

2011

Forestry and
Primary Industries



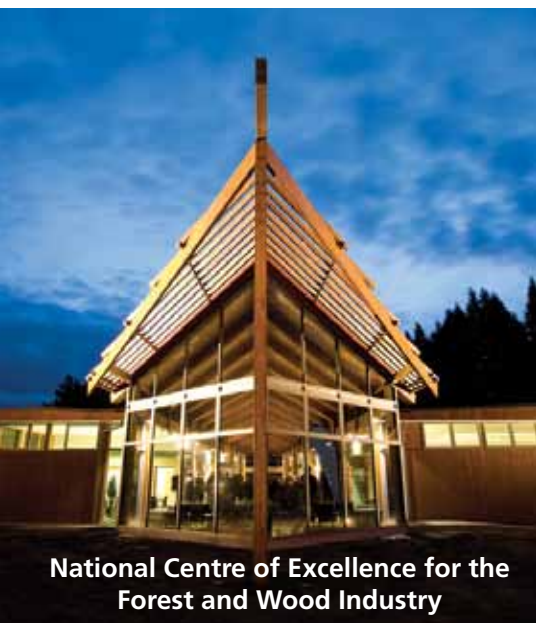
waiariki
INSTITUTE OF
TECHNOLOGY
Whare Takiura
ROTORUA | NEW ZEALAND



www.forestryschool.ac.nz

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National Centre of Excellence for the Forest and Wood Industry

Introduction

Welcome



Kia ora tatou.
Welcome to the Waiariki Institute of Technology School of Forestry and Primary Industries. We are located in the beautiful city of Rotorua, New Zealand, which is famous for its thermal activity, its indigenous tourism and for its extensive forest industry.

The Rotorua region is an outdoor paradise, known for its mountain bike tracks, river kayaking and rafting, bush walks, Māori culture and close proximity to winter ski fields and national parks.

Waiariki's School of Forestry and Primary Industries is the largest vocational forestry training institute, which was established over 60 years ago by the New Zealand Government to train students in plantation forest management, sawmilling and wood manufacturing. We are very proud of our school, which is keen to welcome international students to join our study programmes in Forest Management, Forest Operations, Wood Processing, Biotechnology, Sustainable Energy, Agriculture and Horticulture.

Kia ora

Jeremy Christmas

Director, School of Forestry and Primary Industries

New Zealand

- New Zealand is a very beautiful, friendly country with a world-class education system

Waiariki Institute of Technology

- A Government owned public institution
- Delivers applied learning at degree, diploma and certificate levels in technical, vocational and professional fields
- Has qualifications which are approved by the New Zealand Qualifications Authority (NZQA) and have international recognition
- Is a signatory to the New Zealand Ministry of Education Code of Practice for the Pastoral Care of International Students
- Welcomes over 500 international students each year from many countries

Rotorua – A World Famous Destination

- Friendly and safe city
- New Zealand's most visited tourist destination, hosting well over 1.5 million visitors each year
- Māori cultural events, geothermal activity, spectacular scenery and adventure activities
- Average temperatures in the winter range from 8-15°C and 20-30°C in summer
- Rotorua is ideally situated for easy access to forests, geothermal areas, hiking, mountain biking trails and 14 beautiful lakes
- Rotorua International Airport provides direct links to the rest of the country as well as Sydney, Australia
- A 45-minute drive to some of New Zealand's best beaches
- Just 2.5 hours to New Zealand's largest ski area
- Rotorua enjoys lower living expenses than larger cities

Who Can Enrol?

Entry is open to all students!*

How to Enrol?

Go to www.waiariki.ac.nz to download and print the 2011 Application and Enrolment Form, or pick one up at your local Waiariki campus, or phone us on **0800 924 274** and we'll mail one to you.

- 1 Send your completed 2011 Application and Enrolment Form to one of the campus locations listed in the form.
- 2 We will acknowledge receiving your Application and Enrolment Form and send your class details and invoice.
- 3 You are enrolled!

Start Your Studies



We look forward to having you on board with us. In the meantime, why not visit our website to view more information about Waiariki Institute of Technology, our range of qualifications, and see some of our exciting innovations.

** Admission and entry requirements are in accordance with Waiariki's Academic Regulations (see pages 26 and 27).*

We look forward to teaching you:

- Accounting
- Commercial law
- Business computing
- Business communication
- Business finance
- Forest management
- Human resource management
- Management
- Marketing
- Wood manufacturing

What industry opportunities are there?

Business management can be found in all industries. The main branches of management are financial, marketing, human resource, strategic, production, service, information technology, and business intelligence.

The need for good managers who can manage themselves and others in what can be high stress environments will always exist. You could find yourself:

- Managing a business, organisation or project
- Planning and managing production in factories
- In staff recruitment, management, training and development
- In marketing and communications
- In industrial and employment relations

Progression in business management could include:

- Moving into related or specialist areas (for example, it is possible for people to move between areas such as human resources, industrial relations, and staff training and development)
- Using your experience to move into more senior management positions
- Working for a bigger business that covers a wider area and/or has more staff (this could include working for an international company)
- Managing your own business or working as a consultant

Graduate Diploma in Applied Management

Level 7

Credits 120

1 year full-time, or part-time equivalent

Semester 1 & 2

Rotorua



Qualification Details

This graduate diploma provides an opportunity to acquire additional specialist knowledge and skills in the field of management in chosen strands of business, forestry, health and Māori development. This qualification enables students to develop the management skills and knowledge required to successfully work in and manage a sustainable business operation in Aotearoa/New Zealand.

| Course Code | Course Title | Level | Credits |
|-------------|--------------|-------|---------|
|-------------|--------------|-------|---------|

Compulsory Courses

Forest Management Strand

| | | | |
|-----------|----------------------|---|----|
| MGMT.7930 | Strategic Management | 7 | 15 |
| MGMT.7930 | Change Management | 7 | 15 |

and one of

| | | | |
|-----------|------------------|---|----|
| NURS.7001 | Applied Research | 7 | 15 |
|-----------|------------------|---|----|

or

| | | | |
|-----------|----------------------------|---|----|
| MGMT.7992 | Applied Project Management | 7 | 15 |
|-----------|----------------------------|---|----|

Forestry Strand

| | | | |
|-----------|--------------------------------------------------------------|---|----|
| FMAN.7901 | Forestry: Economic, Environmental Factors and Sustainability | 7 | 15 |
| FMAN.7902 | Management of Forest Estates | 7 | 15 |

Entry Requirements

Admission and entry requirements for this qualification are in accordance with Waiariki's Academic Regulations (see pages 26 and 27).

