



THE UNIVERSITY OF  
NEWCASTLE  
AUSTRALIA

JOINT TRAINING  
PROGRAM

# BIOTECHNOLOGY



## JOINT TRAINING PROGRAM

## BACHELOR OF BIOTECHNOLOGY

Biotechnology is a technique that uses living organisms to make or modify products or improve plants and animals. In medicine it has been used to develop vaccines and antibiotics, test for diseases and assist couples to have children through the use of IVF. Biotechnology is part of the search for cures for diseases like Alzheimer's, cancer, diabetes, obesity and cardiac disorders. In agriculture biotechnology can be utilised for cloning animals and producing pest and drought resistant plants. Biotechnology is one of the fastest growing areas of science today, and as a result of this, Nong Lam University Vietnam has joined with the University of Newcastle Australia to offer an exciting joint program in Biotechnology. Taken over three years (or six semesters) on two different campuses, this program is designed to equip you with the professional knowledge, skills and English proficiency at an international standard in biotechnology.

### Study with the best

In the biotechnology program you will have a high level of contact with our teaching and research staff, many of whom are acknowledged as international research leaders working to solve real-world problems. We maintain close contact with industry, which will benefit you when you are taking part in work placements, doing research and looking for potential employers.

### Real World Experiences while you study

An exciting feature of our program is the ten week industrial placement that you can undertake in your final year. This is the longest placement available to students studying biotechnology in Australia, and it means you can apply what you have learnt to a biotechnology environment while broadening your experience in preparation for your future.

### Purpose-built facilities to replicate industry situations

Our state-of-the-art laboratories at the University of Newcastle are purposely built to ensure that world-class study and research can be undertaken. The facilities are similar to those found in the industry, so that when you graduate you will be career-ready.

**Biotechnology is one of the fastest growing areas of science today.**



## Bachelor of Biotechnology Program Details

Biotechnology applies scientific principles to living organisms in order to produce products and services of value to society. It is used in processes ranging from cheese production, brewing, and wastewater management, through to drug design and gene therapy. This program examines microorganisms, plants and animals in the context of the discovery, understanding, improvement and development of viable products or activities.

The Bachelor of Biotechnology paves the way for exciting career opportunities in areas such as biomedical research, pathology laboratories, biotechnology industries, bioanalytical laboratories in government and industry, reproductive biology industries, plant biotechnology and a range of veterinary and agricultural support industries.

### What you'll be studying

The Biotechnology program is a 3-year (6 semester) program comprising of 240 units.

Throughout the program theoretical studies are complemented by practical laboratories and project based assignments. You will be able to participate in a ten week biotechnology placement course, providing excellent hands-on experience and industry contact for your future.

You will be required to study a range of core and elective courses. Core courses include study areas such as biology, biochemistry, statistics, physics, molecular genetics, molecular biology and professional laboratory skills. You can also select courses from reproductive physiology,

conservation biology, cellular biotechnology plus elective courses from a range of areas across the University depending on your interests and career ambitions.

For more information on Part I visit <http://cie-nlu.hcmuaf.edu.vn>.

For more information on Part II visit [www.newcastle.edu.au/program/10981.html](http://www.newcastle.edu.au/program/10981.html)

### Who you'll be learning from

Our academics are considered among the top of our field, and are committed to providing a challenging and rewarding learning environment. They are all involved in nationally and internationally recognised research. The results of this research feed directly into their teaching so that you will be kept up to date with the latest developments and discoveries. Our academics are highly respected for their learning methods which encourage you to develop problem-solving skills and become a strategic thinker. You will experience excellent laboratory facilities, which support the degree program and emphasise modern biotechnology skills, built on a strong basis of fundamental principles.

### How to get on board

#### Eligible Candidates

- Vietnamese students graduating high school or equivalent who fulfill the entrance requirements of the joint programs;
- International students wishing to pursue the joint programs will be selected in accordance with management regulations of foreign students stipulated by the Ministry of Education and Training of Vietnam, and in accordance with the entrance requirements of the joint program.

