INTI International University & Colleges™

YOUR FUTURE BUILT TODAY

# BIOTECHNOLOGY & LIFE SCIENCES

## OPEN YOUR WORLD TO NEW SCIENTIFIC BREAKTHROUGHS

# YOUR FUTURE BUILT TODAY

**6**
campuses across Malaysia

**30+**
years of empowering young minds

**16,500+**
students currently served

**1,000+**
employees nationwide

**70,000+**
graduates whose lives we have touched

**ABOUT INTI**

At INTI, our mission is to bridge the needs of tomorrow through the competencies our students gain today, empowering them to become the leaders, innovators and game changers of the future. We are committed towards ensuring our students gain the competencies needed for the workplace of the future, and to work alongside the digital transformations driving today's global businesses in the Fourth Industrial Revolution.

Through our innovative teaching and learning and extensive industry partnerships, we empower our students with the ability to work with smart machines, to process and analyse data for better decision-making, to learn about technologies that impact businesses and manufacturing processes, and to develop professional skills such as adaptability, working with multidisciplinary teams, problem-solving, and a thirst for lifelong learning.

By inspiring our students to explore their passions and discover their true potential through the right skills, tools and experiences, we continue to be a force of change in revolutionising education. Our commitment is to ensure exceptional graduate outcomes, and to transform our students into the dynamic leaders of the future – ones who will lead us in the Fourth Industrial Revolution, and beyond.

Awarded **FIVE STARS** in the **QS STARS RATING,** achieving top marks in the categories of Online Learning, Employability, Facilities and Inclusiveness

QS STARS™ RATING SYSTEM – Online Learning

QS STARS™ RATING SYSTEM – 2019 – Employability

QS STARS™ RATING SYSTEM – 2019 – Facilities

QS STARS™ RATING SYSTEM – 2019 – Inclusiveness

**INTI GRADUATE EMPLOYABILITY SURVEY 2017 VALIDATED BY BDO**

**99%** of INTI graduates are employed within 6 MONTHS of graduation

**91%** of INTI graduates are PAID HIGHER than the market minimum average

**60%** of INTI graduates get job offers BEFORE they graduate

# COLLABORATION WITH INDUSTRY PARTNERS

Over the years, INTI has cultivated a strong engagement with multinational companies and large local organisations on diverse platforms to foster innovation curricula and develop future-ready graduates.

and many more

**The platforms include:**

- Industry Awards / Scholarships
- Employer Projects
- Boot Camps and Career Workshops
- INTI Leadership Series
- Faculty Industry Attachments
- Industry Advisory Boards
- Industry Skills Certifications
- Employer Centric Curricula
- Internships and Job Placements
- Coaching and Mentoring





# THE INTI EDGE

## We are INTERNATIONAL

Our internationally recognised education will enrich you with the right skills and attributes to excel at whatever you do and wherever you go.

### World Renowned Collaborations with Prestigious Universities

INTI offers exclusive franchise degrees and dual award degree programmes in partnership with some of the world's highest rated universities. These partnerships help to enhance your academic credentials and offer you access to some of the most prestigious institutions of higher learning globally.

**Coventry University**

**RANKED NO.15 UK UNIVERSITY***
*Guardian University Guide 2020

**TORRENS UNIVERSITY AUSTRALIA**

**Blue Mountains International Hotel Management School**

**RANKED NO. 1 HOTEL MANAGEMENT SCHOOL IN AUSTRALIA AND ASIA-PACIFIC**
*Kantar 2020

**University of Hertfordshire UH**

**AWARDED TOP GOLD RANKING IN UK'S TEACHING EXCELLENCE FRAMEWORK***
*Teaching Excellence Framework (TEF) 2018

**Southern New Hampshire University**

**NO.1 MOST INNOVATIVE UNIVERSITY IN THE NORTH***
*US News & World Report 2018

**Sheffield Hallam University | Sheffield Institute of Arts**

**ONE OF BRITAIN'S LARGEST AND MOST PROGRESSIVE MODERN UNIVERSITIES***
*https://www.cumulusassociation.org/members/SheffieldHallamUniversity/

**SWINBURNE UNIVERSITY OF TECHNOLOGY**

**AACSB ACCREDITED*
-ONLY 5% OF WORLD'S BUSINESS SCHOOLS SHARE THIS HONOUR**
*Association to Advance Collegiate Schools of Business (AACSB)

## INNOVATIVE Teaching & Learning

INTI integrates an array of proven approaches to teaching combined with revolutionary applications of technology in the classroom such as the innovative Blackboard Learning Management System.

**Blackboard**

With Blackboard, learning does not only happen in the classroom, it happens everywhere. It's a holistic, integrated system to collaborate and interact with fellow students and lecturers. Students can offer and gain feedback from their peers on coursework and perform self-assessments while learning in a safe, nurturing and holistic environment.

