposals and secures funding for agricultural research projects, and presents findings at conferences and publishes them in scientific journals
- Provides technical advice and support to farmers on best practices for crop cultivation and animal husbandry
- Develops and implements strategies for sustainable agriculture and resource management

Occupation

244133 Agronomist

Provides advice on quality, production and management of crops and livestock by assessing growing conditions and environmental factors, and examining crops and livestock.

Research agronomists are excluded from this occupation. Research agronomists are included in Occupation 244132 Agricultural Research Scientist.

Specialisations

- Animal Nutritionist
- Sales Agronomist

Skill level: 1

Main tasks

- Collects and analyses data, and conducts research on factors affecting crop and livestock production
- Advises Farmers and Farm Managers about techniques for improving the production of crops and livestock
- Advises farmers on issues such as livestock and crop disease, weed, pest and disease control, soil improvement, and animal husbandry and feeding programs
- Studies environmental factors affecting commercial crop production, pasture growth and animal breeding
- Studies the effects of cultivation techniques, soils, insects and plant diseases on animal and crop production
- Develops procedures and techniques for solving agricultural problems and improving the efficiency of production

Occupation

244134 Aquaculture or Fisheries Scientist

Studies commercial marine and aquatic plants, animals, ecosystems and aquaculture techniques to assess stock and enhance the productivity of aquatic wild harvest and aquaculture, and develop better ways of harvesting fish and plants.

Marine Biologists are excluded from this occupation. Marine Biologists are included in Occupation 244634 Marine Biologist.

Alternative title

- Aquaculture or Fisheries Research Scientist

Skill level: 1

Main tasks

- Conducts research on marine and aquatic plants, animals, ecosystems and aquaculture techniques, and publishes findings in scientific journals and presents them at conferences and seminars
- Studies environmental and other factors affecting commercial aquaculture or fisheries

- Manages aquatic resources to maximise their long-term commercial, recreational and environmental benefits for the community
- Assesses the stock of aquatic wild harvest and aquaculture to determine productivity levels
- Develops and implements strategies to enhance wild harvest and aquaculture productivity
- Investigates and develops new methods and technologies for harvesting fish and plants
- Monitors and evaluates the environmental impact of fishing and aquaculture activities
- Collects and analyses data on fish populations and water quality
- Provides advice and recommendations to government agencies and industry stakeholders

Occupation

244135 Forester

Studies, develops and manages forest areas to maintain commercial and recreational uses, conserve flora and fauna, and protect against fire, pests and diseases.

Specialisations

- Forestry Consultant
- Research Forester

Skill level: 1

Main tasks

- Contributes to plans for forest management and operations, which may include silviculture, pest and disease management, forest production, harvesting, haulage, road construction, reforestation and/or regeneration activities
- Collects, reviews and uses data such as forest area, species, volumes of timber and growth rates, for forest management purposes
- Manages the use and sale of forest products such as timber
- Investigates, plans and implements management procedures to mitigate the impacts of natural disasters, pests and diseases on forests, including planning and managing fire prevention, and detection and suppression activities such as prescribed burning
- Develops and maintains relationships with stakeholders such as recreational forest users and Aboriginal and Torres Strait Islander communities, and advises governments and clients on forest management strategies
- Maintains organisational policies and processes to comply with environmental, safety and quality standards and regulations, including forest certification

- May study the propagation and culture of forest trees, methods for improving the growth of stock, and the effects of thinning on forest yields

Unit Group

2442 Chemists, and Food and Wine Scientists

Study the chemical and physical properties of substances, develop and monitor chemical processes and production, develop new and improve existing food products, and plan and coordinate the production of wine and spirits.

OSCA skill level

The occupations in this unit group have a skill level corresponding to the qualifications and experience below.

- Skill Level 1: Bachelor Degree, higher qualification, or at least five years of relevant experience

Occupation

244231 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 pharmaceutical, manufacturing, agriculture and other industries.

Specialisations

- Analytical Chemist
- Industrial Chemist
- Quality Control Chemist

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

Occupation

244232 Food Technologist

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.

Specialisation

- Food Scientist

Skill level: 1**Main tasks**

- 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

Occupation

244233 Winemaker

Plans, supervises and coordinates the production of wine or spirits from selected varieties of grapes.

Alternative title

- Oenologist

Skill level: 1

Main tasks

- 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

Unit Group

2443 Environmental Conservation Professionals

Protect, manage and restore ecosystems and landscapes, and enhance them via appropriate management and conservation, promote public understanding and awareness of the natural environment and help to develop and implement appropriate policies to achieve these objectives.

OSCA skill level

The occupations in this unit group have a skill level corresponding to the qualifications and experience below.