### Nong Lam University Entry Requirements

Students will receive conditional offers for entry into Part I of the program on meeting entrance requirements as follows:

- Having the high school certificate with GPA being over 6.5 points or equivalent or having the university's national entrance examination points higher or equal to the minimum points set by the Ministry of Education and Training's provision.
- Having English proficiency level with IELTS 4.5 upward or equivalent, or passing the English entry examination organized by NLU.

### The University of Newcastle Entry Requirements

- Students will be admitted to Part II of the program at The University of Newcastle, providing they meet the following requirements:
- Candidates in the Articulation Program pathway who successfully complete Part 1 (six semesters or three years) of the NLU Undergraduate Degree program in Biotechnology at NLU and who are deemed eligible for entry into Part 2 of the Bachelor of Biotechnology Program offered by the Faculty of Science and Information Technology at the University of Newcastle will be offered admission to candidature to the Bachelor of Biotechnology.
- Candidates in the English Program pathway who successfully complete Part 1 (three semesters) of the program at NLU (12 prescribed courses based on courses/content offered in the



University of Newcastle program), and who are deemed eligible for entry into Part 2 of the Bachelor of Biotechnology Program offered by the Faculty of Science and Information Technology at the University of Newcastle will be offered admission to candidature to the Bachelor of Biotechnology.

- Candidates will be required to meet the requirements of University of Newcastle's English Language Proficiency Policy as amended from time to time by Newcastle in its sole discretion. Currently the English proficiency level required is IELTS 6.0 equivalent or more. The English Language Proficiency Policy is available here: [www.newcastle.edu.au/policylibrary/000104.html](http://www.newcastle.edu.au/policylibrary/000104.html)

Annually, there are two enrolments in March and September.

#### Admission procedure

Candidate selection procedures will go through three steps as follows:

**Step 1:** Short-listing applicants based on their application quality to find eligible candidates who meet the program's entrance requirements;

**Step 2:** Directly interviewing short-listed applicants to evaluate their intellectual ability and commitments to the program;

**Step 3:** Final selection;

Candidates will be finally selected by considering their average points from three rounds of selection (quality of high school's academic record, English proficiency or result of English examination, and interview result).

#### Teaching language

The entire program will be conducted in English.

#### Teaching staff

Part I: Teaching staff will be made available from NLU faculties and from visiting professors from other universities.

Part II: Teaching staff will be made available by the University of Newcastle.

#### Length of training

The length of training for the joint Bachelors degree in Biotechnology is three years or six semesters (excluding foundation courses such as English, computer, and soft skills) and organized into two parts:

- 1.5 years (three semesters) at NLU, and
- 1.5 years (three semesters) at the University of Newcastle.

The final completed program (initial credit and courses completed after enrolment) must satisfy the program rules in that:

- Must include completion of all prescribed 'core' courses for the program (170 units)
- Must have completed 50 units of directed courses (from list of options) – with 10 units at 2000 level and 30 units at 3000 level.
- The completion of 'electives' (20 units).
- No more than 100 units to be taken at 1000 level.
- At least 60 units to be completed at 3000 level.

#### Training location

Part I: Nong Lam University, Ho Chi Minh City, Vietnam.

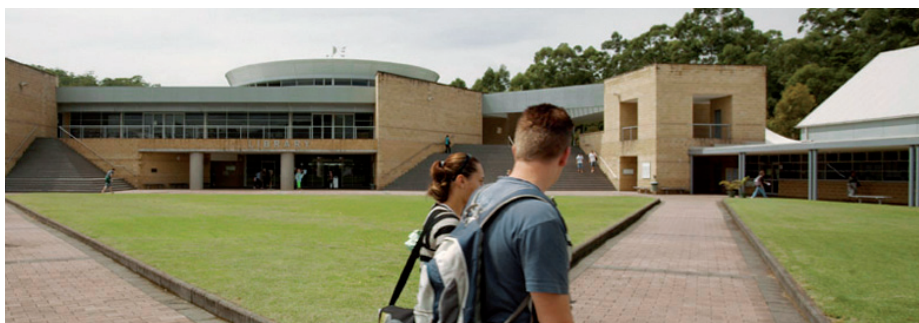
Part II: The University of Newcastle, Australia.

