

BACHELOR OF VITICULTURE BACHELOR OF WINE SCIENCE 2019

Information for International applicants

Located in one of the premium winemaking districts in New Zealand (if not the world) EIT offers two unrivalled degrees in viticulture and wine science. You will discover everything about what makes grapes grow and how wine is made.

You will learn about grape varieties, the soils, the environments they are best suited to and the science involved in turning grapes into wine, one of New Zealand's most famous exports.

The **Bachelor of Wine Science** enables graduates to pursue a professional career in the winemaking industry by providing graduates with expertise in technical, scientific and managerial skills in winemaking.

The **Bachelor of Viticulture** enables graduates to pursue a professional career in viticulture by providing graduates with expertise in the technical, scientific and managerial skills involved in grapegrowing.

In each programme you will learn about the whole industry - grapegrowing to winemaking, as well as wine business skills.

FACILITIES

Facilities include a purpose-built modern teaching and research winery, sensory laboratory, vineyard, and glasshouse. The world-class laboratory complex is fully equipped for all of the sciences and includes specialist wine analysis equipment and an instrument laboratory that contains advanced chemical analytical instruments.

One of New Zealand's largest wine regions, which produces a wide variety of wine styles, is at our doorstep. The Hawke's Bay wine industry is extremely supportive of EIT and provides many opportunities for field trips and practical experience in vineyards and wineries.

CAREER OUTCOMES

Graduating with a degree in Viticulture and/or Wine Science from EIT opens up many career pathways:

- **Bachelor of Viticulture careers:** vineyard manager, viticultural contractor, research and development, owner/operator of a winery/vineyard, wine/viticulture educator or a grower liaison position.
- **Bachelor of Wine Science careers:** winemaker, assistant winemaker, manager in wine, brewing or food industries, research and development or as a wine/viticulture educator.

CAREER OUTLOOK

\$
\$51,634
Median earnings five years
after study

65%
Employment rate
two years after study

Job opportunities



25%
Graduates in further
study after completion



STUDENT PROFILE

Raviraj Jadhav | India

"EIT is the best place for developing your skills and knowledge. The course is well designed and provides work experience in different wineries. I am grateful to EIT for giving me relevant knowledge as well as practical skills."

Qualifications	<ul style="list-style-type: none">• Bachelor of Viticulture• Bachelor of Wine Science
Programme level	Level 7
Duration	<ul style="list-style-type: none">• Bachelor of Viticulture: Three years• Bachelor of Wine Science: Three years
Start dates	18 February and 22 July
Study options	Full-time
Fees	NZ\$ 21,000 per year + \$350 excursion fee
Total number of credits	<ul style="list-style-type: none">• Bachelor of Viticulture: 360 credits• Bachelor of Wine Science: 360 credits
Class times	On campus classes are usually scheduled between 8.00am and 5.00pm Monday to Friday
Individual study hours	Students should plan to spend ten hours of study per course per week including scheduled classroom time.
Location	Napier Campus
Contact	International Centre Phone: +64 6 974 8902 Email: international@eit.ac.nz

PRACTICUM

Courses in the programme that involve off-campus experiential learning are:

- VIT7.08 Winegrowing Industry Experience
- WSC7.11 Winery Industry Experience
- WSC6.07 Wine Production 1
- WSC7.01 Wine Production 2
- VIT7.07 Vineyard Establishment

ENTRY CRITERIA

ACADEMIC ENTRY REQUIREMENTS

Applicants must meet degree standard entry requirements. A good understanding of chemistry, physics, and mathematics is essential.

Applicants must be over 18 years of age on 1 February of the year they apply for entry to this programme. Applicants under 18 years of age may be provisionally accepted into the programme but restricted in which courses they are enrolled in until they turn 18 years of age.

ENGLISH LANGUAGE ENTRY REQUIREMENTS

Approved scores on IELTS (6.0 Academic) with no band score lower than 5.5, or equivalent.

SCHOLARSHIP

There is a scholarship available for this programme. This scholarship provides a small contribution to assist students realise their goal of studying in New Zealand.

All International students who accept an offer of place for this programme will receive the scholarship. Please contact us for more information: international@eit.ac.nz



FIND OUT MORE:

-  international@eit.ac.nz
 www.international.eit.ac.nz

CONNECT WITH US:



EXCURSION

As part of the programme students will participate in a 5 day excursion to the world renowned wine producing regions of Nelson and Marlborough.

