Postgraduate Programmes - Renewable Energy

**Postgraduate Certificate in Geothermal Energy Technology**

**Institution:** University of Auckland  
**Qualification:** Postgraduate Certificate in Geothermal Energy Technology  
**Length of Programme:** 1 semester  
**Commencement:** July 2014

The Postgraduate Certificate in Geothermal Energy Technology is a highly practical and applied qualification which has been designed to train participants in key aspects of developing geothermal energy fields. The course content draws on recent advances in technology and leading edge research and uses experts from academia and industry as lecturers and tutors. New Zealand has been at the forefront of geothermal research and training since the world’s first liquid-dominated high temperature geothermal power plant was installed at Wairakei, in the central North Island, more than 60 years ago. Today, there are more than 25 such systems operating in the country. More than 1450 students from more than 50 counties have graduated from The Geothermal Institute at The University of Auckland with a world recognised qualification; many of our graduates are now leaders in the geothermal industry world-wide. Students find the nine days on field trips a memorable experience and particularly beneficial.


**Master of Energy**

**Institution:** University of Auckland  
**Qualification:** Master of Energy  
**Length of Programme:** 2 semesters  
**Commencement:** July 2014

All students complete two core courses that give an overview of business (ENERGY 721) and technology (ENERGY 722) issues relevant to energy. Students have a choice of completing a 90 point research thesis or a smaller 45 point research project. In both cases the project scope may include economic, environmental, regulatory and business issues, as well as technical matters. Students who choose the smaller 45 point research project also take an additional three 15 point elective courses. The courses allow the student to concentrate on a particular energy form such as wind or geothermal, to take additional business courses, or to focus on sustainability/policy issues. Students may begin in the Postgraduate Certificate (Geothermal) program in semester 2 and progress to the Master of Energy program in semester 1 of the following year if they gain a B average in their Postgraduate Certificate courses.


**Postgraduate Diploma (Earth Sciences)**

**Institute:** University of Waikato  
**Qualification:** Postgraduate Diploma (Earth Science)  
**Length of Programme:** 1 year (2 semesters)  
**Commencement:** July 2014
The qualification enables science graduates to complete a postgraduate qualification in one year without committing themselves to the two years of study required for a Masters degree. Candidates must gain 120 points at 500-level or above with at least 90 points in their main subject, 30 points may be taken from a subject offered by another school or faculty.

http://sci.waikato.ac.nz/study/subjects/earth-sciences

**Master of Science**

**Master of Science (Technology)**  
**Institute:** University of Waikato  
**Qualifications:** Master of Science  
**Length of Programme:** 2 years  
**Commencement:** July 2014

The Master of Science and Master of Science (Technology) degrees will add to student’s knowledge of techniques as well as providing training in specialist areas. While developing research skills, students will have the opportunity to contribute to existing areas of research or to begin to develop new areas. Research programmes exist across a wide range of disciplines, supported by the primary research interests of staff which include hydrothermal systems.

The Master of Science and Master of Science (Technology) degrees are normally two-year programmes of study which combines taught papers with a research thesis in the second year. The Master of Science (Technology) includes two compulsory papers on industrial technology and innovation. Students will have the opportunity to undertake research with staff who are leaders in their field and will have the use of world-class laboratory facilities. A 12 month Master of Science degree by thesis research may be available to students who have already completed a qualification such as a Bachelor of Science (Honours) or a Postgraduate Diploma.

An example of a relevant course would be -  
Volcanic Geochemistry and Hydrothermal Systems - A study of geochemical approaches and methods to solve various problems in the Earth Sciences including volcanic environments, with particular attention to hydrothermal systems, geothermal energy, and the formation of hydrothermal ore deposits.

http://sci.waikato.ac.nz/study/qualifications/msc  
http://sci.waikato.ac.nz/study/qualifications/msctech

**Master of Engineering**  
**Institution:** University of Waikato  
**Qualification:** Master of Engineering  
**Length of Programme:** 1 year  
**Commencement:** July 2014

This research-focused degree is designed for graduates who wish to further their knowledge of the innovative research methodologies required in industry, and for professional engineers who wish to up-skill in new areas related to their work. Excellence in advanced engineering design, research and development skills are core features of the degree. The School of Engineering is committed to
fostering synergistic relationships between science, engineering, industry and management; essential for turning scientific knowledge into technology. Excellence in advanced engineering design, research and development skills are core features of the degree. The School has developed a very strong research base to support its aims of providing students with in-depth knowledge, analytical skills, innovation, and techniques to translate science into technology in the real world. Specialist faculty expertise in the area of solar/photovoltaic energy is a key component of the programme.

An example of a relevant course would be - Design for Energy and the Environment – This interdisciplinary course focuses on the important aspects of science and technology related to new and existing energy resources and energy efficiency. Topics covered reflect the trend of current development in energy technology.

http://sci.waikato.ac.nz/study/qualifications/me

Master of Engineering Studies
Institution: Massey University
Qualification: Master of Engineering Studies
Length of Programme: 2 years (four semesters)
Commencement: July 2014

The Master of Engineering Studies provides instruction in current and future energy supplies with particular emphasis on renewable energy sources such as solar, wind and biomass, as well as energy conservation and management, energy costs, and environmental management. A relevant bachelor’s degree is required for entry.


