

# Applied Science and Primary Industries



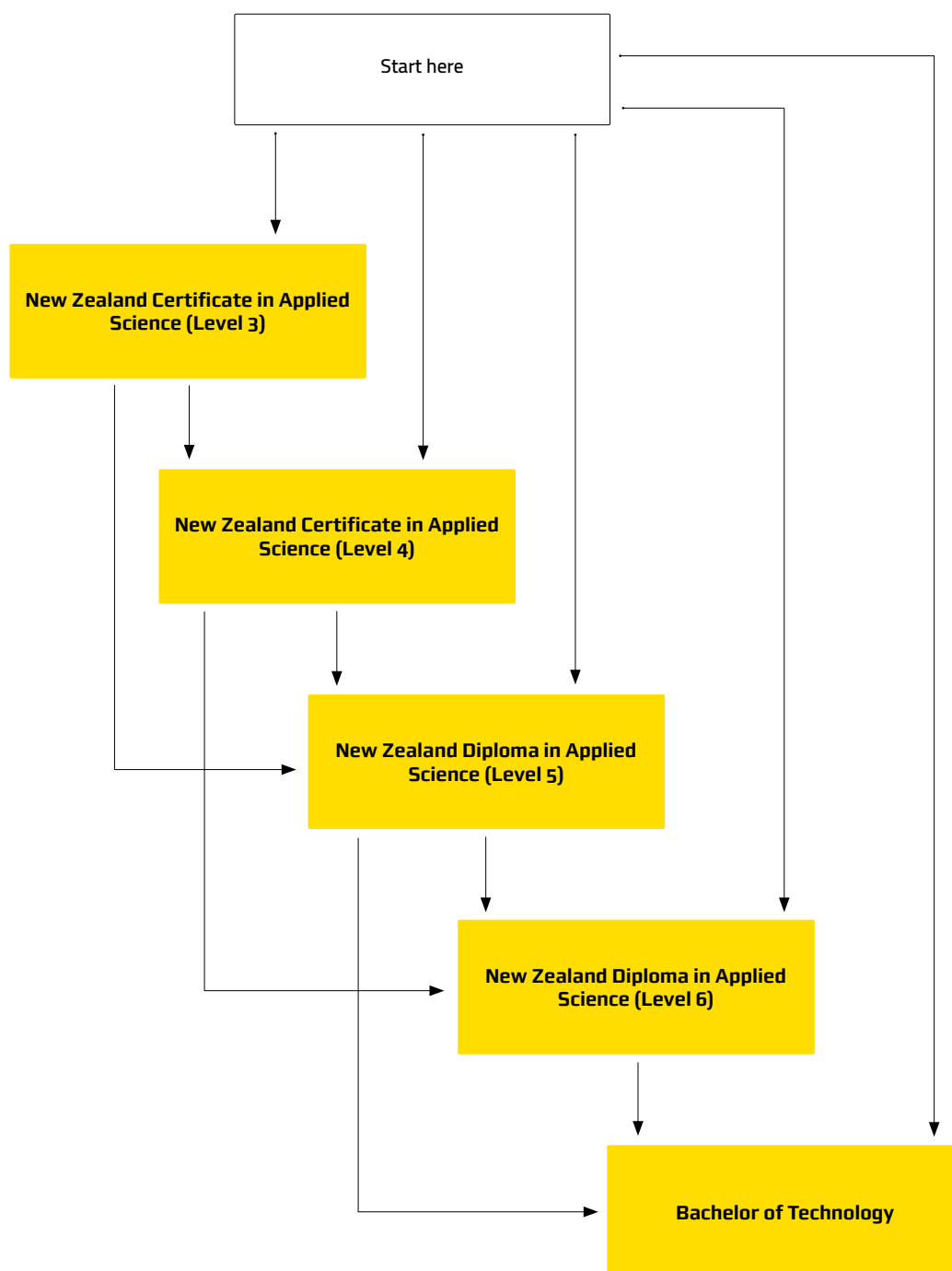




# **APPLIED SCIENCE**

# HOW TO GET THERE

Use this flowchart to choose which pathway will suit your skills level and interests.





## New Zealand Certificate in Applied Science (Level 3) Applied Science 3

**Duration:** One semester  
**Start Date:** 1 February 2017,  
 or 24 July 2017  
**Study Options:** Full-time or part-time  
 equivalent  
**Location:** City Campus

### OVERVIEW

In this programme you'll learn introductory skills and knowledge in science and/or engineering. Applied Science 3 is a great programme for people wanting to gain entry-level positions in manufacturing and regulatory industries, field work, research and development. The programme also provides a pathway into higher levels of study in science or engineering.