This trip provides a fantastic opportunity for students to broaden their understanding of the diverse range of wine produced in New Zealand and an insight into wine produced outside Hawke's Bay.

During the trip students will visit approximately 12 different vineyards and wineries. Students will have the chance to network with vineyard and winery staff, whilst enjoying the company of their fellow students and lecturers.

Cost: \$350 (includes travel and accommodation).



COURSE LIST

CREDITS

BI05.03	Microbiology	15
CHM5.02	General and Inorganic Chemistry	15
PHY5.01	Engineering Physics	15
WSC5.04	Grape and Wine Production	15
BI05.01	Botany	15
CHM5.03	Organic and Physical Chemistry	15
STA5.02	Scientific Statistics	15
WSC5.02	Wine Science	15
VIT6.04	Viticultural Science	15
WSC6.07	Wine Production 1	30
BCM6.02	Structural Biochemistry	15
ENG6.01	Food and Beverage Engineering	15
PSC6.02	Plant Physiology	15
CHM6.01	Analytical Chemistry	15
BCM6.01	Metabolic Biochemistry	15
PSC5.03	Soil Science	15
WSC6.06	Sensory Science	15
ENG7.01	Winery Engineering	15
VIT7.05	Research Project	15
VIT7.08	Winegrowing Industry Experience	15
WSC7.01	Wine Production 2	15
WSC7.04	Wine Chemistry	15
WSC7.07	Wine Microbiology	15
WSC7.11	Winery Industry Experience	15
WSC7.12	Wine Sensory Assessment	15
VIT7.09	Vine Health	15
PSC7.01	Soil Management	15
VIT7.01	Vine Physiology	15
VIT7.07	Vineyard Establishment	15

ELECTIVES

WSC5.05	Introduction to Wine Business	15
WSC7.13	Wine Business Management	15

Programme information: The following two pages provide a list of courses (subjects) offered in both the Bachelor of Wine Science and Bachelor of Viticulture degrees. The structure of each programme is given in the Delivery Schedules which you will find at the end of this document.

Course descriptions: Courses are offered subject to sufficient numbers applying.
In the following descriptions:
P = Pre-requisite = a course that must be passed before enrolment in the present course.
C = Co-requisite = a course that either must be passed or is enrolled in at the same time as the present course.

Course No.	Brief Description	No. of Credits	NZQA Level	Semester Offered
BI05.03	Microbiology To cover the importance of micro-organisms to human affairs and to give a foundation to biology, ecology, taxonomy, and applied aspects of microbiology, including agriculture, industrial, food and wine microbiology. Students are introduced to the different types of micro-organisms in the environment and industry, methods of cultivation and control of microbial growth. There is an emphasis on practical microbiological techniques, including microscopy and aseptic technique.	15	5	1
CHM5.02	General and Inorganic Chemistry To study current theories of the nature of atoms, molecules and bonding to explain the behaviour of bulk matter. Topics include solutions and chemical equilibrium, gases and models of chemical bonding. Initial preliminary topics are provided to assist students with poor chemical background.	15	5	1
PHY5.01	Engineering Physics To provide a sufficiently broad-based, yet relevant physics foundation for students in applied sciences. The course covers topics in mechanics, elasticity, fluids, heat and kinetic theory, light, static and dynamic electricity and electromagnetism.	15	5	1
WSC5.04	Grape and Wine Production To provide an overview of the historical development of grape and wine production in New Zealand and around the world. Students are introduced to winemaking principles and basic winemaking processes involved in the production of major wine types. Grape vine physiology, anatomy and annual growth cycle are examined, particularly with regard to fruit development and ripening. This course also covers the identification of grapevine cultivars and the use of hybrids and rootstocks. Limiting factors in grape and wine production are integrated and emphasised in the treatment of these topics.	15	5	1
BI05.01	Botany To introduce students to the plant kingdom and classification with an emphasis on angiosperm structure and physiology. Adaptation of basic structures and functions to different environments will be examined with some emphasis on horticultural applications.	15	5	1 or 2
CHM5.03	Organic and Physical Chemistry To provide an introduction to organic chemistry functional groups and reactions, thermochemistry and thermodynamics, redox chemistry and chemical kinetics. This course is a continuation from CHM5.02.	15	5	2
STA5.02	Scientific Statistics To provide a foundation in the basic practice of statistics, that is explaining and dealing with variability. The orientation is towards the sciences covering both experimental and observational data. The emphasis is on understanding statistical concepts and applying acquired skills to data interpretation by the use of modern software packages. The modern approach to the teaching of statistics is used including use of local data and small projects.	15	5	2
WSC5.02	Wine Science P: WSC5.04 Grape and Wine Production, and CHM5.02 General and Inorganic Chemistry or CHM5.03 Organic and Physical Chemistry To provide an introduction to the principal chemical analyses that influence wine production, including interactions with microbiology at an elementary level, and the effects of these processes on wine production. Emphasis is also given to competency in wine chemical analysis and calculations required in wine quality control.	15	5	2
VIT6.04	Viticultural Science P: WSC5.04 Grape and Wine Production The subject is structured to blend the practical aspects of grape growing with the scientific theory underlying key vineyard operations. Most major events of a vineyard growth cycle are addressed over this two semester subject. There will be a balanced emphasis on how, as well as, why a particular viticultural strategy is employed.	15	6	Full year
WSC6.07	Wine Production 1 P: BI05.03 Microbiology P: WSC5.02 Wine Science A more detailed study than in Grape and Wine Production, of principles and techniques used in table wine production particularly in relation to effects on wine composition and quality. Emphasis will be placed on the importance and relevance of ongoing quality control throughout the winemaking process. This course includes an excursion.	30	6	Full year