Applied Management

Bachelor of Applied Management

Level 7

Credits 360

3 years full-time, or part-time equivalent

Semester 1 & 2

Rotorua, Distance

Qualification Details

This degree provides a holistic view of organisations and allows students to examine the interface between education, organisations and the community from a socioeconomic perspective. This qualification enables students to develop the skills and knowledge of management required to successfully work in the business sector of Aotearoa/New Zealand, and provides regional contextualisation for applied management study.

| Course Code | Course Title | Level | Credits |
|-------------|--------------|-------|---------|
|-------------|--------------|-------|---------|

Compulsory Courses – as per qualification document

Forest Management Strand

| | | | |
|-----------|--------------------------------------------------------------|---|----|
| FMAN.5901 | Harvesting Operations | 5 | 15 |
| FMAN.5902 | Forestry Operations | 5 | 15 |
| FMAN.5903 | Forestry Business Systems | 5 | 15 |
| FMAN.6901 | Forest Harvest Planning | 6 | 15 |
| FMAN.6902 | Silvicultural Planning | 6 | 15 |
| FMAN.6903 | Forestry Business Planning | 6 | 15 |
| FMAN.7901 | Forestry: Economic, Environmental Factors and Sustainability | 7 | 15 |
| FMAN.7902 | Management of Forest Estates | 7 | 15 |

Wood Manufacturing Strand

| | | | |
|-----------|--------------------------------------------------------|---|----|
| WPRO.5901 | Wood Manufacturing Processes | 5 | 15 |
| WPRO.6901 | Wood Manufacturing Processes 2 | 6 | 15 |
| WPRO.6902 | Wood and Materials Science in Wood Manufacturing | 6 | 15 |
| WPRO.7901 | Strategic Planning and the Marketing of Wood Products | 7 | 15 |
| WPRO.7902 | Application of Quality Processes to Wood Manufacturing | 7 | 15 |

Entry Requirements

Admission and entry requirements for this qualification are in accordance with Waiariki's Academic Regulations (see pages 26 and 27).

Forest Management

We look forward to teaching you:

- Team building and leadership
- Legislation affecting forestry
- Regional forestry analysis
- Forest industry structure
- Plant nutrition, wood science
- New Zealand biosecurity and risk
- Surveying using survey tools, Geographic Information Systems (GIS) and Global Positioning System (GPS)
- Objectives of forest harvesting and harvest planning, operational harvesting, environmental management systems

What industry opportunities are there?

With an increase in wood volume availability over the next few years, the demand for forest managers, supervisors and forestry technicians is set to grow throughout the country.

Forestry jobs can include working with indigenous (native) or commercial forests where you may undertake:

- Planting and tending of forests (silviculture)
- Harvesting and transporting of forest products
- Planning and management of forests, staff or contractors
- Environmental management
- Health and safety management
- Research work

Men, and increasingly women too, come into forestry from all walks of life. There are no barriers. To work outdoors in some pretty amazing locations, forestry isn't just a career, it is a lifestyle choice!



Forest Management

Diploma in Forest Management

Level 6

Credits 240

2 years full-time, or part-time equivalent

Semester 1 & 2

Rotorua

Qualification Details

The aim of this diploma is to provide students with a blend of management skills to successfully work in any aspect of commercial forestry in New Zealand, applied in areas as diverse as forest management, forestry or harvesting operations, contract management, log product logistics, supply chain management, or commercial and financial analysis.

| Course Code | Course Title | Level | Credits |
|---------------------------|-------------------------------------------|-------|---------|
| Compulsory Courses | | | |
| FMAN.4101 | Forest Industry Overview | 4 | 15 |
| FMAN.4102 | Forestry Science | 4 | 15 |
| FMAN.4103 | Forest Information Systems and Technology | 4 | 15 |
| BADM.5001 | Managing People and Conflict Resolution | 5 | 15 |
| FMAN.5105 | Harvesting Operations | 5 | 15 |
| FMAN.5106 | Forestry Operations | 5 | 15 |
| FMAN.5107 | Forestry Process Analysis and Improvement | 5 | 15 |
| FMAN.5108 | Forestry Business Systems | 5 | 15 |
| FMAN.6110 | Silvicultural Planning | 6 | 15 |
| FMAN.6111 | Forestry Business Planning | 6 | 15 |
| GENR.6990* | Industry Project | 6 | 15 |

Elective Courses

A total of 75 credits from any Waiariki courses at Level 4 or above, of which a minimum of 30 credits at Level 6 or above is required.

Entry Requirements

Admission and entry requirements for this qualification are in accordance with Waiariki's Academic Regulations (see pages 26 and 27).

National Diploma in Forestry (Operations Management)

Level 5

Credits 208 NZQA/180 Waiariki

1½ years full-time, or part-time equivalent

Semester 1

Rotorua



Qualification Details

This national diploma develops the range of operational management skills and knowledge required for people who aspire to manage operations in a commercial plantation forest on a sustainable basis.

Students will gain a sound general knowledge of all aspects of the planning and management of commercial plantation forests, including people management, technical forestry, applied science, business management, process improvement and financial skills.

| Course Code | Course Title | Level | Credits |
|-------------|--------------|-------|---------|
|-------------|--------------|-------|---------|

Compulsory Courses

| | | | |
|------------|-------------------------------------------|---|----|
| FMAN.4101 | Forest Industry Overview | 4 | 15 |
| FMAN.4102 | Forestry Science | 4 | 15 |
| FMAN.4103 | Forest Information Systems and Technology | 4 | 15 |
| BADM.5001 | Managing People and Conflict Resolution | 5 | 15 |
| FMAN.5105 | Harvesting Operations | 5 | 15 |
| FMAN.5106 | Forestry Operations | 5 | 15 |
| FMAN.5107 | Forestry Process Analysis and Improvement | 5 | 15 |
| FMAN.5108 | Forestry Business Systems | 5 | 15 |
| FMAN.5109 | Forest Supply Chain Management | 5 | 15 |
| FMAN.6110 | Silvicultural Planning | 6 | 15 |
| FMAN.6111 | Forestry Business Planning | 6 | 15 |
| GENR.6990* | Industry Project | 6 | 15 |

Entry Requirements

Admission and entry requirements for this qualification are in accordance with Waiariki's Academic Regulations (see pages 26 and 27).