Postgraduate Diploma in Water Resource Management
Institute: University of Canterbury
Qualification: Postgraduate Diploma in Water Resource Management
Length of Programme: 1 year (two semesters)
Commencement: July 2014

The Postgraduate Diploma in Water Resource Management will prepare graduates for a technical and non-research career in water resource management and to develop innovative and effective methods for the sustainable management of this critical resource in New Zealand and internationally. A relevant bachelor’s degree is required for entry. It comprises WATR 401 (Advanced Water Resources), 402 (Determinants of Water Availability and Quality) and 403 (Water Management, Policy and Planning) and other relevant courses.

http://www.canterbury.ac.nz/courses/grad_postgrad/science/pgdipwaterrm.shtml
Master of Water Resource Management
Institute: University of Canterbury
Qualification: Master of Water Resource Management
Length of Programme: 2 years (four semesters)
Commencement: July 2014

This degree will prepare graduates for a professional career in water resource management and to develop innovative and effective methods for the sustainable management of this critical resource in New Zealand and internationally. A Postgraduate Diploma in Water Resource Management or relevant bachelor’s degree is required for entry. The first year comprises three core courses WATR 401 (Advanced Water Resources), 402 (Determinants of Water Availability and Quality) and 403 (Water Management, Policy and Planning) and other relevant courses. In the second year students undertake a research thesis with external stakeholder support and interest to provide them with experience in the sector.

http://www.canterbury.ac.nz/courses/grad_postgrad/science/mwaterrm.shtml

Postgraduate Certificate in Engineering Studies
Institute: University of Canterbury
Qualification: Postgraduate Certificate in Engineering Studies
Length of Programme: one semester
Commencement: July 2014

The Postgraduate Certificate in Engineering Studies caters for professional engineers seeking advanced technical training or candidates who do not wish to commit to a master’s programme. Endorsements are offered in Civil Engineering, Construction Management, Earthquake Engineering, Engineering Mathematics, Fire Engineering, Mechanical Engineering and Transportation Engineering. An unendorsed certificate is also available in a broad range of engineering subjects. The Postgraduate Certificate in Engineering Studies comprises a combination of 600 and 400-level courses, with specific combinations to meet the requirements of the endorsements.

http://www.canterbury.ac.nz/courses/grad_postgrad/engineering/pgcerteng.shtml

Postgraduate Diploma in Engineering Geology
Institute: University of Canterbury
Qualification: Postgraduate Diploma in Engineering Geology
Length of Programme: 2 years (four semesters)
Commencement: July 2014

This is a one year course of study corresponding to MSc Part 1 in Engineering Geology. Students wishing to enter the Postgraduate Diploma in Engineering Geology should normally have achieved a B- average grade in their undergraduate studies, have passed required field courses (GEOL 240 (Field Studies: A Mapping), 241 (Field Studies B: Field Techniques), 351 (Advanced Field Techniques), 352 (Advanced Field Mapping) or equivalent), and have at least 60 new points in GEOL 300 courses. There is also a requirement for 15 points of MATH 100-level and 15 points of STAT 100-level courses, or equivalent.

http://www.canterbury.ac.nz/courses/grad_postgrad/science/pgdipenggeol.shtml
Master of Science in Engineering Geology
Institute: University of Canterbury
Qualification: Master of Science in Hazard and Disaster Management
Length of Programme: 2 years (four semesters)
Commencement: July 2014

This degree consists of Part 1 (one year of course work) and Part 2 thesis work.

Students wishing to enter MSc Part I should normally have achieved a B average grade in their undergraduate studies, have passed required field courses (GEOL 240 (Field Studies: A Mapping), 241 (Field Studies B: Field Techniques), 351 (Advanced Field Techniques), 352 (Advanced Field Mapping) or equivalent), and have at least 60 new points in GEOL 300 courses. There is also a requirement for 15 points of MATH 100-level and 15 points of STAT 100-level courses, or equivalent. The programme of study for Part 1 includes a total of eight compulsory courses: ENGE410 (Engineering Geological Field Methods), 411 (Engineering Construction Practice), 412 (Rock Mechanics and Rock Engineering), 413 (Soil Mechanics and Soil Engineering), 414 (Applied Hydrogeology) and 415 (Engineering Geomorphology and Geohazards) and HAZM410 (Special Topics). Course weighting for each course is 0.125.

To proceed to Master of Science Part II (thesis) a B+ grade average is required in Master of Science Part I courses, an appropriate lecturer or research associate must agree to be supervisor, and a research proposal must have been written in conjunction with the supervisor and approved within the Dept.

Part 2 consists of a thesis on an individual investigation presented not more than 16 months after enrolment for Part 2 of the degree if Honours are to be awarded. This time limit is extended to 24 months for students qualifying for the award of the MSc degree without Honours. Parts 1 and 2 are weighted 1:2 in the final assessment of the degree though it is also a requirement that each of Parts 1 & 2 must be passed. Master of Science students must also present a seminar in the Department.

http://www.geol.canterbury.ac.nz/Engineering_Geology/Index.shtml