BCM6.02	Structural Biochemistry P: CHM5.03 Organic and Physical Chemistry To provide an outline of the chemical structures of the major groups of molecules found in living cells (amino acids and proteins, carbohydrates, lipids and nucleic acids). The emphasis is placed on the properties of these substances as building blocks of life and how they interact for cellular function. Also considered are the way in which they control the activities of the cell through transfer of genetic information and through catalysis of the chemical processes essential to growth and development.	15	6	1
ENG6.01	Food and Beverage Engineering P: PHY5.01 Engineering Physics To provide students with an understanding of basic engineering concepts relevant to the food and wine industries.	15	6	1
PSC6.02	Plant Physiology P: BIO5.01 Botany To provide an introduction to the interaction of the whole plant and its physiological processes with environmental factors. Emphasis will be placed on water movement through the soil-plant-air continuum, mineral nutrition, carbon metabolism, integration of growth and development and interactions of the plant with environmental parameters that affect growth.	15	6	1
CHM6.01	Analytical Chemistry P: CHM5.03 Organic and Physical Chemistry To introduce the philosophy of the analytical method via a study of commonly used analytical techniques. Includes chromatographic, spectrophotometric and electroanalytical procedures as well as classical wet methods.	15	6	1
BCM6.01	Metabolic Biochemistry P: BCM6.02 Structural Biochemistry To provide students with an understanding of major chemical transformation used in living cells to conserve energy and to synthesise essential cellular components. The main metabolic pathways are considered in detail, and the control of metabolism at the molecular level will then be studied.	15	6	2
PSC5.03	Soil Science People credited with this course will develop skills and an understanding of the physical, chemical and biological properties of soils and their influence on plant production. The formation, classification and distribution of New Zealand soils will also be introduced.	15	5	1
WSC6.06	Sensory Science An introduction to the principles that underlie sensory assessment, particularly those relevant to taste, smell and mouthfeel. It includes the physiology and characteristics of the senses, the application of various sensory testing procedures, and the application of these principles to the sensory assessment of wine, grape juice and some wine faults. Varietal flavour profiles, regional wine styles and wine faults are also covered.	15	6	1 or 2
ENG7.01	Winery Engineering P: WSC6.07 Wine Production 1 To examine aspects relevant to winery planning and the establishment and expansion of facilities, such provision of utilities, equipment selection and winery safety.	15	7	2
VIT7.05	Research Project P: STAS.02 Scientific Statistics P: VIT6.04 Viticultural Science P: WSC6.07 Wine Production 1 An advanced course where students undertake scientific method on a selected topic of relevance to the viticulture and wine making industry. Students will design an experiment to test a hypothesis and present the findings in written, oral and poster formats. Students should expect to complete this course with a greater understanding of scientific method and enquiry, critical analysis and an enhanced ability to establish robust experiments and conduct independent research.	15	7	Full year
VIT7.08	Winegrowing Industry Experience To provide an opportunity to gain practical experience at a commercial vineyard	15	7	Full year
WSC7.01	Wine Production 2 P: WSC6.07 Wine Production 1 People credited with this course will develop knowledge and skills related to the grape requirements, production principles and winemaking techniques to produce sparkling wine and fortified wine, and the effect that these factors have on wine composition and quality. The study of table winemaking techniques beyond that of WSC6.07 Wine Production 1, particularly processing techniques that develop and vary style in winemaking.	15	7	Full year
WSC7.04	Wine Chemistry P: CHM5.03 Organic and Physical Chemistry P: WSC6.07 Wine Production 1 This subject will provide the student with the principles and details of the chemical and physical processes and interactions that influence and achieve wine stability. The subject also covers the chemistry of phenolic and flavour compounds found in wine, of added and natural exogenous enzymes of microbial origin, and the chemistry of distilled grape spirit.	15	7	2