**GLOBAL RECOGNITION AND ACHIEVEMENT**

Awarded to
INTI INTERNATIONAL UNIVERSITY & COLLEGES for:

Blackboard CATALYST AWARD WINNER

- Professional Development (2020, 2019 & 2017)
- Student Success (2020 & 2019)
- Leading Change (2018)

**Supplementary Learning and Assessment Tools Used:**

**STUDIO**
**3D Studio Broadcasting System Using The Most Advanced Virtual Studio Technology**

**KALTURA**
**Video Management And Creation Tools**

**RAPTIVITY**
**Interactivity Building Software Ranging From Games, Quizzes, Simulations, Presentations And More**

**mettl**
**Online Assessment Platform with Online Remote Proctoring**

**blue**
**Software To Support Feedback Processes Including Course And Lecturers' Evaluations**

**INDUSTRY RELEVANCE**

INTI has established a strong collaborative network with key leading companies in the industry and has been at the forefront of education innovation by offering an academic curriculum that is not only industry relevant but also immensely effective.

## INDIVIDUAL Development

INTI endeavours to include practical experiences in every programme it offers. From practical workshops taught by local and international guest lecturers and industry practitioners who share the ins and outs of the working world, to hands-on practical projects initiated by potential employers.

SUPPORT

**THE MENTOR-MENTEE PROGRAMME**
**Expand your social circles and future horizons**

New students at INTI are paired up with a senior student who acts as a role model and offers assistance in easing them into academic life. The mentor-mentee programme supports new students to form social bonds and helps them become a part of the close-knit INTI community. These social bonds provide a significant part of the support a student receives during their journey at INTI.

**PARENT / TEACHER MEETINGS**
**Get valuable feedback and grow**

To keep abreast of a student's academic progress at INTI, both students and lecturers have access to the Blackboard Academic Learning system which helps them track the areas for improvement. Parents and caregivers are also invited to meet with the student's lecturers and academic staff to discuss their academic performance and explore ways to enhance it.

**LINKEDIN**
**Building your personal brand and your link to a world of opportunities**

INTI has established a collaboration with LinkedIn that leverages its powerful connections, and offers training for students to create their personal brand and profile that elevates their opportunities for employability. Regular workshops are conducted to teach students how to create a compelling resume that will resonate with potential employers. With a complete, job-ready LinkedIn profile even before they graduate, INTI students have the perfect platform to build and enhance their personal brand.

# DISCOVER THE NEXT BIG BREAKTHROUGH

One of the most exciting areas of scientific research, biotechnology is the in-depth study and mastery of all aspects of living organisms down to the cellular level and the knowledge of how to derive and apply useful applications from organic systems to resolve all manner of problems across multiple fields of human endeavour.

Biotechnology graduates are able to contribute their talents across a diverse scope of industries ranging from manufacturing, the service industry and even environmental management. In medicine, an INTI Biotechnology and Life Sciences graduate is able to produce and enhance the production of antibiotics and vaccines to cure diseases. In agriculture, graduates are able to contribute by helping to genetically engineer and create more resilient, better crops and livestock to resolve food shortages. In forensics, INTI biotechnologists have contributed towards the goal of bringing criminals to justice by offering detailed analysis of genetic material at crime scenes.

A rigorous industry-relevant curriculum along with extensive opportunities for internship programmes with the world's leading biotechnology and molecular bioscience companies ensures that graduates remain at the forefront of the latest developments with exceptional employability. Make your mark and contribute to science and humanity in a meaningful way.

**INDUSTRY CONNECTIONS AND NETWORKING**
Learn directly and gain real-world knowledge from the industry. Our strong partnerships with businesses and employers offer you the opportunities to take part in Employer Projects and field trips, all of which will stand you in good stead when you graduate. At INTI, it is simply more than just studying life under a microscope as we will get you ready for the working world.

**CAREER-READY INTERNSHIP PROGRAMME**
Partnering with biotechnology and molecular bioscience companies, we provide you with an excellent opportunity to put all your theoretical knowledge and laboratory skills to good use, and acquaint yourself with the industry's stringent requirements hence, boosting your employability.

**ELEVATE YOUR EDUCATION EXPERIENCE**
If you pursue an Australian Degree Transfer Programme (Science) or Bachelor of Biotechnology (Hons), you can choose to transfer to a reputable, highly-ranked university in Australia, such as the University of Adelaide, University of New South Wales, The University of Queensland and the University of South Australia.

**PROVEN RECORD OF EXCELLENCE**
Our Australian Degree Transfer Programme has been consistently successful in producing First-Class and Upper Second-class degree holders in the field of Biotechnology and Life Sciences. On hand to guide you to your success is a team of academicians and industry professionals who are highly dedicated and experienced.