Graduates of this programme can progress on to further study in Applied Science 4, or other higher qualifications and programmes in a wide range of engineering or science-related disciplines. Graduates from the engineering context, will be able to go on to further study such as the New Zealand Diploma in Engineering (Level 6).

You will also have the skills and knowledge to work under supervision as an assistant in entry-level operational positions in science, engineering and/or mathematics related fields of work (e.g. manufacturing and regulatory industries, field work, research and development).

### STUDY TOPICS

You'll study one compulsory module 'Professional Skills in Applied Science 1', then you'll be able to choose a context and modules from one of two contexts – Applied Science or Engineering.

### ENTRY CRITERIA

Applicants are required to have:

- A minimum of three years' secondary education; **and**
- Level 1 literacy standards (10 credits) and Level 1 numeracy standards (10 credits); **or**
- A relevant qualification at NZQF Level 2 or above; **or**
- Equivalent

Applicants who have English as a second language are required to have an International English Language Test System (IELTS) academic score of 5.0 across all bands; or equivalent.

Applicants aged over 20 years who do not meet the entry requirements but whose skills, education or work experience indicate that they have a reasonable chance of success, may be eligible for Special Admission at the discretion of the Centre Director, or designated nominee.

Applicants aged under 20 years who do not meet the entry requirements but who can demonstrate a reasonable chance of success through other educational achievements and/or work life experience may be eligible for Provisional Entry, at the discretion of the Centre Director or designated nominee.



## New Zealand Certificate in Applied Science (Level 4) Applied Science 4

**Duration:** One semester  
**Start Date:** 1 February 2017,  
 or 24 July 2017  
**Study Options:** Full-time or part-time  
 equivalent  
**Location:** Rotokauri Campus  
 and City Campus

### OVERVIEW

In this programme you'll learn broad operational and theoretical knowledge in science and/or engineering and mathematics. Applied Science 4 is a great programme for people wanting to gain entry-level operational positions in manufacturing and regulatory industries, field work, research and development. The programme also provides a pathway into higher levels of study in science or engineering.

Graduates of this programme can progress on to further study in Science or Engineering.

You will also have the skills and knowledge to work under supervision in entry-level positions in science and technology-related fields of work including manufacturing and regulatory industries, field work, research and development.

### STUDY TOPICS

Your study will involve a compulsory 'Professional Skills in Applied Science 2' module, you'll then be able to choose a context and modules from one of the two contexts - Applied Science or Engineering.

### ENTRY CRITERIA

Applicants are required to have gained:

- 24 credits at NCEA Level 1, including 12 credits in English or Māori; **or**
- A relevant qualification at NZQF Level 2 or above; **or**
- A Level 3 qualification in science; **or**
- Equivalent

### SPECIAL ADMISSION

Domestic applicants aged 20 years or above who have not met the general admission or entry requirements for a programme but whose skills, education or work experience indicate that they have a reasonable chance of success may be eligible for special admission. Special admission will be granted at the discretion of the relevant Centre Director or designated nominee. Such applicants may be required to successfully complete a foundation, bridging or tertiary introductory programme as a condition of entry into higher level programmes.

### PROVISIONAL ENTRY

Domestic applicants aged under 20 years who have not met the general academic admission and entry criteria for a programme but who can demonstrate a reasonable chance of success through other educational attainment and/or work or life experience may be eligible for provisional entry at the discretion of the relevant Centre Director or designated nominee. Provisional entry places restrictions on re-enrolment to be lifted if the applicant's performance is deemed satisfactory by the relevant Centre Director or designated nominee.

### ENGLISH LANGUAGE REQUIREMENTS

Applicants who have English as a second language are required to have an International English Language Test System (IELTS) score of 5.5 in the academic band, with no individual band score lower than 5.0; or equivalent.

## New Zealand Diploma in Applied Science (Level 5) Applied Science 5

**Duration:** One year  
**Start Date:** 1 February 2017,  
 or 24 July 2017  
**Study Options:** Full-time or part-time  
 equivalent  
**Location:** City Campus

Candidates who have English as a second language are required to have an International English Language Test System (IELTS) score of 5.5 in the academic band, with no individual band score lower than 5.0; or equivalent.

### OVERVIEW

In this programme you'll learn theory and technical knowledge in a range of natural and physical sciences such as chemistry, biology, food nutrition and microbiology and environmental sciences.

Graduates of this programme will be able to work in routine operational positions in science-related fields of work including manufacturing and regulatory industries, field work, research and development.

On successful completion of the programme, graduates can apply to study the New Zealand Diploma in Applied Science (Level 6), or further diploma or bachelor degrees in a wide range of science-related disciplines.

Domestic candidates aged over 20 years who do not meet the entry requirements but whose skills, education or work experience indicate that they have a reasonable chance of success, may be eligible for Special Admission at the discretion of the Centre Director or designated nominee.

