OIL AND GAS CAREERS OVERVIEW

Career paths in the petroleum industry form around vocation streams aligned with the industry sectors. The major groupings, focus of activities, and the principal skill areas are:

Science Stream – Focuses on searching for petroleum reservoirs and managing oil and gas fields. The principal areas of expertise sought are Geosciences and Geophysics, whilst there is also some demand for environmental and marine sciences.

Drilling Stream – Undertakes the planning and drilling of wells to find and extract oil and gas. A wide range of skills are required, from semi-skilled field and deck workers, through to skilled Driller positions; Technicians for well logging to professional Drilling Engineers responsible for well design and drilling operations.

Engineering Steam – Involved in the designing, building and optimising of production facilities and equipment. This stream covers a broad range of chemical, mechanical, and electrical disciplines as well as specialised Petroleum Engineers and Technicians.

Operations Stream – Responsible for the processing and quality of petroleum product produced. Jobs range from skilled plant operators and highly-skilled control room operators, to production superintendents and managers.

Maintenance Stream – Provides the servicing and repair of processing plant and production equipment. This stream predominantly employs skilled tradespersons and technicians supported by specialist reliability engineering staff and planners.

Business Stream – Delivers administrative support and management services to the operation. Typically business stream services cover finance and accounting, purchasing and supply, information technology, and human resource management and safety.

Qualification levels in the Australian petroleum industry can be categorised into three principal groups:

Prevocational Characteristics – The personal attributes and abilities preferred by petroleum industry employers. These include numeracy, literacy, teamwork, and good communication skills.

Employment Prerequisites – The basic knowledge all employees must have to maintain a safe workplace and minimise environmental impacts. These cover Occupational Health and Safety standards, Environmental Management procedures and responses, and Induction Training to become familiar with the processes, plant and equipment.

Australian Qualification Framework (AQF) – The petroleum industry has adopted this nationally recognised framework for vocational classifications, competency levels, and training standards. These AQF levels generally align with similar employment categories across all the vocational streams as follows:

AQF Level		Employment Category
Statement of Attainment	➡	Semi-Skilled
Certificate Level	➡	Skilled
Diploma Level	➡	Technician
Degree Level	➡	Professional

Examples of petroleum industry jobs aligned with these qualification levels include:

JOB EXAMPLES – by Vocational Stream and Qualification Level

	Science	Drilling	Engineering	Operations	Maintenance	Business
Semi-Skilled	Job Hustler	Roustabout	Trade Assistant	Field Operator	Storeperson	Accounts Clerk
Skilled	Laboratory Worker	Driller	Boilermaker/ Welder	Control Room Operator	Mechanical Fitter	OH&S Officer
Technician	Geoscience Technician	Toolpusher	Electronics Technician	Production Scheduler	Maintenance Planner	Training Officer
Professional	Geologist	Drilling Engineer	Chemical Engineer	Production Engineer	Maintenance Engineer	PR Advisor

Types of Training

Listed below are the broad types of training that employees will need to undertake to keep their skills updated and relevant during the course of their career.

HEALTH, SAFETY AND ENVIRONMENT (HS & E)

Regulatory requirements and duty of care dictate that employees need to have an awareness of how to operate a safe workplace whilst minimising the impact upon the environment. HS&E training is mandatory for all employees working in the petroleum industry – even those restricted to office duties. This training is usually provided on entrance to the industry and will need to be refreshed and/or updated throughout a career.

INDUCTION

Every workplace has its differences, and to enable new employees to the workplace to become aware of expectations, induction training is essential. Induction training will be provided upon joining the organisation and may also be provided again if a career change requires relocation to a different site. Induction training usually covers administrative tasks, procedures and duties (required of all personnel), a tour of the site, safety awareness discussions, and emergency response procedures. This training assures that a new employee can work safely and productively from the outset.

VOCATIONAL

To become recognised as semi-skilled, skilled or a technician in a given field, then the necessary vocational training or skills recognition (RPL or RCC) will need to be undertaken. Vocational education and training qualifications are based upon nationally endorsed competency standards where they exist, or on competency standards developed by relevant industry, enterprise, community or professional groups. Vocational training can be undertaken via the following means:

- Off-the-Job through a TAFE college, business college or other Recognised Training Organisations (RTO), or
- On-the-Job where skills are acquired via training from experienced supervisors and work-place trainers;

- Vocational training can also be pursued via new apprenticeship schemes where training is delivered via one or both of the above means.

PROFESSIONAL

To become qualified as a professional engineer, geologist or geoscientist, graduation from university is required. These courses are normally three to four years full-time study to obtain diploma or bachelor level qualifications. Post-graduate studies to obtain master and doctorate levels require a further two to four years (approximately) respectively.

If you are already employed within the industry, and interested in obtaining a qualification that is relevant to your position and further career in the industry, then your employer may provide monetary assistance, such as study leave and exam leave.

MANAGERIAL

As your career progresses, you may find yourself having to manage staff and resources. Supervision and management of staff and resources requires knowledge and skills different to those technical skills learnt from any of the previous forms of training. This training is often referred to as the Front Line Management program or Qualification in Business (Frontline Management).