# POPULAR MAJORS

## BIOCHEMISTRY

Decipher the structures and functions of proteins, carbohydrates, lipids, nucleic acids and other bio-molecules, the mechanisms of enzyme action, elucidation of metabolic pathways and their control, and the understanding of life processes through the laws of chemistry. It also include in-depth study of the molecular basis of genetics.

## BIOMEDICAL SCIENCE

This study allows students to specialise in scientific areas related to the normal functions or diseases of humans. Learn how the body operates and gain an understanding of current medical research aimed at improving diagnosis, prevention and treatment of diseases.

## BIOTECHNOLOGY

Involves the use of advanced genetic techniques to construct novel microbial, plant and animal strains, obtain site-directed mutants to improve the quantity or quality of products, or obtain other desired phenotypes. It spans a variety of activities, from optimisation of processes such as those involved in producing antibiotics, vaccines, monoclonal antibodies, and genetically engineered transgenic plants and animals, to carrying out gene therapy, improving water and land management, and remedying pollution.

## FOOD SCIENCE

This subject involves the basic chemical, physical, biochemical and biophysical properties of foods and their constituents, and of the changes that these may undergo during handling, preservation, processing, storage, distribution and preparation for consumption. Activities include the development of new food products, design of processes to produce these foods, choice of packaging materials, shelf-life studies, sensory evaluation of the product with trained expert panels or potential consumers, as well as microbiological and chemical testing.

## GENETICS

Genetics identifies the molecular, cellular, and organismal aspects of heredity in animals and plants. It also considers the hereditary mechanisms of micro-organisms, human hereditary disorders and DNA technology.

## MICROBIOLOGY & IMMUNOLOGY

This subject involves the study of microscopic organisms such as bacteria, yeasts, moulds, viruses, rickettsia and protozoa. It also examines the diversity, structure, function, growth, reproduction, genetics, physiology, preservation and control of these micro-organisms. Mutation, gene mapping and structure, means of transferring genetic information and applications of genetic modifications and the study of the immune system in human and other organisms are also covered.

## MOLECULAR BIOLOGY

The study of molecular foundations of living organisms, especially DNA; how it is used to define an organism, how genes are regulated, and how human beings are related to other organisms. Like Biochemistry, it underlies many aspects of genetic engineering, protein engineering, and other new approaches to improving upon nature.

## NUTRITION

This examines the effects of food components on the metabolism, health, performance, and disease resistance of humans and animals. It also includes the study of human behaviour related to foods.

# PRESTIGIOUS PARTNER UNIVERSITIES

Via extensive agreements with some of the most renowned universities, students may electively transfer their credits and complete their course overseas which hosts some of the world's institutions at the forefront of research in biotechnology and molecular science. These partner universities are consistently ranked among the top 200 universities worldwide by The Times Higher Education along with the rigorously assessed QS World University Rankings.

## THE UNIVERSITY OF ADELAIDE

The School of Biological Sciences, the University of Adelaide was formed in 2015 to coordinate and consolidate the University's cutting edge and world-class research and teaching in Ecology & Environmental Science; Genetics & Evolution; and Molecular & Cellular Biology. The School has in excess of 600 people in research, teaching and support staff, postgraduates and honours students. World-class research and teaching is conducted in the School of Biological Sciences which covers a range of subject matter notable in its breadth and scale.

## THE UNIVERSITY OF NEW SOUTH WALES

In the School of Biotechnology and Biomolecular Sciences (BABS), the University of New South Wales we teach undergraduates, mentor postgraduate research students and conduct research in the disciplines of biotechnology, biochemistry, genetics, molecular biology, microbiology, environmental microbiology, medical microbiology and immunology. We empower our students, giving them the tools and experience to embark on a career that is richer, more fulfilling and constantly fascinating.

## THE UNIVERSITY OF QUEENSLAND

The University of Queensland understands that academic interests are as diverse as their students. They provide choices to give you flexibility in your learning process. Offering a breadth of study that leads the way in Australia, you can choose a degree to match your interests, passions and career goals.

## UNIVERSITY OF SOUTH AUSTRALIA

The School offers undergraduate programmes in pharmacy, pharmaceutical science (including a double degree in pharmaceutical science/pharmacy), nutrition and food sciences, medical science, and the only laboratory medicine degree to be fully accredited by the Australian Institute of Medical Scientists in South Australia. The School has strong links to the Sansom Institute for Health Research bringing together internationally recognised research concentrations in quality use of medicines, molecular and cell biology, drug development, cancer research, pharmaceutical science, neuroscience and nutrition and dietetics.