Forest Management

Diploma in Forest Operations

Level 5

Credits 120

1 year full-time, or part-time equivalent

Semester 1

Rotorua

Qualification Details

The aim of this qualification is to provide an entry level qualification in forest operations management for those students who wish to commence work in junior management roles in forestry or harvesting operations in the New Zealand forest industry. This diploma also provides the initial platform for students to progress towards a National Diploma in Forestry (Operations Management) (Level 5), a Diploma in Forest Management (Level 6) or a degree qualification in forestry science or applied management.

| Course Code | Course Title | Level | Credits |
|---------------------------|-------------------------------------------|-------|---------|
| Compulsory Courses | | | |
| FMAN.4101 | Forest Industry Overview | 4 | 15 |
| FMAN.4103 | Forest Information Systems and Technology | 4 | 15 |
| FMAN.5105 | Harvesting Operations | 5 | 15 |
| FMAN.5106 | Forestry Operations | 5 | 15 |
| FMAN.5107 | Forestry Process Analysis and Improvement | 5 | 15 |
| FMAN.5108 | Forestry Business Systems | 5 | 15 |

Elective Courses

A total of 30 credits from any Waiariki courses, of which a minimum of 15 credits at Level 5 or above is required.

Entry Requirements

Admission and entry requirements for this qualification are in accordance with Waiariki's Academic Regulations (see pages 26 and 27).



Student Profiles



Simon Honour is a very talented young man with a bright future ahead of him. With a strong family connection in New Zealand's forest industry, Simon has forestry in the blood.

After successfully graduating from Rotorua Boys' High School in 2007, Simon enrolled on the National Diploma in Forest Management taught by Waiariki's School of Forestry and Primary Industries. "The practical side of the course has been great and I have really enjoyed being outdoors in varied, live working environments," he said.

Using a combination of forestry knowledge, initiative and the latest technology, Simon and his classmates have the ability to quickly comprehend what is taking place in real-time forestry operations. They are work ready upon graduation and have a plethora of job opportunities waiting for them.

Simon balances his study with his passion for cycling. He has represented New Zealand, competing at the highest levels in his age group nationally and internationally. Waiariki Academy of Sport has provided support through specific coaching, fitness training and sports nutrition all fitted around his busy study schedule.

"My passion is for cycling and racing. But, I still want to work outdoors, in the forests of New Zealand."

Just two and half years after moving to New Zealand from India, **Harpreet Singh's** standout performance as a student made him an in-demand commodity.



Local management company Interpine Forestry Ltd. sought out Harpreet even before he finished his studies at Waiariki Institute of Technology. Once he completed the National Diploma in Forestry (Forest Management) earlier this year, with excellent grades and high commendations from his Waiariki lecturers, Harpreet went straight to work as a forest technician.

Harpreet's role at Interpine focuses on data collection and analysis which includes data plotting, measuring forest inventory and forest valuation. After just four months in the role he has already travelled throughout the North Island and to Australia for special projects.

Harpreet came to New Zealand in 2008 to study. "I chose New Zealand because it's one of the few countries which provides good opportunities for international students," he said.

"My experience at Waiariki has been excellent. The support given by my tutors and classmates helped me a lot. I feel Waiariki is one of the best places to study in New Zealand."

What are Harpreet's goals? "I am very flexible and keeping my options open in terms of the type of position that may arise in future," he said. "As I am new to the forest industry, my first target is to gain some experience before I can aim for my future years. If I get a chance later on, I would go for the Bachelor of Applied Management."

Wood Manufacturing

We look forward to teaching you:

- Understanding different types of wood
- Managing and planning production
- Manufacturing excellence

Wood Manufacturing

Certificate in Solid Wood
Manufacturing Advanced
Technical Operations Level 5

Diploma in
Manufacturing
Level 5

Bachelor of Applied Management Level 7

CAREERS YOU CAN AIM FOR:

Industrial measurement and control technician, process engineer (chemical), production manager, pulp and paper production worker, saw doctor, sawmill operator or manager, timber grader or machinist, optimisation engineer, computer programmer, quality control specialist

What industry opportunities are there?

There is a huge range of jobs within the wood industry providing the option to work both indoors and out. A good percentage of industry managers are those who started at the bottom and worked their way up, gaining further skills required to carry out their job and manage people as they go. Continuous training is important to keep up with technology and keep skills up to date.

The type of work you could find yourself doing:

- Operating machinery to cut wood to correct specifications
- Grading timber into categories
- Checking the quality of goods produced
- Managing and supervising employees and the production process
- Maintenance jobs like saw doctoring which includes the maintenance of all saws used in the sawmills
- Optimising machinery and equipment to achieve maximum efficiencies
- Engineering, computer programming, scheduling production

If you're looking for variety, a range of employment opportunities and advancements, wood manufacturing is a job for the future!

Diploma in Manufacturing

Level 5

Credits 120

1 year full-time, or part-time equivalent

Semester 1

Rotorua



Qualification Details

This diploma provides a sound knowledge of underpinning applied management theory as applicable to the manufacturing industry, to enable students to analyse manufacturing operations and make critical decisions on improvement activities and processes at an operational level. New courses have been included for students to be able to interact with and demonstrate a practical knowledge of existing and evolving specialist industry technology used in the manufacturing sectors. A strong emphasis is placed on wood manufacturing process.

| Course Code | Course Title | Level | Credits |
|---------------------------|-------------------------------------------------------------|-------|---------|
| Compulsory Courses | | | |
| WPRO.5012 | Process Analysis in Manufacturing | 5 | 15 |
| WPRO.5013 | Manufactured Products Costing | 5 | 15 |
| WPRO.5014 | Operations Management in Manufacturing | 5 | 15 |
| WPRO.5015 | Quality Improvement and Manage Maintenance in Manufacturing | 5 | 15 |
| WPRO.5016 | Optimisation Project in Manufacturing | 5 | 15 |

Options List

| | | | |
|-----------|-----------------------------------------------------|---|----|
| WPRO.5018 | Enhancing Wood Products | 5 | 15 |
| WPRO.4056 | Manufacturing Process Systems | 4 | 15 |
| MGMT.5002 | Business Management and Leadership in Manufacturing | 5 | 15 |
| WPRO.4058 | Optimising Methods for Manufacturing Operations | 4 | 15 |
| MGMT.5208 | Fundamentals of Project Management | 5 | 15 |

Electives

30 credits Any two 15-credit Waiariki course

Entry Requirements

Admission and entry requirements for this qualification are in accordance with Waiariki's Academic Regulations (see pages 26 and 27).