Domestic candidates aged under 20 years who do not meet the entry requirements but who can demonstrate a reasonable chance of success through other educational achievements and/or work life experiences, may be eligible for Provisional Entry, at the discretion of the Centre Director or designated nominee.

### STUDY TOPICS

You'll study the following six compulsory modules:

- Professional Skills in Applied Science III
- Practical Skills for Applied Science
- Chemistry
- Biology
- Microbiology
- Organic Chemistry

You'll also get to choose two elective modules.

### ENTRY CRITERIA

Applicants are required to have:

- A minimum of 48 credits at NCEA Level 2, including 12 credits in English **or** Māori; **or**
- A relevant qualification at NZQF Level 3 or above; **or**
- A Level 4 qualification in science; or
- Equivalent

## New Zealand Diploma in Applied Science (Level 6) Applied Science 6

**Duration:** One year  
**Start Date:** Due for delivery February 2018  
**Study Options:** Full-time or part-time equivalent  
**Location:** City Campus

### OVERVIEW

In this programme you'll learn in-depth theoretical and technical knowledge in a specialised field of science(s) such as food technology, environmental technology or biotechnology. You can choose to focus on one pathway in science, or a combination of pathways.

As part of your study you'll undertake a work placement, which will help give you relevant industry experience.

This programme may lead to entry into further study in a bachelor degree in a science-related discipline.

Graduates will be able to work independently in technical positions in a specialised field of science in manufacturing and regulatory industries, field work, research and development.

### STUDY TOPICS

Your study will involve a compulsory work placement, and a minimum of seven elective modules totalling a minimum of 120 credits. Of the 120 credits, a minimum of 75 credits must be at Level 6 or above.

You can choose from modules in:

**Food technology** (the science of food). People who choose this pathway can work in entry level positions as food technologists who develop new food products, analyse the components of food, or; food safety officers who audit the food manufacturing industry.

**Environmental technology** (the science of conservation, biosecurity and environmental management). People who choose this pathway can work in entry level positions as biosecurity officers who help manage pest animal and plant control, and help conserve local environments.

**Biotechnology** (the 'doing' of science, this includes quality assurance of laboratory practices, the analysis of samples and reporting on sample results). People who choose this pathway can work in entry level positions as researchers or laboratory technicians.

### ENTRY CRITERIA

Applicants are required to have gained:

- A minimum of 48 credits at NCEA Level 2, including 12 credits in English or Māori; **or**
- A relevant qualification at NZQF Level 3 or above; **or**
- A Level 5 qualification in Science; **or**
- Equivalent

### SPECIAL ADMISSION

Domestic applicants aged 20 years or above who have not met the general admission or entry requirements for a programme but whose skills, education or work experience indicate that they have a reasonable chance of success may be eligible for Special Admission. Special Admission will be granted at the discretion of the Centre Director or designated nominee. Such applicants may be required to successfully complete a foundation, bridging or tertiary introductory programme as a condition of entry into higher level programmes.

### PROVISIONAL ENTRY

Domestic applicants aged under 20 years who have not met the general academic admission and entry criteria for a programme but who can demonstrate a reasonable chance of success through other educational attainment and/or work life experience, may be eligible for provisional entry at the discretion of the relevant Centre Director or designated nominee. Provisional entry places restrictions on re-enrolment to be lifted if the applicant's performance is deemed satisfactory by the relevant Centre Director or designated nominee.

### ENGLISH LANGUAGE REQUIREMENTS

Candidates who have English as a second language are required to have an International English Language Test System (IELTS) score of 6.0 in the academic band, with no individual band score lower than 5.5; or equivalent.



## Bachelor of Technology

**Duration:** Three years  
**Start Date:** 13 February 2017, or 14 July 2017  
**Study Options:** Full-time or part-time equivalent  
**Location:** City Campus

### OVERVIEW

The Bachelor of Technology is an innovative, practically-orientated and future-focused degree.

It is designed to develop you into a highly skilled work-ready technologist prepared for a career in one of the following four endorsements:

- Biotechnology
- Environmental technology
- Food technology
- Agritechnology

These areas have been chosen for their alignment with local industry and the diverse range of opportunities available for employment.

In this programme you'll learn in-depth theoretical and technical knowledge in a specialised field of science(s) such as food technology, environmental technology, agritechnology or biotechnology.

Depending on your chosen endorsement, you will be able to pursue careers in many areas including: research and animal science, environmental management and ecology, biosecurity and conservation; as well as food technology, engineering and health and safety.

### STUDY TOPICS

You'll take part in group work, projects, student investigations, presentations, field trips and other interactive activities.

In your third year, you will complete an industry-based project relevant to your specific endorsement. Throughout the degree, you can base your assignments on your specific areas of interest.