- Skill Level 1: Bachelor Degree, higher qualification, or at least five years of relevant experience

Occupation

244331 Aboriginal and Torres Strait Islander Land and Sea Ranger

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.

Skill level: 1

Main tasks

- 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

Occupation

244332 Conservation Officer

Develops and implements programs and regulations for the protection, restoration and recovery of aquatic life, vegetation, wildlife and other natural assets.

Alternative title

- Environmental Officer

Specialisation

- Landcare Facilitator

Skill level: 1

Main tasks

- 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

Occupation

244333 Ecologist

Studies the relationships between living organisms and the environment around them, and develops plans for the restoration, preservation and enhancement of biodiversity.

Skill level: 1

Main tasks

- 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

Occupation

244334 Park Ranger

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.

Aboriginal and Torres Strait Islander Land and Sea Rangers and Council Rangers are excluded from this occupation. Aboriginal and Torres Strait Islander Land and Sea Rangers are included in Occupation 244331 Aboriginal and Torres Strait Islander Land and Sea Ranger. Council Rangers are included in Occupation 591132 Council Ranger.

Skill level: 1

Main tasks

- 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, illegal activities such as illegal fishing or timber gathering
- May undertake compliance and enforcement activities

Unit Group

2444 Environmental Consultants and Scientists

Analyse and advise on policies and practices guiding the design, implementation and modification of environmental operations and programs, and study and develop policies and plans for controlling adverse environmental factors and the protection, effective management, restoration and recovery of the environment.

OSCA skill level

The occupations in this unit group have a skill level corresponding to the qualifications and experience below.

- Skill Level 1: Bachelor Degree, higher qualification, or at least five years of relevant experience

Occupation

244431 Environmental Consultant

Analyses and advises on policies and practices guiding the design, implementation and modification of government or non-government environmental operations and programs. Environmental officers are excluded from this occupation. Environmental officers are included in Occupation 244332 Conservation Officer.

Alternative title

- Environmental Adviser

Specialisation

- Closure Planner

Skill level: 1

Main tasks

- 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

Occupation

244432 Environmental Research Scientist

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.

Ecologists are excluded from this occupation. Ecologists are included in Occupation 244333 Ecologist.

Alternative title

- Environmental Scientist

Specialisation

- Water Quality Analyst

Skill level: 1

Main tasks

- 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

Occupation

244499 Environmental Consultants and Scientists nec

This occupation group covers Environmental Consultants and Scientists not elsewhere classified.

Skill level: 1

Occupations in this group include:

- Environmental Educator
- Soil Scientist

Unit Group

2445 Geoscientists and Hydrologists

Study the composition, structure and other physical attributes of the Earth and other planetary bodies to increase scientific knowledge and to locate, model and advise on planetary processes and the extraction of minerals, petroleum and ground and surface water.

OSCA skill level

The occupations in this unit group have a skill level corresponding to the qualifications and experience below.

- Skill Level 1: Bachelor Degree, higher qualification, or at least five years of relevant experience

Occupation

244531 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.

Specialisations

- Engineering Geologist
- Exploration Geologist
- Geochemist

- Mine Geologist
- Petrophysicist
- Project Geologist
- Research Geologist

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 in which they formed
- 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

Occupation

244532 Geophysicist

Studies the composition, structure and other physical attributes of the Earth or other planetary bodies, locates materials such as minerals, petroleum and ground water, and detects, monitors and forecasts seismic, magnetic, electrical, geothermal and oceanographic activity.

Specialisation

- Oceanographer

Skill level: 1

Main tasks

- Studies, measures and analyses seismic, gravitational, electrical, thermal and 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

Occupation

244533 Hydrologist

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.

Specialisations

- Hydrogeologist
- Groundwater Modeller

Skill level: 1

Main tasks

- 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

Unit Group

2446 Life Scientists

Study the anatomy, physiology, characteristics and behaviour of animals, plants, insects and other living organisms to better understand how living organisms function and interact with

each other and the environment in which they live, and to develop and improve biotechnological products and processes.

Ecologists are excluded from this unit group. Ecologists are included in Occupation 244333 Ecologist.

OSCA skill level

The occupations in this unit group have a skill level corresponding to the qualifications and experience below.

- Skill Level 1: Bachelor Degree, higher qualification, or at least five years of relevant experience

Occupation

244631 Biotechnologist

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.

Specialisations

- Bioinformatician
- Molecular Biologist

Skill level: 1

Main tasks

- 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

Occupation

244632 Botanist

Studies the anatomy, physiology, biochemistry and ecology of plants.

Specialisation

- Plant Pathologist

Skill level: 1

Main tasks

- 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

Occupation

244633 Entomologist

Studies the anatomy, physiology, characteristics, ecology, behaviour, environments and impact of insects.