Forest Operations

We look forward to teaching you:

- Maintenance, sharpening and operation of a chainsaw
- Chainsaw code of practice
- Health and Safety in Forest Operations
- Health and nutrition for forestry workers
- First Aid
- Knowledge of log making
- Process and cut stems to length

What industry opportunities are there?

The Ministry of Agriculture and Forestry (MAF) is predicting increases in the amount of wood that will be available in the next few years. The required number of workers to meet this demand is set to increase as well. Now is the time to train and be ready for the employment opportunities that lay ahead.

Forest operations jobs can include working in indigenous (native) or commercial forests where you may:

- Cut logs to length (including processing stems on a landing)
- Operate and maintain a chainsaw
- Work safely in a logging environment

The opportunity to work as a part of a close knit team in an outdoor environment is a very attractive one. Forest operations combines hard work with the opportunity to be outdoors on a daily basis.



Certificate in Forest Operations

Level 3

Credits 90

4 months full-time

Various dates

Rotorua, Whakatane, Taupo, Tokoroa

Qualification Details

The aim of this qualification is to provide students with a broad background of practical forestry knowledge and skills enabling them to progress into employment or onto higher courses where they can study specific forestry topics.

| Course Code | Course Title | Level | Credits |
|-------------|---------------------------------------------------|-------|---------|
| FAID.3001 | Workplace First Aid | 3 | 5 |
| FROP.2003 | Forestry Knowledge 2 | 3 | 15 |
| FROP.3006 | Environmental and Commercial Forestry | 3 | 15 |
| FROP.3001 | Introductory Chainsaw Safety and use | 3 | 10 |
| FROP.3009 | Maintain a chainsaw and Cut Logs to Length | 3 | 15 |
| FROP.3008 | Introduction to Landing Operations and Log Making | 3 | 15 |
| FROP.3007 | Operate a Chainsaw | 3 | 15 |

Entry Requirements

Admission and entry requirements for this qualification are in accordance with Waiariki's Academic Regulations (see pages 26 and 27).



Forest Operations

Certificate in Forestry Fundamentals

Level 3

Credits 120

1 year full-time, or part-time equivalent

Semester 1

Whakatane

Qualification Details

The aim of this qualification is to provide students with a broad background of fundamental forestry knowledge, enabling them to progress onto higher qualifications where they can study specific forestry topics.

| Course Code | Course Title | Level | Credits |
|-------------|--------------|-------|---------|
|-------------|--------------|-------|---------|

Compulsory Courses – 30 Credits

| | | | |
|-----------|-----------------------------------------|---|----|
| FROP.2003 | Forestry Knowledge 2 | 2 | 15 |
| FAID.3001 | Workplace First Aid | 3 | 5 |
| FROP.3001 | Introduction to Chainsaw Safety and Use | 3 | 10 |

CORE OPTIONS – a minimum of 75 credits from the courses listed below

| | | | |
|-----------|---------------------------------------------------|---|----|
| FROP.2002 | Forestry Knowledge 1 | 2 | 15 |
| FROP.2004 | Forest Establishment and Silviculture 1 | 2 | 15 |
| FROP.2005 | Forest Establishment and Silviculture 2 | 2 | 15 |
| FROP.2007 | Landing Operations | 2 | 15 |
| FROP.2008 | Breaking Out | 2 | 15 |
| FROP.2009 | Forest Pruning | 2 | 15 |
| FROP.3002 | Generic Fire Fighting and Vegetation Fire Control | 3 | 15 |
| FROP.3004 | Establishment, Environment and Log-making | 3 | 15 |
| FROP.3005 | Production Waste Thinning | 3 | 15 |
| FROP.3007 | Operate a Chainsaw | 3 | 15 |
| FROP.3021 | Forest Establishment and Silviculture 3 | 3 | 15 |
| FROP.3023 | Establishment Releasing | 3 | 15 |
| FROP.3024 | Forestry Knowledge and Silviculture | 3 | 15 |
| AGRI.3101 | Agri Vehicles | 3 | 15 |
| FROP.4002 | Mensuration | 4 | 15 |

Electives

A total of 15 credits from any Waiariki course at Level 3 or above

Entry Requirements

Admission and entry requirements for this qualification are in accordance with Waiariki's Academic Regulations (see pages 26 and 27).

We look forward to teaching you:

- Problem-solving skills
- Hands-on, practical skills
- Skills for applying energy sources and their efficiencies
- Knowledge of energy, energy efficiency and production
- Ability to understand optimisation of resources, processes and product flows

What industry opportunities are there?

The number of opportunities has increased over the years due to increased government and industry funding for renewable energy related research and a growing number of environmental issues. This growth in demand has created a shortage of skilled people in this industry.

Places you could work might be:

- **Local authorities** – regional, city and district councils
- **Consultancy** – provide expertise and advice on energy and environmental issues to industry, government agencies and other organisations
- **Business and industry** – environmental action by industry is largely driven by legislation and the requirement for environmental impact assessment in the planning stage of developments
- **Media and public relations** – there has recently been an enormous growth in the environmental media industry, with television, radio, magazines, books, websites, exhibits and interpretation centres contributing to the quality and amount of material available
- **Teaching and research** – many schools, colleges and universities cover topics on ecology and environmental management

Environmental and sustainable energy occupations are the way of the future, and there are many different exciting opportunities that you could pursue to make a difference to our world.