### ENTRY CRITERIA

Candidates are required to have obtained:

- NCEA Level 3 comprised of 60 credits at NCEA Level 3 or above and 20 credits at NCEA Level 2 or above, including:
- 14 credits each at NCEA Level 3 in Biology, Chemistry and a third approved subject, preferably English; and
- A minimum of 20 credits at NCEA Level 2 in Mathematics; and
- Literacy (10 credits at NCEA Level 2 or above made up of 5 credits each in reading and writing); and
- Numeracy (10 credits at NCEA Level 1 or above).

#### Or

- 80 credits at NCEA Level 2 including;
- A minimum of 20 credits each in Biology, Chemistry and Mathematics and one other approved subject, preferably English; and
- Literacy (10 credits at NCEA Level 2 or above made up of 5 credits each in reading and writing); and
- Numeracy (10 credits at NCEA Level 1 or above).

#### Or

- A relevant qualification at Level 3 on the NZQF or above.

#### Or

- Equivalent.

Provisional entry for one year may be granted in special circumstances to applicants aged under 20 years who have not met the general academic admission and entry criteria but who can demonstrate through other educational attainment and/or work or life experience that they have a reasonable chance of success in the programme.

Special admission may be granted to applicants aged 20 years or above who have not met the general academic admission and entry criteria but whose previous life and/or work experience indicates that they have a reasonable chance of success in the programme. Candidates who have English as a second language are required to have an International English Language Test System (IELTS) score of 6.0, with no individual band score lower than 5.5; or equivalent.

# PRIMARY INDUSTRIES

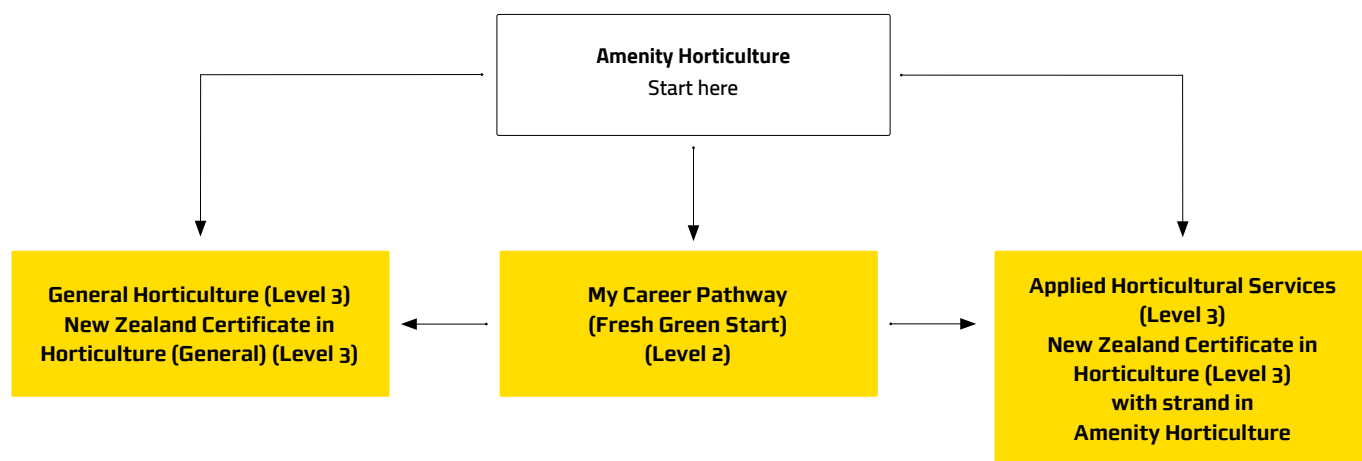


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# HOW TO GET THERE

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Use this flowchart to choose which pathway will suit your skills level and interests.