Specialisations

- Entomologist (Biosecurity)
- Medical Entomologist

Skill level: 1

Main tasks

- 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

Occupation

244634 Marine Biologist

Studies the anatomy, physiology, functions, characteristics, behaviour and environments of all forms of life living in the sea and connected water bodies. Aquaculture or Fisheries Scientists are excluded from this occupation. Aquaculture or Fisheries Scientists are included in Occupation 244134 Aquaculture or Fisheries Scientist.

Skill level: 1

Main tasks

- 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

Occupation

244635 Microbiologist

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 the environment. Medical microbiologists are excluded from this occupation. Medical microbiologists are included in Occupation 244731 Medical Laboratory Scientist.

Skill level: 1

Main tasks

- 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 industries
- 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

Occupation

244636 Zoologist

Studies the anatomy, physiology, characteristics, ecology, behaviour and environments of animals.

Entomologists are excluded from this occupation. Entomologists are included in Occupation 244633 Entomologist.

Skill level: 1

Main tasks

- 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

Occupation

244699 Life Scientists nec

This occupation group covers Life Scientists not elsewhere classified.

Skill level: 1

Occupations in this group include:

- Anatomist
- Animal Behaviourist
- Biochemist
- Biologist
- Neuroscientist
- Parasitologist
- Pharmacologist (Non-clinical)
- Physiologist
- Protein Chemist
- Toxicologist

Unit Group

2447 Medical Science Professionals

Research and advise on the safe and effective delivery of radiation as prescribed in patient care, and perform, validate and interpret the results of medical laboratory tests used in the diagnosis, treatment and prevention of human diseases.

OSCA skill level

The occupations in this unit group have a skill level corresponding to the qualifications and experience below.

- Skill Level 1: Bachelor Degree, higher qualification, or at least five years of relevant experience

Occupation

244731 Medical Laboratory Scientist

Performs, validates and interprets the results of medical laboratory tests designed to assist in the diagnosis, treatment and prevention of human disease.

Registration or licensing may be required.

Haematologists are excluded from this occupation. Haematologists are included in Occupation 264336 Haematologist.

Alternative titles

- Hospital Scientist
- Medical Scientific Officer
- Medical Scientist

Specialisations

- Cytologist
- IVF Embryologist

Skill level: 1**Main tasks**

- Prepares blood, fluid and tissue samples for microscopic examination
- Performs a wide range of laboratory tests on patient samples, including blood, urine and tissue samples
- Analyses samples to study, diagnose and treat diseases

- Evaluates test results and communicates these to Medical Practitioners
- Establishes the steps and rules of laboratory medical testing
- Operates and maintains laboratory equipment
- Ensures laboratory quality assurance and safety standards are met
- Prepares scientific papers and reports
- Supervises and teaches other staff such as Medical Laboratory Technicians
- Develops new methods and applies the latest improvements in technology for laboratory testing

Occupation

244732 Medical Physicist

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.

Registration or licensing may be required.

Skill level: 1

Main tasks

- 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

Unit Group

2449 Other Natural and Physical Science Professionals

This unit group covers Natural and Physical Science Professionals not elsewhere classified. It includes Conservators, Meteorologists and Physicists.

OSCA skill level

The occupations in this unit group have a skill level corresponding to the qualifications and experience below.

- Skill Level 1: Bachelor Degree, higher qualification, or at least five years of relevant experience

Occupation

244931 Conservator

Investigates, documents, treats and prevents damage to material culture to facilitate access for people to whom they hold significance.

Specialisation

- Art Conservator

Skill level: 1

Main tasks

- Examines and documents objects, including condition surveys and reports
- Recommends appropriate materials and environments for storage, display and other contexts
- Researches, tests and applies treatments to stabilise, clean, repair, restore or activate objects
- Assesses and manages physical risks to cultural heritage objects and collections
- Analyses, monitors and manages storage, display and transport of material culture

Occupation

244932 Meteorologist

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.

Specialisation

- Climatologist

Skill level: 1

Main tasks

- Analyses and interprets weather data gathered from different sources such as 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

Occupation

244933 Physicist

Studies matter, space, time, energy, forces and fields, and the interrelationship between these physical phenomena to further understand 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.

Medical Physicists are excluded from this occupation. Medical Physicists are included in Occupation 244732 Medical Physicist.

Specialisation

- Astronomer

Skill level: 1

Main tasks

- 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

Occupation

244999 Natural and Physical Science Professionals nec

This occupation group covers Natural and Physical Science Professionals not elsewhere classified.

Skill level: 1

Occupations in this group include:

- Materials Scientist
- Metrologist