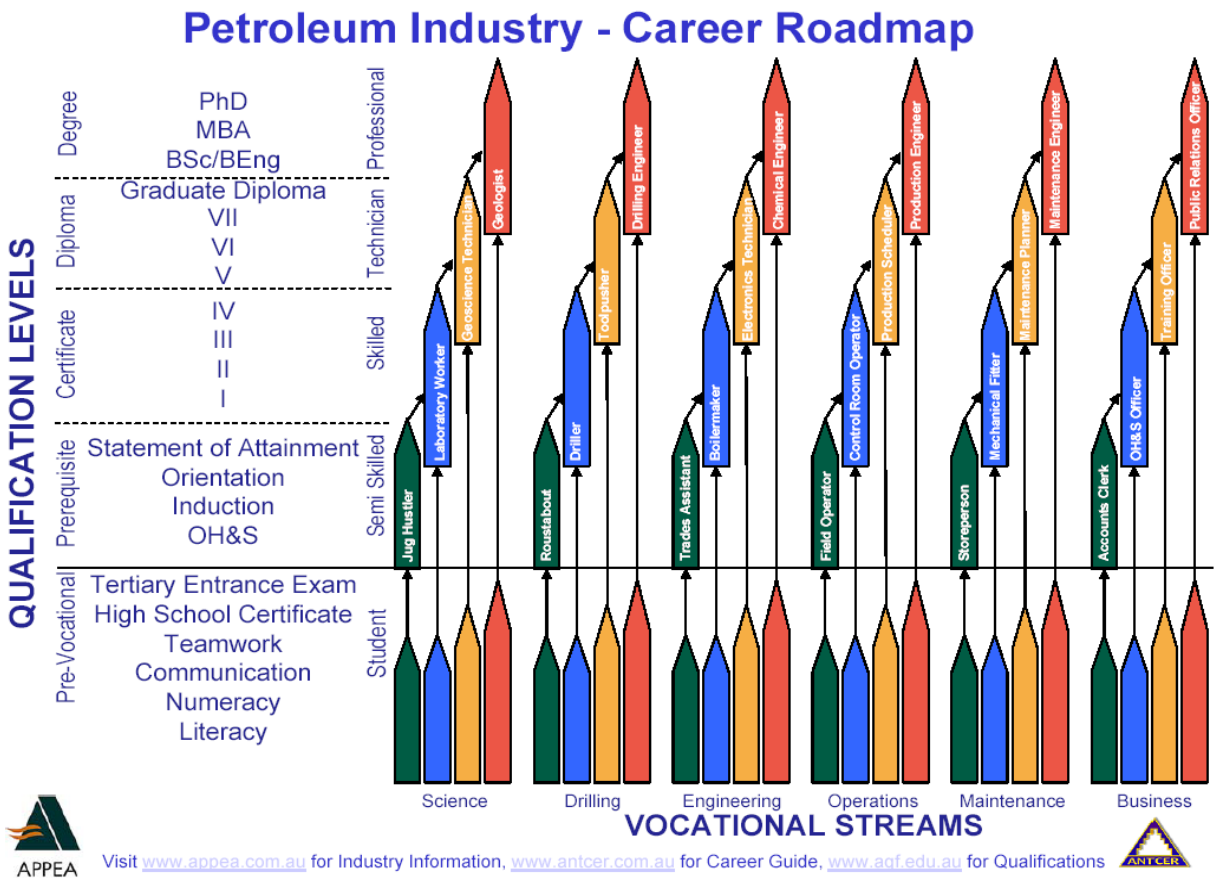
Frontline Management courses for supervisors and middle level managers can be conducted through Registered Training Organisations (RTO's). These courses can be completed at Level III, IV and Diploma and include training in areas such as managing people, building teams, leadership, managing workplace information etc. Post-graduate management courses at Diploma, Associate Degree, Degree, Masters, and Doctorate levels can be pursued through universities.

AUSTRALIAN QUALIFICATION FRAMEWORK

The Australian Qualifications Framework (AQF) provides a comprehensive, nationally consistent yet flexible framework for all qualifications in post compulsory education and training. The framework was introduced Australia-wide in 1995 and connects the schools sector, vocational education and training sector and higher education sector in a coherent single Framework.

The AQF incorporates qualification titles and guidelines. The qualifications are shown on page 4, grouped according to the sector in which they are most commonly issued. The guidelines contain the main criteria for defining qualifications based on the general characteristics of education and training at each qualification level.

The AQF encourages individuals to progress through education and training by improving access to qualifications, clearly defining avenues for achievement, and generally contributing to lifelong learning.



Vocational Education and Training Sector

In the vocational education and training sector, qualifications are based on nationally endorsed competency standards where they exist or on competency standards developed by relevant industry workplace representatives and professional groups.