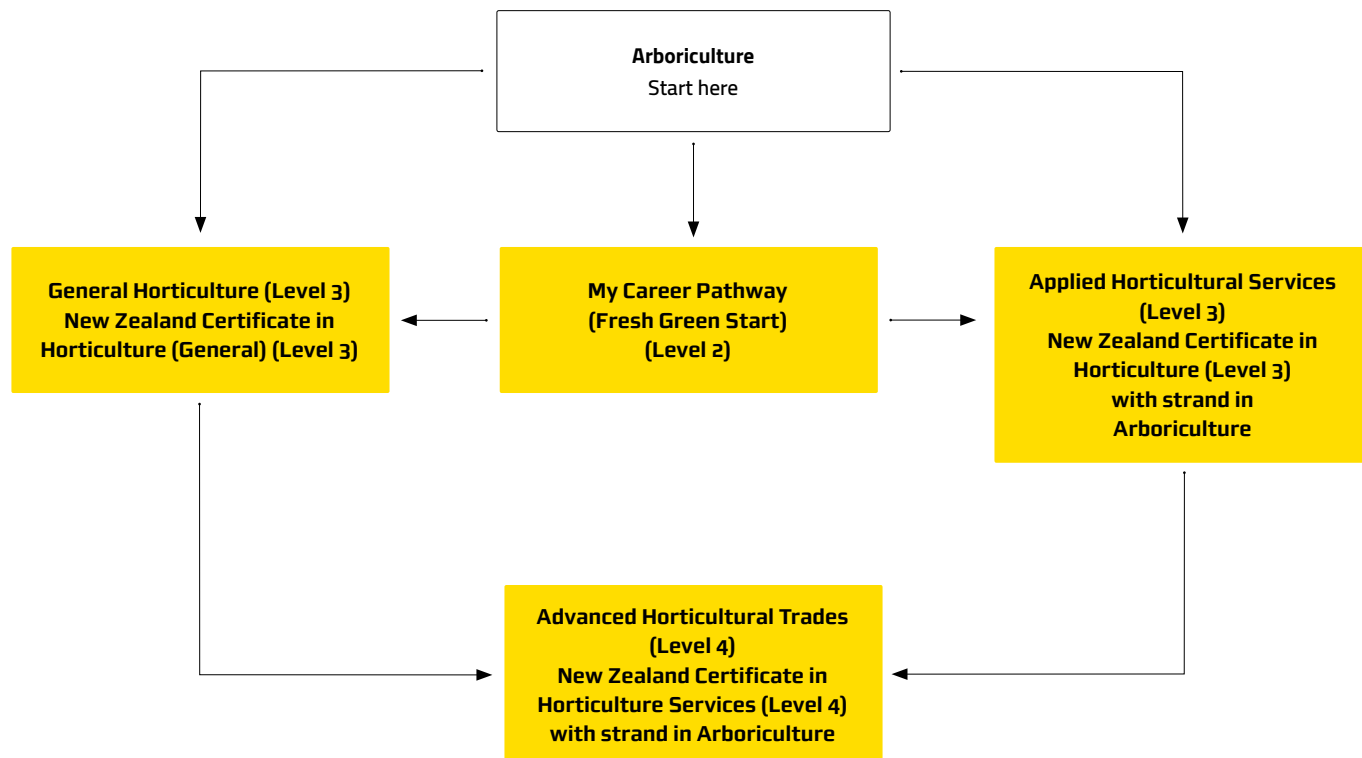


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# HOW TO GET THERE

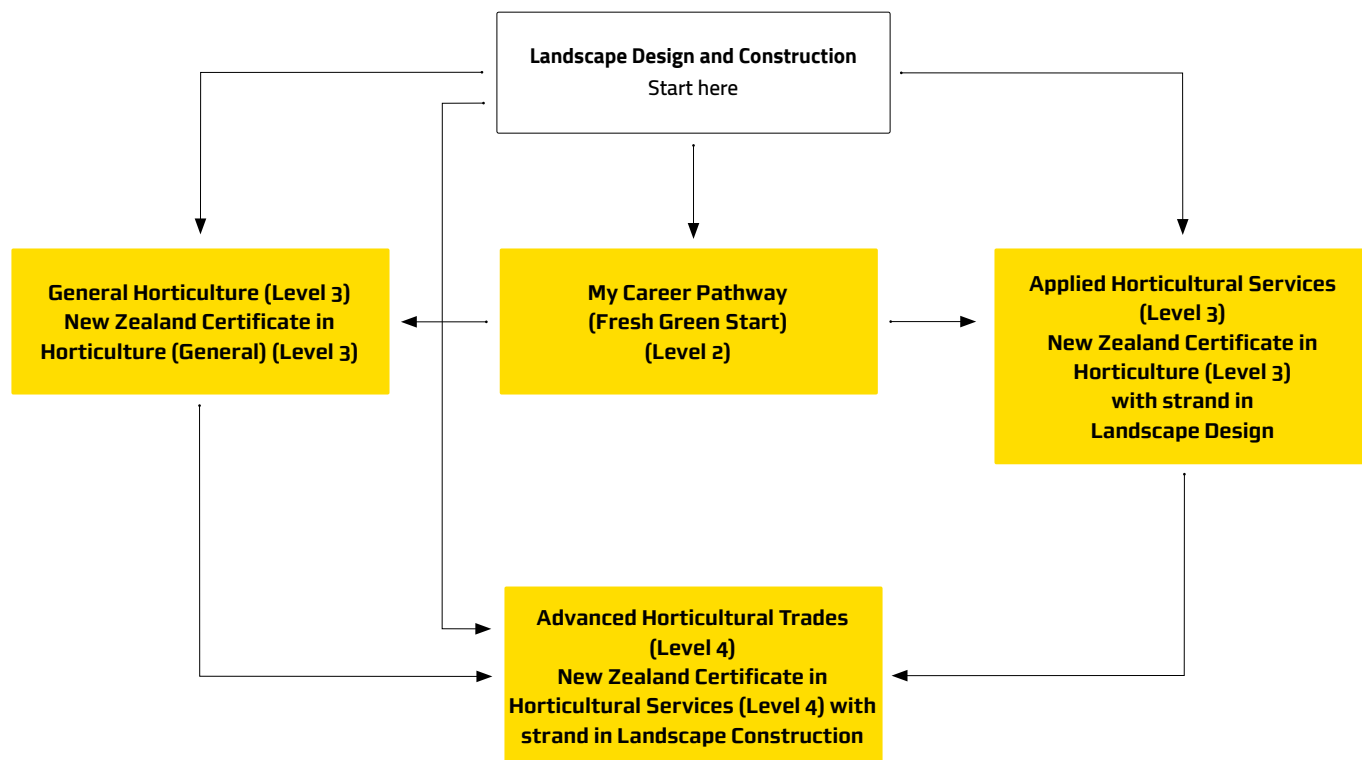
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Use this flowchart to choose which pathway will suit your skills level and interests.