Environmental

Diploma in Sustainable Energy

Level 5

Credits 120

1 year full-time, or part-time equivalent

Semester 1

Rotorua



Qualification Details

This diploma creates awareness of the social, cultural, global and environmental impacts of energy technology, and the principles sustainable energy development. The knowledge and practical skills achieved will provide the skills required for employment within the operational areas of renewable energy producers, retailers and users.

| Course Code | Course Title | Level | Credits |
|-------------|--------------|-------|---------|
|-------------|--------------|-------|---------|

Compulsory Courses – 45 credits

| | | | |
|-----------|----------------------|---|----|
| BTEC.5001 | Understanding Energy | 5 | 15 |
| BTEC.5002 | Energy Management | 5 | 15 |
| BTEC.5006 | Sustainable Housing | 5 | 15 |

Options List – 45 credits

| | | | |
|-----------|-------------------------------------------------------|---|----|
| BTEC.4001 | Solid Fuel Appliance Installation | 4 | 15 |
| MGMT.5208 | Fundamentals of Project Management | 5 | 15 |
| BTEC.5007 | Renewable Electricity Systems | 5 | 15 |
| BTEC.5008 | Integrated Space and Water Heating Systems | 5 | 15 |
| COMM.5000 | Communication, Problem Solving, and Health and Safety | 5 | 15 |
| BTEC.5003 | Energy Production | 5 | 15 |
| BTEC.5004 | Sustainable Energy Systems | 5 | 15 |

Electives

30 credits Any two 15-credit Waiariki course

Entry Requirements

Admission and entry requirements for this qualification are in accordance with Waiariki's Academic Regulations (see pages 26 and 27).

We look forward to teaching you:

- The basics and applications of tissue culture methods and systems
- Plant propagation, preparation of media, and plant growth and development
- Embryo culture, micro-organisms in culture
- The effects of the microenvironment on plant growth
- Multiplication and rooting of shoots
- Tissue culture in biosecurity and plant imports/exports
- How to use the Ministry of Agriculture and Forestry's website
- Biofuels

What industry opportunities are there?

Research officer, research assistant, laboratory technician

Biotechnology

Certificate in Horticulture
Level 4

Short Course Certificate in
Plant Biotechnology Level 5

CAREERS YOU CAN AIM FOR:

Lab technician, university study,
research assistant, scientist,
biologist, quality control officer,
analyst

Biotechnology

Short Course Certificate in Plant Biotechnology

Level 5

Credits 30

1 semester part-time

Semester 1 & 2

Rotorua

Qualification Details

This short course certificate provides the knowledge and practical aspects of plant tissue culture and its applications in plant biotechnology, for example biosecurity, biotechnology, propagation molecular biology, plant breeding and with micro-organisms.

| Course Code | Course Title | Level | Credits |
|-------------|--------------|-------|---------|
|-------------|--------------|-------|---------|

Compulsory Courses

| | | | |
|-----------|-----------------------------|---|----|
| BTEC.5010 | Applied Plant Biotechnology | 5 | 15 |
|-----------|-----------------------------|---|----|

Options List (choose 1)

| | | | |
|-----------|----------------|---|----|
| BTEC.5011 | Tissue Culture | 5 | 15 |
| BTEC.5012 | Biosecurity | 5 | 15 |
| BTEC.5013 | Biofuels | 5 | 15 |

Entry Requirements

Admission and entry requirements for this qualification are in accordance with Waiariki's Academic Regulations (see pages 26 and 27).



We look forward to teaching you:

- Plant growth and care
- Landscape design
- Practical skills
- Theoretical knowledge of horticulture

What industry opportunities are there?

Gardener, landscape designer, fruit or vegetable grower, orchard staff, nursery worker, plant retail, contractor, parks and reserves staff, advisor, researcher

Horticulture

Certificate in Horticulture
Level 4

Short Course Certificate in
Plant Biotechnology Level 5

CAREERS YOU CAN AIM FOR:

Lab technician, university study,
research assistant, scientist,
biologist, quality control officer,
analyst



Certificate in Horticulture

Level 4

Credits 120

1 year full-time, or part-time equivalent

Semester 1

Rotorua, Whakatane

Qualification Details

This certificate, which includes embedded national certificates, provides students with the skills and knowledge required for employment in the horticulture industry and encourages ongoing learning in the horticulture field.

| Course Code | Course Title | Level | Credits |
|-------------|--------------|-------|---------|
|-------------|--------------|-------|---------|

Compulsory Courses

| | | | |
|-----------|-----------------------------------------------|---|----|
| HORT.2019 | Gardening, Weeds and Vegetable Production | 2 | 15 |
| HORT.3007 | Plant Science | 3 | 15 |
| HORT.3016 | Soils and Factors That Influence Plant Growth | 3 | 15 |
| HORT.4016 | Pests, Diseases and Disorders of Plants | 4 | 15 |

Options List – 45 Credits

| | | | |
|-----------|-----------------------------------------------------------|---|----|
| HORT.3005 | Pruning Trees and Shrubs – Theory and Practical | 3 | 15 |
| HORT.4015 | Plant Propagation | 4 | 15 |
| HORT.4003 | Landscape design – drawing principles and plant selection | 4 | 15 |
| HORT.5003 | Landscape Design and Maintenance | 5 | 15 |
| HORT.3020 | Agrichemical Safety and Use | 3 | 15 |
| HORT.4018 | Fruit Production | 4 | 15 |
| HORT.4019 | Nursery Production | 4 | 15 |
| HORT.3017 | The Landscape Industry | 3 | 15 |
| HORT.4012 | Landscape Principles and Design | 4 | 15 |
| HORT.4020 | Principles of Organic Gardening and Production | 4 | 15 |
| FAID.3001 | Workplace First Aid | 3 | 5 |
| FROP.3001 | Introductory Chainsaw Safety and Use | 3 | 10 |

Electives

15 credits Any one 15-credit Waiariki course

Entry Requirements

Admission and entry requirements for this qualification are in accordance with Waiariki's Academic Regulations (see pages 26 and 27).