WSC7.07	<p>Wine Microbiology P: WSC6.07 Wine Production 1 P: BCM6.01 Metabolic Biochemistry</p> <p>To provide specialised knowledge and skills related to the physiology and biochemistry of yeast and bacterial growth during wine fermentation and conservation. Aspects of microbial control from grape harvest to bottling of wine will be considered. Genetic concepts, genetic techniques for yeast strain development and rapid yeast identification will be covered.</p>	15	7	2
WSC7.11	<p>Winery Industry Experience</p> <p>This course provides an opportunity to gain practical experience at a commercial winery.</p>	15	7	Full year
WSC7.12	<p>Wine Sensory Assessment P: WSC6.06 Sensory Science P: STA5.02 Scientific Statistics</p> <p>A study of wine assessment at an advanced level that assumes a significant knowledge of sensory science and some sensory descriptive skill. It considers both New Zealand and overseas wine, and all major wine types. Attributes of wine sensory quality are explored and are examined in terms of wine type, origin, grape variety and potential market. Scoring of wine is discussed principally from the perspective of the New Zealand wine show system. Student assessment skill is assessed, and the assessment includes objective tests of scoring reliability and scoring discrimination. Each student also presents orally, a sensory comparison of two wines.</p>	15	7	2
VIT7.09	<p>Vine Health P: WSC5.04 Grape and Wine Production P: BIO5.03 Microbiology</p> <p>This course is designed to build onto the introduction to vine pathology and entomology covered in Grape and Wine Production. An understanding of how these relate to vineyard management and grape quality management will be discussed. Topics will cover the diseases and pests commonly found in vineyards and will consider the different control measures available. The correct identification and understanding of the pest lifecycle will impact on the success of control options. An important part of any vineyard management system is to be able to integrate different control measures, such as biological, cultural and chemical.</p>	15	7	1
PSC7.01	<p>Soil Management P: PSC5.02 Soil Science</p> <p>This course will discuss the responsibilities of the modern agriculturist to maintain and improve soil quality. The major forms of soil degradation, their causes, and management will be evaluated. Students should expect complete this course with an understanding of the impacts of farming practice on soil quality.</p>	15	7	2
VIT7.01	<p>Vine Physiology P: PSC6.02 Plant Physiology P: VIT6.04 Viticultural Science</p> <p>This course aims to develop an understanding of vine physiological processes leading to growth and development of the grapevine. Topics covered include: biomass, distribution and turnover of the grapevine root system; fruitfulness of grapevines; photosynthesis of grapevines; and sugar accumulation in grape berries.</p>	15	7	2
VIT7.07	<p>Vineyard Establishment P: VIT6.04 Viticultural Science</p> <p>This course covers all of the factors that should be considered in the establishment of a vineyard, including climate, soil, site selection, planting material, and the process of setting up a vineyard.</p>	15	7	2
ELECTIVES				
WSC5.05	<p>Introduction to Wine Business</p> <p>To provide students with an overview of the international and New Zealand wine making environment, based on a study of the development of the world's wine industry, the New Zealand industry and New Zealand's place in the global wine industry</p>	15	5	2
WSC7.13	<p>Wine Business Management</p> <p>This course will cover the nature of the wine industry and the framework within which it operates nationally and internationally. It will include legislation of relevance to the wine business, such as the Wine Act 2003, the Sale of Liquor Act, New Zealand (Australia New Zealand Food Standards Code) Food Standards 2002, Wine Standards Management Programmes and Hazard Analysis, Critical Control Point methodology, wine export regulations and procedures, and Customs procedures and requirements. An understanding of relevant local body regulations and parts of the Resource Management Act will also have been gained. Students will also have an understanding of export procedures, as well as the structure of the New Zealand market, and relevant overseas markets. Coverage will also have been given on the role of industry bodies such as New Zealand Wine Growers and the Alcohol Liquor Advisory Committee.</p>	15	7	2