# HOW TO GET THERE

Use this flowchart to choose which pathway will suit your skills level and interests.





## New Zealand Certificate in Foundation Skills (Level 2) My Career Pathway (Fresh Green Start)

**Duration:** Six months  
**Start Date:** 31 January and 24 July  
**Study Options:** Full-time  
**Location:** Rotokauri Campus

### OVERVIEW

Fresh Green Start, is a vocational pathway within My Career Pathway that will give you a taste of Horticulture, Arboriculture and Landscape Construction.

Your study will be hands-on, learning usable skills which will provide you with skills for employment in the horticulture industry or pathway onto higher learning.

All students enrolled full-time on My Career Pathway (Fresh Green Start) receive free personal protective clothing.

In just 6 months you'll learn core skills and capabilities such as self-confidence; horticulture, arboriculture and landscape construction skills and knowledge; literacy and numeracy; and you'll also gain:

- New Zealand Certificate in Foundation Skills level 2
- As well as 60 credits in a vocational pathway
- And a further 20 credits which will count towards the NCEA level 2 qualification

### STUDY TOPICS

In the first two weeks of your programme you'll get a chance to explore all pathways through taster workshops, where you'll then get to choose a pathway that best suits you.

Throughout your programme you'll receive a high level of support from your industry-qualified tutors in a whānau- based learning environment.

You'll work with your whānau tutor/ coach to build an individual learning plan to visually plot your personal journey and goals.

### PROJECT BASED LEARNING

Project based learning is hands-on and makes learning fun and interactive.

You'll work within your class to identify a suitable community and its needs, then with support from your tutor, your class will develop, create and deliver a project that will meet the needs of that community.

Once your class has completed your project the final outcome will then be donated to the designated community it was designed for.

### ENTRY CRITERIA

There is open entry to this programme although you must be a minimum of 16 years old at the commencement of your programme.



## New Zealand Certificate in Horticulture (Level 3) with strands in Arboriculture and Landscape Construction (Applied Horticultural Services)

**Duration:** One semester  
**Start Date:** 24 July 2017  
**Study Options:** Full-time, one semester  
**Location:** Wintec's Horticulture Education Centre at the Hamilton Gardens

### OVERVIEW

Are you thinking about a career in landscape construction or arboriculture? This programme will give you the skills and knowledge to work in industry.

Graduates opportunities include working as an arborist grounds person; or a landscape labourer (depending on the strand studied). Graduates can also choose to continue with further study in their chosen strand.

### STUDY TOPICS

#### ***Landscape Construction strand***

- Landscape design, site and safety
- Landscaping with timber 1
- Landscape surfaces and drainage
- Plants for landscapes
- Landscape maintenance and irrigation

#### ***Arboriculture strand***

- Arboriculture fundamentals
- Planting and establishment of trees
- Tree maintenance (ground)
- Tree maintenance (climbing)

### ENTRY CRITERIA

Applicants are required to: have completed a minimum of three years secondary education; or have gained a relevant qualification at NZQF Level 2 or above; or equivalent.

### SPECIAL ADMISSION

Domestic applicants aged 20 years or above who have not met the General Admission or entry requirements for a programme but whose skills, education or work experience indicate that they have a reasonable chance of success may be eligible for Special Admission. Special admission will be granted at the discretion of the relevant Head of School/Centre Director or designated nominee. Such applicants may be required to successfully complete a foundation, bridging or tertiary introductory programme as a condition of entry into higher level programmes.