Turf Management

We look forward to teaching you:

- How to care for turf year round
- How to safely use and maintain the tools and equipment of the trade
- Knowledge of pests, weeds and diseases that affect turf and gardens
- How to prune trees and shrubs

What industry opportunities are there?

Green keeper, assistant, manager, advisor, developer or designer of golf courses, sports grounds, parks and reserves, or race courses



Turf Management

Certificate in Turf Maintenance and Management

Level 4

Credits 120

1 year full-time, or part-time equivalent

Semester 1 & 2

Rotorua

Qualification Details

The aim of this qualification is to provide students with the knowledge and skills required for the maintenance of turf areas and fundamental turf management practices, including the practical application of maintenance tools and equipment that are essential for competence in the turf industry at an operational tradesperson level.

| Course Code | Course Title | Level | Credits |
|-------------------------------------------------|---------------------------------|-------|---------|
| Compulsory Courses (total of 75 credits) | | | |
| FAID.3001 | Workplace First Aid | 3 | 5 |
| WSFE.3001 | Core Health and Safety Practice | 3 | 10 |
| HORT.3020 | Agrichemical Safety and Use | 3 | 15 |
| AGRI.3101 | Agri-vehicles | 3 | 15 |
| HORT.4022 | Turf Weeds, Pests and Diseases | 4 | 15 |
| HORT.4023 | Turf Growth and Maintenance | 4 | 15 |

Options List (total of 15 credits)

| | | | |
|-----------|------------------------------------------------|---|----|
| MENG.2206 | Farm Maintenance | 2 | 15 |
| HORT.4021 | Pruning Trees and Shrubs: Theory and Practical | 4 | 15 |
| COMM.4412 | Workplace Communication | 4 | 15 |

Electives

A total of 30 credits from any Waiariki course(s).

Entry Requirements

Admission and entry requirements for this qualification are in accordance with Waiariki's Academic Regulations (see pages 26 and 27).

We look forward to teaching you:

- Care and management of farm animals to efficiently produce milk, meat and/or fibre
- Practical skills involved with farm machinery, driving tractors, motorbikes, and heavy machinery
- Cultivating land, and planting, caring for and harvesting crops
- To work competently with livestock
- To competently work in a dairy shed or woolshed
- To identify farm hazards and recognise safety issues
- Business management such as budgeting and accounting



What industry opportunities are there?

Agriculture is one of New Zealand's largest industries and New Zealand is the world's largest dairy and sheep meat exporter. A general shortage of hands-on agricultural workers, especially in supervisory or management positions, exists throughout the country.

The type of work they can do includes:

- Farm working roles such as shepherd, tractor driver or dairy farm assistant
- Managing roles such as stock manager, operations manager, sharemilker, farm manager, or owner
- Servicing roles such as a shearer, fencer, spray contractor
- Science roles such as advisor, animal nutritionist, or soil and fertiliser specialist
- Business roles such as farm accountant, consultant, rural valuer, or university lecturer

With the size and complexity of today's farms, employers are increasingly looking for tertiary-qualified, multi-skilled staff.

A qualification in agriculture could lead into careers in rural engineering, veterinary service, artificial breeding, rural sales, and more, with additional specialist education.

Certificate in Agriculture and Farm Maintenance

Level 3

Credits 120

1 year full-time, or part-time equivalent

Semester 1

Rotorua, Taupo, Tokoroa, Whakatane

Qualification Details

This certificate, which includes an embedded national certificate, provides the skills and knowledge related to general farming requirements, such as pasture production, soils, calculations specific to primary production situations, and general maintenance on the farm. Elective strands provide opportunities for students to develop skills to specific farming situations.

| Course Code | Course Title | Level | Credits |
|-------------|--------------|-------|---------|
|-------------|--------------|-------|---------|

Compulsory Courses

| | | | |
|-----------|-----------------------------------------|---|----|
| AGRI.2100 | Livestock Health and Behaviour | 2 | 15 |
| MENG.2201 | Farm Maintenance | 2 | 15 |
| AGRI.3100 | Fencing for the Farm | 3 | 15 |
| AGRI.3101 | Agri-vehicles | 3 | 15 |
| AGRI.3106 | Rural Hazards and Machinery Maintenance | 3 | 15 |

Options List (choose 3)

| | | | |
|-----------|----------------------------------|---|----|
| AGRI.3102 | Wool Shed Operations and Lambing | 3 | 15 |
| AGRI.3108 | Cattle and Dairy Farming | 3 | 15 |
| HORT.4014 | Pastures, Crops and Plants | 4 | 15 |

Electives

| | | | |
|-----------|-----------------------------------------|---|----|
| FAID.3001 | Workplace First Aid | 3 | 15 |
| FROP.3001 | Introduction to Chainsaw Safety and Use | 3 | 15 |

Entry Requirements

Admission and entry requirements for this qualification are in accordance with Waiariki's Academic Regulations (see pages 26 and 27).

Frequently Asked Questions

Q What kind of support can I expect from Waiariki?

- Drop-in support of our friendly International Team,
- The Library Learning Centre offers a full range of resources available for your study needs
- Learner Support is available for extra assistance outside of class, to develop study and English writing skills and test techniques for exams
- Health and Counselling – confidential comprehensive health services are available on campus
- Access to computer suites to work on assignments outside class hours
- A café and restaurant are conveniently located on campus
- Waiariki's Rotorua campus supports a wireless network, so you can bring your own computer if you wish
- Students' Association (WITSA) membership is included in your fees. WITSA is run by students for students, providing social activities, academic and personal help

Q How do I know I'm getting a high quality education and support from Waiariki?

Waiariki is a government-owned tertiary education provider registered with the New Zealand Government and holds Quality Assured status.

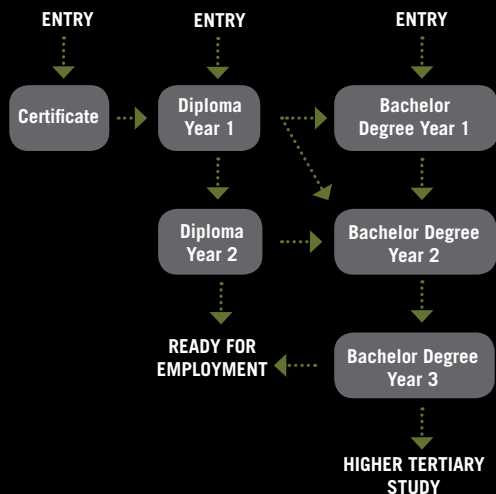
Q What social activities are available to take part in?