Training packages specifically developed for the petroleum industry cover the Drilling and Operations vocational streams:

Drilling Training Package

- AQF Levels 1-3 Oil and Gas Drilling Offshore (Roustabout to Derrickman)
- AQF Levels 1-3 Oil and Gas Drilling Onshore (Lease Hand to Derrickman)
- AQF Levels 4-6 Oil and Gas Drilling – Driller to Installation Manager/ Field Superintendent

Chemical Hydrocarbons and Oil Refining

- AQF Level 1 – Certificate I in Process Plant Skills
- AQF Level 2 – Certificate II in Process Plant Operations
- AQF Level 3 – Certificate III in Process Plant Operations
- AQF Level 4 – Certificate IV in Process Plant Technology

Other qualifications relevant to the Engineering and Maintenance streams in petroleum industry include:

Metal and Engineering Training Package

- AQF Level 1 – Certificate I in Engineering
- AQF Level 2 – Certificate II in Engineering – Production

- AQF Level 2 – Certificate II in Engineering – Production Technology
- AQF Level 3 – Certificate III in Engineering – Production Systems
- AQF Level 3 – Certificate III in Engineering – Mechanical Trade
- AQF Level 3 – Certificate III in Engineering – Fabrication Trade
- AQF Level 3 – Certificate III in Engineering – Electrical / Electronic Trade
- AQF Level 3 – Certificate III in Engineering – Technician
- AQF Level 4 – Certificate IV in Engineering – Higher Engineering Trade
- AQF Level 5 – Diploma of Engineering

Business Services Training Package

A subset of the Business Services Training Package is Frontline Management which covers the competencies necessary for supervisors and frontline managers.

- AQF Level 3 – Certificate III in Business (Frontline Management)
- AQF Level 4 – Certificate IV in Business (Frontline Management)
- AQF Level 5 – Diploma of Business (Frontline Management)

HIGHER EDUCATIONAL SECTOR

In the higher education sector, objectives, standards and academic requirements of courses are set by universities having regard for requirements set by peer review and the requirements of relevant professional bodies and employer groups.

Universities usually establish course advisory committees comprising a range of interested parties including practitioners, employers, community representatives and academic staff from other institutions to facilitate ongoing review of content and relevance.

Training Organisations

VOCATIONAL EDUCATIONAL AND TRAINING SECTOR

To deliver vocational education and training services throughout Australia, an organisation must meet the Australian Quality Training Framework (AQTF) requirements. The AQTF is used to register organisations as Registered Training Organisations (RTOs) to deliver training, assess competency and issue Australian Qualifications Framework (AQF) qualifications.

An RTO may be either:

- A private training company,
- A public training institution, or
- A company operating within the industry large enough to have a training department that possesses RTO status.

TIP – Contact the Energy Apprenticeships Group (EAG)

EAG was launched in August 2005. This group training initiative is a joint venture between the private sector's Chamber of Commerce and Industry (WA), and the State Government's Australian Centre for Energy and Process Training (ACEPT).

Endorsed by APPEA, the aim of the EAG is to deliver a world class group training service developed exclusively for the oil and gas industry.

For more details: http://www.cciwa.com/appsaust/Energy_Apprenticeships_Group.aspx.

COMPETENCY ASSESSORS

For the recognition of competency to certain standards (eg specific industry standards) a competency assessor will need to evaluate an individual's competence against the criteria of the standard.

The competency assessors are usually qualified by meeting the Training and Assessment (TAA) Training Package requirements, as detailed in the Australian Quality Training Framework. Their role is to determine whether an applicant meets with the criteria as stipulated in the training package.

INDUSTRY TRAINING COUNCILS

Most industries have an Industry Training Council that researches training needs, develop competency standards and liaises with Registered Training Organisations and Government Departments to advise on the training needs of the industry they represent. Two Industry Training Councils are active in the petroleum industry in Australia.

- *Process Manufacturing Industry Training Council (PMITC)* represents the employers and employees involved in the field of moving hydrocarbons from the drilling site to the end product ready for use. The PMITC is also responsible for the promotion and implementation of the training package that governs the Petroleum Industry Chemical, Hydrocarbons and Oil Refining (PMA02). Details here: http://members.iinet.net.au/~wapmitc/Index1.htm.
- *Australian Drilling Industry Training Committee (ADITC)* represents the employers and employees who operate drilling equipment. Details here: http://www.aditc.com.au/aditc-profile.

HIGHER EDUCATION SECTOR

Universities

The petroleum industry employs a significant number of Professionals in the science and engineering disciplines and to a lesser extent in the information technology, accounting, marketing and public relation professions. Universities deliver these qualifications. There are even specialist centres of higher education that are sponsored by the petroleum industry and award specialist degrees. Examples include the University of Western Australia School of Oil and Gas Engineering, which is sponsored by Woodside Energy and the Adelaide School of Oil & Gas Engineering, which is sponsored by Santos.

Societies / Institutes

Professionals may also pursue further education through their profession's representative body; examples include:

- Society of Petroleum Engineers (SPE)
- Petroleum Exploration Society of Australia (PESA)
- Institute of Engineers Australia (IEAust)