### PROVISIONAL ENTRY

Domestic applicants aged under 20 years who have not met the general academic admission and entry criteria for a programme but who can demonstrate a reasonable chance of success through other educational attainment and/or work or life experience may be eligible for provisional entry at the discretion of the relevant Head of School/Centre Director or designated nominee. Provisional entry places restrictions on re-enrolment to be lifted if the applicant's performance is deemed satisfactory by the relevant Head of School/Centre Director or designated nominee.

### ENGLISH LANGUAGE REQUIREMENTS

Candidates who have English as a second language are required to have an International English Language Test System (IELTS) score of 5.5, with no individual band score lower than 5.0; or equivalent.

## New Zealand Certificate in Horticulture (General) (Level 3) General Horticulture

**Duration:** One semester  
**Start Date:** 24 July 2017  
**Study Options:** Full-time  
**Location:** Wintec's Horticulture  
 Education Centre at the  
 Hamilton Gardens

### OVERVIEW

Want to work in the horticulture sector? This programme is ideal for people who want to gain broad introductory general knowledge and skills in horticulture.

As a graduate of this qualification you'll have the knowledge and skills to be employed or self-employed, and/or move flexibly between a range of horticultural enterprises. This qualification will also be suitable for small block owners or for mature learners who wish to gain knowledge of horticultural science in a range of general horticulture growing systems and practices.

### STUDY TOPICS

- Plant science
- Soil science
- Pests and diseases
- Plant establishment
- Weed control

### ENTRY CRITERIA

Applicants will be required to have completed a minimum of three years secondary education; or have a gained a relevant qualification at NZQF Level 2 or above; or equivalent.

### SPECIAL ADMISSION

Domestic applicants aged 20 years or above who have not met the General Admission or entry requirements for a programme but whose skills, education or work experience indicate that they have a reasonable chance of success may be eligible for Special Admission. Special admission will be granted at the discretion of the relevant Head of School/Centre Director or designated nominee.

Such applicants may be required to successfully complete a foundation, bridging or tertiary introductory programme as a condition of entry into higher level programmes.

### PROVISIONAL ENTRY

Domestic applicants aged under 20 years who have not met the general academic admission and entry criteria for a programme but who can demonstrate a reasonable chance of success through other educational attainment and/or work or life experience may be eligible for provisional entry at the discretion of the relevant Head of School/Centre Director or designated nominee. Provisional entry places restrictions on re-enrolment to be lifted if the applicant's performance is deemed satisfactory by the relevant Head of School/Centre Director or designated nominee.

### ENGLISH LANGUAGE REQUIREMENTS

Candidates who have English as a second language are required to have an International English Language Test System (IELTS) score of 5.5, with no individual band lower than 5.0; or equivalent.

Prior to commencing the programme all candidates will be required to undertake a police check at a level sufficient for safe and effective practice within the field of horticulture.

Under Wintec's drug policy and following industry guidelines, candidates will be expected to undertake drug screening at the commencement of this programme.

## New Zealand Certificate in Horticulture Services (Level 4) with strands in Landscape Design (Advanced Horticultural Trades)

**Duration:** One semester  
**Start Date:** July 2017  
**Study Options:** Full-time  
**Location:** Blended delivery  
 (online and on campus)

### OVERVIEW

In this programme you will study the essentials of Landscape Garden Design, learning the knowledge and skills you need to be able to design and produce professional residential Garden plans. As a graduate of this programme you'll have the skills and knowledge to work as a Landscape Designer for garden or small scale designs.

### STUDY TOPICS

- Garden design principles and process
- Plants and planting design
- Garden design representation
- Garden design practice

### ENTRY CRITERIA

- 24 credits at NCEA Level 1 including 12 credits in English or Māori; or equivalent.

### SPECIAL ADMISSION

Domestic applicants aged 20 years or above who do not meet the entry requirements but whose skills, education or work experience indicate that they have a reasonable chance of success may be eligible for Special Admission. Special Admission will be granted at the discretion of the Centre Director or designated nominee. Such applicants may be required to successfully complete a foundation, bridging or tertiary introductory programme as a condition of entry into higher level programmes.

### PROVISIONAL ENTRY

Domestic applicants aged under 20 years who do not meet the entry requirements but who can demonstrate a reasonable chance of success through other educational attainment and/or work or life experience may be eligible for Provisional Entry at the discretion of the Centre Director or designated nominee. Provisional Entry places restrictions on re-enrolment to be lifted if the applicant's performance is deemed satisfactory by the Centre Director or designated nominee.

### ENGLISH LANGUAGE REQUIREMENTS

Candidates who have English as a second language are required to have an International English Language Test System (IELTS) score of 5.5 in the academic band, with no individual band lower than 5.0; or equivalent.