Numerous sports clubs, student events and special events take place on Waiariki campuses throughout the year. These provide great opportunities for you to have fun while meeting people and making new friends. The International Team publishes an annual calendar of events and activities that you are welcome and encouraged to attend.

The new Waiariki Community Recreation Centre on the Rotorua campus provides a gymnasium, weights room, squash court, and fitness classes. Sports clubs in badminton, basketball, football and more are included in the affordable membership fees.

As a tourist town, surrounded by natural beauty, the city hosts many fun activities and events, geothermal features, water activities on many lakes, mountain biking, river kayaking and rafting, golf, summer tramping, athletic competitions and Māori cultural activities. Some of New Zealand's best beaches are within a one-hour drive. In just two and half hours from Rotorua, you can be skiing on majestic snow capped mountains.

Students can enter and exit from qualifications at different stages, with flexible options.



Waiariki Term & Semester Dates

Summer Semester 2011

Term 6 10 January to 28 January 2010

Semester One

Term 1 14 February to 15 April 2011

Term 2 2 May to 17 June 2011

Semester Two

Term 3 11 July to 2 September 2011

Term 4 12 September to 18 November 2011

Summer Semester 2011-12

Term 5 28 November to 16 December 2011

Term 6 9 January to 27 January 2012

*The dates listed above apply to most courses.
Some start dates and term breaks may vary.*

Entry Requirements

EXTRACT FROM WAIARIKI'S ACADEMIC STATUTE

20.0 ACADEMIC ADMISSION AND ENTRY

- 20.1 The admission and eligibility criteria for qualifications or courses shall be in accordance with Section 224 of the Education Act 1989. Admission and entry criteria specific to a qualification or course shall be set out in the variations to academic regulations. The entry requirements shall be such that each student can reasonably expect to achieve the learning outcomes of the qualification/course, but shall not constitute an unreasonable barrier to entry. Refusal of entry must be justifiable.
- 20.2 Only the Chief Executive (by delegated authority) may refuse to permit the enrolment of a person as a student at Waiariki, pursuant to Section 224(13) of the Education Act 1989 and any other relevant legislation.
- 20.3 Students shall provide acceptable evidence that admission and entry criteria have been met as a condition of entry to a qualification or course.
- 20.4 All documentary evidence required for admission and entry, including academic records, must be either an original or a certified copy.

Age

- 20.5 In accordance with Section 20 of the Education Act 1989, no domestic student under the school leaving age of 16 years may be admitted for any qualification or course at the Institute unless, under Section 25B of the Education Act 1989, permission has been granted by the Principal of the school at which the student is enrolled or, under Sections 21 and 26 of the Education Act 1989, the student has been exempted from attending school by a designated officer of the Ministry of Education. Documentary evidence of Principal permission or Ministry exemption is required before the enrolment of a person under the age of 16 years may proceed.
- 20.6 Domestic persons who have attained the age of 20 years shall be eligible for admission to a qualification or course at Waiariki.

Academic Entry – Domestic Students

- 20.7 The following academic entry criteria is applicable to students under the age of 20 years:
- 20.7.1 entry is open for applicants to certificate and diploma qualifications/courses at levels 1-6.
- 20.7.2 applicants for degree and level 7/8 qualifications/courses must have:
- a minimum of 42 credits at Level 3 or higher on the National Qualifications Framework, including a minimum of 14 credits at Level 3 or higher in each of two subjects from an approved subject list, with a further 14 credits at Level 3 or higher taken from no more than two additional domains on the National Qualifications Framework or approved subjects;
 - a minimum of 14 credits at Level 1 or higher in Mathematics or Pangarau on the National Qualifications Framework; and
 - a minimum of eight credits at Level 2 or higher in English or Te Reo Māori (four credits must be in Reading and four credits must be in Writing).

The literacy credits will be selected from a schedule of approved achievement standards and unit standards.

- 20.7.3 applicants for graduate certificates/diplomas must:
- have completed an undergraduate degree in any discipline; or
 - be able to demonstrate at least three years equivalent practical, professional or educational experience (a curriculum vitae must be submitted detailing relevant work experience and educational achievements).

Academic Entry - International Students

- 20.8 All international students who have the appropriate visa/permit and meet the academic entry and English competency requirements shall be eligible for admission to a qualification or course at Waiariki.
- 20.9 All international students must have a valid New Zealand Immigration Service student visa/permit for the duration of their studies and must fulfil any specific requirements or obligations stipulated under the issue of the visa/permit.
- 20.10 International students who have attained the age of 20 years must provide evidence of a high school diploma or equivalent educational achievement.
- 20.11 International students who have attained the age of 18 years must provide evidence of a high school diploma with no less than "C" grade average (or equivalent).
- 20.12 Eligibility of any international student under the age of 18 years will be determined on an individual basis and approved by the Deputy Chief Executive, Academic Quality and Strategy.

English Competency

- 20.13 International students must be able to demonstrate an adequate level of English that will enable them to meet all health and safety requirements, and to achieve the learning outcomes of the qualification/course on which they enrol.

Credit and Recognition of Prior Learning (RPL)

- 20.18 Students may be admitted at any appropriate point in a qualification by virtue of the grant of credit or as a result of an RPL process.
- 20.19 Applications for the award of credit or RPL must be completed during the enrolment process, by completing the relevant application form.
- 20.20 Where there is an application for the award of credit, such credit should have been awarded within the five years prior to the application.
- 20.21 RPL will be made available for all courses which form part of a programme of study offered by Waiariki.
- 20.22 The fees charged for the awarding of credit and RPL shall be set at the same level as the course fee.
- 20.23 Students may appeal an unsuccessful application to the Chief Executive within ten (10) working days of receipt of the decision.
- 20.24 The Chief Executive may award credit and RPL at his/her discretion.