#### Progression and award of degree

Students, who successfully complete Part 2 of the Biotechnology program at Newcastle, will be awarded the Bachelor of Biotechnology by Newcastle.

Students who successfully complete and are awarded the Bachelor of Biotechnology degree from Newcastle will be eligible to apply for enrolment into the Bachelor of Biotechnology (Honours) program. This program is an 80 unit program.

Students who satisfactorily complete and are awarded the Bachelor of Biotechnology (Honours) from Newcastle would be eligible to apply to enrol into a Research Higher Degree program.



## Our World Class Research

Biotechnology is one of the fastest growing areas of science in the world today. The race to improve medical treatments, produce crops resistant to pests and disease and to protect against bioterrorism has resulted in a flourish of research activity.

The University of Newcastle has a long history of cutting-edge research in the field of biotechnology. We are a research-intensive discipline and have conducted research in a wide variety of areas, including:

### Wildlife conservation

A range of biotechnologies are now being applied to the conservation of threatened species. These include freezing sperm and eggs to assist the breeding of endangered species and the use of molecular genetics to manage small populations threatened by inbreeding.

### Human health

Stem cells, with their ability to form diverse cell types, is an exciting area of contemporary Biotechnology research, which will assist the medical field in developing treatments for many diseases and other medical conditions. The pharmaceutical industry uses Biotechnology methods to produce vaccines, insulin and human growth hormones. DNA technology has contributed greatly to disease diagnosis. Through spearheading the Australian Research Council Centre of Excellence in Biotechnology and Development, we are involved in important male infertility, cancer research and reproductive technologies.

### Reproductive Technologies

A range of reproductive technologies, such as IVF, have been developed by biotechnologists to assist infertile couples to have children. Biotechnology research aims to increase the success rate of IVF and other assisted reproduction strategies.

### Environmental Toxicology and Remediation

We are involved in developing innovative ways to monitor pollutants in the environment and in developing tools to remove these pollutants using natural or genetically modified organisms. The University's Tom Farrell Institute holds regular forums on the impact of current environmental issues on our local region.

### Biofuels

Plants can convert solar energy into biochemical energy using photosynthesis. Plant biotechnologists aim to increase plant biomass as a carbon-neutral energy source to produce ethanol as a biofuel. Also, legumes hold promise as a source of biodiesel with their unique ability to produce their own nitrogen fertiliser via a symbiotic relationship with Rhizobia bacteria and their production of oil rich seed.

### Food Production and Agriculture

We are involved in fundamental research discovering mechanisms of nutrient distribution in plants which impacts upon crop yield. This research holds promise for improving plant performance to meet the global challenge of food security. Biotechnology research has also contributed to the development of sustainable agricultural practices. We are part of the internationally renowned Australian Research Council Centre

of Excellence for Integrative Legume Research, a research network that focuses on plant science research.

### Overcoming viral and bacterial disease

Biotechnology offers new strategies to treat viral and bacterial disease through the production of antivirals and alternatives to antibiotics.

### Putting microbes to work

There is a diverse array of microbes on the planet that have the potential to extract metals in the mining industry and to produce biochemicals for a range of industrial uses. Modern molecular biology already uses many bacterial products such as bacterial enzymes that enable the production of DNA from RNA.

### Wildlife management

Biotechnology offers the possibility of whole new ways of dealing with invasive pest species like the cane toad or biosecurity threats posed by wildlife as disease carriers to people or other animals.

For more information on all aspects of Biotechnology at the University of Newcastle please visit [www.newcastle.edu.au/what-can-i-study/biotechnology/](http://www.newcastle.edu.au/what-can-i-study/biotechnology/)

## Program Details

**Award Abbreviation:** BBiotech

**Program Code:** 10981

**CRICOS Code:** 059879B

**Duration:** 3 years (6 semesters)/240 units

**Locations:** Part I: Nong Lam University – Ho Chi Minh City  
Part II: The University of Newcastle – Callaghan

# CONTACT

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CRICOS Provider 00109J

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