## New Zealand Certificate in Horticulture Services (Level 4) with strand in Arboriculture (Advanced Horticultural Trades)

**Duration:** Two semesters  
**Start Date:** February 2017  
**Study Options:** Full-time  
**Location:** Wintec's Horticulture Education Centre at the Hamilton Gardens

### OVERVIEW

This programme builds on the knowledge gained in the Applied Horticultural Services incorporating specialist techniques and understanding of arboriculture. The emphasis is on practical skills and technical expertise in tree assessment and care.

Those who have completed this qualification are able to demonstrate competence in arboriculture at tradesperson level.

### STUDY TOPICS

- Tree felling
- Tree climbing
- Sectional felling
- Tree pruning and support systems
- Tree work near electric lines
- Tree identification
- Tree biology and health

### ENTRY CRITERIA

- 24 credits at NCEA Level 1 including 12 credits in English or Māori; or equivalent.
- It is recommended that candidates wishing to enrol on the Arboriculture strand of this qualification have completed the New Zealand Certificate in Horticulture (General) (Level 3) and the New Zealand Certificate in Horticulture (Level 3) with Arboriculture strand, or equivalent qualifications or work experience to similar level.

### SPECIAL ADMISSION

Domestic applicants aged 20 years or above who do not meet the entry requirements but whose skills, education or work experience indicate that they have a reasonable chance of success may be eligible for Special Admission. Special Admission will be granted at the discretion of the Centre Director or designated nominee. Such applicants may be required to successfully complete a foundation, bridging or tertiary introductory programme as a condition of entry into higher level programmes.

### PROVISIONAL ENTRY

Domestic applicants aged under 20 years who do not meet the entry requirements but who can demonstrate a reasonable chance of success through other educational attainment and/or work or life experience may be eligible for Provisional Entry at the discretion of the Centre Director or designated nominee. Provisional Entry places restrictions on re-enrolment to be lifted if the applicant's performance is deemed satisfactory by the Centre Director or designated nominee.

### ENGLISH LANGUAGE REQUIREMENTS

Candidates who have English as a second language are required to have an International English Language Test System (IELTS) score of 5.5 in the academic band, with no individual band lower than 5.0; or equivalent.

### OTHER REQUIREMENTS

As some of the practical components within this programme are considered high risk, students may be required to submit to an initial drug screen as per Wintec's Drug & Alcohol Policy.







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## Diploma in Arboriculture (Level 6)

**Duration:** One year  
**Start Date:** 13 February 2017  
**Study Options:** Full-time or part-time equivalent  
**Location:** Wintec's Horticulture Education Centre at the Hamilton Gardens

### OVERVIEW

Wintec's Diploma in Arboriculture (Level 6) combines the best of theoretical classroom work with practical hands-on learning.

Taught in the ideal surroundings of the Hamilton Gardens you will learn introductory arboricultural skills, and then progress on to learn the technical and specialist skills of tree surgery / maintenance and optimise your physical ability using the medium of trees. The programme is mainly taught using real life projects.

This Diploma in Arboriculture (Level 6) is your passport to gaining successful employment as an Arborist in New Zealand or overseas. Wintec has strong relationships in Europe, USA and the UK which you can make the most out of.

Experienced tutors will help you develop a unique range of skills and the ability to apply these skills in new situations in the professional world. You must complete a comprehensive practice report, which shall be submitted to the arboriculture focus group for approval.

This programme is the highest arboriculture qualification currently available in New Zealand. It is currently being benchmarked against qualifications in the United Kingdom to create an international standard and allow you access to overseas universities and higher education institutes.

### STUDY TOPICS

- Tree identification and use
- Contract management
- Report writing and critiques
- Tree inspection and hazard analysis
- Specialist arboriculture practices - tree removals with cranes and helicopters
- Amenity tree evaluation and valuation
- Diagnosing tree health problems
- Your chosen research topic
- Tree biology and mechanics
- Field trips to leading arboreta
- Real life projects
- Professional arboriculture practice and management
- Advanced tree climbing techniques

Courses include NZQA units, which credit towards the National Certificate in Horticulture (Arboriculture).

### ENTRY CRITERIA

- Certificate in Horticulture (Arboriculture) (Level 4), **or**
- Equivalent qualification, **and**
- Minimum one year's experience in arboriculture

To meet legal and health requirements, candidates must be physically able to carry out the practical components of the programme.

As some of the practical components within this programme are considered high risk, students **will** be required to submit to an initial drug screen as per Wintec's Drug and Alcohol Policy.

Special admission may be granted to candidates aged 20 years or over who do not meet the specified entry requirements. These candidates may be required to demonstrate an ability to successfully complete the programme through a process of an interview and / or assessment.