- 20.25 Any specific conditions, limitations and requirements under which credit or RPL may be granted for a qualification/course must be identified within the variations to academic regulations. In all other cases, the academic regulations will apply.
- 20.26 The maximum award that can be granted through cross credit, specified or unspecified credit and/ or RPL is two-thirds of the credit value of the qualification being sought. There is no maximum limit to the credit that can be granted through credit transfer.
- 20.27 Embedded qualifications are not eligible for award through the granting of credit or RPL.

Disabilities

- 20.28 If students have a disability or impairment that is likely to impact on their ability to participate or demonstrate competency in any aspect of their qualification/course, they must contact the Disabilities Coordinator prior to enrolment in order that an appropriate assessment of their needs and suitable arrangements can be made.
- 20.29 In accordance with Section 60 of the Human Rights Act 1993, the Institute may refuse admission or entry to a student whose disability is such that special facilities and services cannot be reasonably made available to support the student in his/her qualification/course, or where the student's disability may pose a hazard to the student or to others in carrying out the requirements of the qualification/course.

Special Entry Conditions

- 20.30 Variations to academic regulations may stipulate special entry conditions, which may include the following:
- 20.30.1 restrictions placed on entry where an applicant does not meet normal entry requirements;
- 20.30.2 entry that is conditional upon the student attaining satisfactory results in an assessment, course or qualification;
- 20.30.3 limitations on entry where availability of resources and/or Health and Safety requirements may restrict the number of enrolments accepted, or where there are pre-requisite/co requisite requirements.

Selection

- 20.31 Notwithstanding 20.30.3 above selection shall be open to all applicants who meet the required entry criteria.

Waiariki Institute of Technology

Private Bag 3028

Rotorua 3046

New Zealand

Freephone: 0800 924 274

Email: enquiries@waiariki.ac.nz

Fax: 07 346 8985

Web: www.waiariki.ac.nz

Checklist for Your Application

tick box
when
completed

Post, fax, or email your completed Application Form with supporting documents to Waiariki.



Receive your Letter of Offer from Waiariki and apply to the nearest Immigration New Zealand office for a Student Visa.



Make payment of fees to Waiariki and send receipt to Immigration New Zealand office.



Receive your Student Visa and email or fax a copy of your travel details to Waiariki.



Waiariki will confirm your airport pickup and accommodation details if requested.

Disclaimer

Every effort has been made to ensure the information contained in this document is accurate at the time of printing in September 2010. However, no liability can be accepted for any error or omissions or views expressed in this document. Information is subject to change. All courses available are subject to sufficient enrolments being received.

Waiariki National Centre of Excellence for the Forest and Wood Industry

Te Whare Rakau

The Waiariki National Centre of Excellence for the Forest and Wood Industry is a custom designed and built facility dedicated to providing ongoing educational opportunities for people in the forest and wood industries.

The centre is the result of a partnership between Waiariki, FITEC and University of Auckland.

The centre is outfitted with a specialist computer suite used to run computer simulation software relating to forest mapping, forest operations and other related timber applications. The purpose of this facility is to support all the forestry and wood manufacturing courses provided by Waiariki's School of Forestry and Primary Industries including the Diploma in Forestry and the Diploma in Manufacturing.

The aim is to develop technical expertise and research capabilities to equip students with the necessary skills to transform the forest and wood industries from their current commodity orientation to one that focuses on high value-added products for export. Course emphasis is placed upon innovation and the development of products and processes, and upon developing industry leaders that are able to manage the change and transformation processes.



Te Whare Wānanga o Tamaki Makaurau

Waiariki Sawmill

The sawmill is located approximately 10 minutes from Mokoia Campus (Rotorua).

The sawmill is unique in both its size and its flexibility. With an input capacity of approximately 120 full size logs per day, the mill is in constant demand. Unlike many modern sawmills in use by industry today, our mill is designed to handle a wide range of logs and can cut using various methods.

The sawmill is integrated into the total student learning experience. Logs are cut in the mill, transferred to the kilns to be dried, undergo a chemical treatment process to preserve the timber and are then sent to the timber machinists where a finished product is created.

Students carry out utilisation studies where they assess the flow of logs, value and quality outputs. Research projects are also carried out and allow students to enhance and optimise the processes surrounding the wood manufacturing process.



Campus Maps



ROTORUA CAMPUSES

MOKOIA CAMPUS

Mokoia Drive
Private Bag 3028
Rotorua
Phone: 07 346 8999
Fax: 07 346 8768

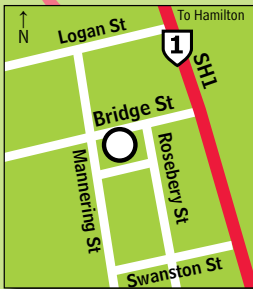
WAIARIKI IN FOCUS

City Focus, Hinemoa Street
Rotorua
Phone: 07 346 8091

WAIPA CAMPUS

Waipa Mill Bypass Road
Rotorua
Phone: 07 346 8600
Fax: 07 346 8614

HAMILTON



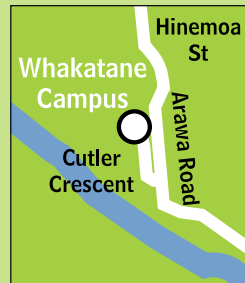
TOKOROA CAMPUS

29 Bridge Street, Tokoroa
Phone: 07 885 0200
Fax: 07 885 0210

WHAKATANE

ROTORUA

TOKOROA



WHAKATANE CAMPUSES

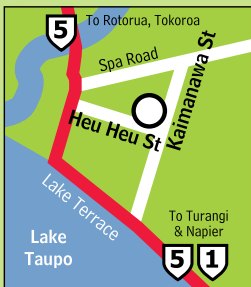
33 Cutler Crescent, Whakatane
Phone: 07 306 0050
Fax: 07 306 0060

WAIARIKI CENTRAL WHAKATANE

3A Esplanade Mall, The Strand
Whakatane
Phone: 07 307 0835

WAIARIKI CENTRAL KAWERAU

Unit F, Tarawera Mall, Kawerau
Phone: 07 323 8158



TAUPO CAMPUS

Corner Heu Heu & Kaimanawa
Streets, Taupo
Phone: 07 376 0030
Fax: 07 376 0040

TAUPO



waiariki

INSTITUTE OF
TECHNOLOGY

Whare Takiura

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