# CONTENT



# INTI BIOTECHNOLOGY PATHWAY

## BACHELOR OF BIOTECHNOLOGY (HONS)

SPM / O-Level or equivalent

STPM / UEC or equivalent

Foundation in Science / Cambridge A-Level (CAL) /
SACE International (formerly known as South Australian Matriculation - SAM)

Bachelor of Biotechnology (Hons) **Year 1**

Bachelor of Biotechnology (Hons) **Year 2**

Bachelor of Biotechnology (Hons) / Internship **Year 3**

**The University of Adelaide**
- BSc – any two of Biochemistry, Genetics, Microbiology & Immunology
- BSc (Biotechnology)
- BSc (Biomedical Science) – Biochemistry, Genetics, Microbiology & Immunology or Pharmacology

**The University of New South Wales**
- BSc – Anatomy, Biochemistry, Biological Sciences, Biotechnology, Ecology, Food Science, Genetics, Medical Microbiology & Immunology, Microbiology, Molecular Biology, Pharmacology, Physiology (Last 2 years)
- BMedSc (Last 2 years)
- BSc (Adv Sc) (Hons) – Anatomy, Biochemistry, Biological Sciences, Biotechnology, Ecology, Food Science, Genetics, Medical Microbiology & Immunology, Microbiology, Molecular Biology, Pharmacology, Physiology (Last 3 years)
- BSc (Biotechnology) (Hons) (Last 3 years)

**The University of Queensland**
- Bachelor of Biomedical Science
- Bachelor of Biotechnology (Molecular Biotechnology) or (Microbial Biotechnology)
- Bachelor of Food Technology
- BSc (Biochemistry & Molecular Biology)
- BSc (Biomedical Science) – Anatomy, Developmental Biology, Human Genetics, Immunology & Infectious Diseases, Neuroscience, Pharmacology, Physiology
- BSc (Ecology)
- BSc (Food Science) or (Food Science & Nutrition)
- BSc (Genetics)
- BSc (Marine Science)
- BSc (Microbiology)
- BSc (Plant Science)
- BSc (Zoology)

**University of South Australia**
- BmedSc

**The University of Adelaide**
- BSc – any two of Biochemistry, Genetics, Microbiology & Immunology
- BSc (Biotechnology)
- BSc (Biomedical Science) – Biochemistry, Genetics, Microbiology & Immunology, Physiology or Pharmacology
- BSc (Molecular Biology)
- BSc (Molecular & Drug Design)
- B Food & Nutrition Science

**The University of New South Wales**
- BSc – Anatomy, Biochemistry, Biological Sciences, Biotechnology, Ecology, Food Science, Genetics, Medical Microbiology & Immunology, Microbiology, Molecular Biology (Last 1.5 years)
- BMedSc (Last 1.5 years)
- BSc (Adv Sc) (Hons) – Anatomy, Biochemistry, Biological Sciences, Biotechnology, Ecology, Genetics, Medical Microbiology & Immunology, Microbiology, Molecular Biology (Last 2.5 years)
- BSc (Biotechnology) (Hons) (Last 2.5 years)

**The University of Queensland**
- Bachelor of Biotechnology (Molecular Biotechnology) or (Microbial Biotechnology)
- BSc (Biochemistry & Molecular Biology)
- BSc (Biomedical Science) – Human Genetics, Immunology & Infectious Diseases
- BSc (Genetics)
- BSc (Microbiology)
- Bachelor of Food Technology

# AUSTRALIAN DEGREE TRANSFER PROGRAMME (SCIENCE)

SPM / O-Level or equivalent

STPM / UEC or equivalent

Foundation in Science / Cambridge A-Level (CAL) /
SACE International (formerly known as South Australian Matriculation - SAM) or equivalent

Australian Degree Transfer Programme (Science)
**Year 1**

Australian Degree Transfer Programme (Science)
**Year 2**

**AUSTRALIA**

**The University of Adelaide (Years 2 & 3)**
- BSc – any two of Biochemistry, Genetics, Microbiology & Immunology
- BSc (Biotechnology)
- BSc (Biomedical Science) – Biochemistry, Genetics, Microbiology & Immunology, Physiology or Pharmacology
- BSc (Molecular Biology)
- BSc (Molecular & Drug Design)
- B Food & Nutrition Science

**The University of New South Wales**
- BSc – Anatomy, Biochemistry, Biological Sciences, Biotechnology, Ecology, Food Science, Genetics, Medical Microbiology & Immunology, Microbiology, Molecular Biology, Pharmacology, Physiology (Last 2 years)
- BMedSc (Last 2 years)
- BSc (Adv Sc) (Hons) – Anatomy, Biochemistry, Biological Sciences, Biotechnology, Ecology, Food Science, Genetics, Medical Microbiology & Immunology, Microbiology, Molecular Biology, Pharmacology, Physiology (Last 3 years)
- BSc (Biotechnology) (Hons) (Last 3 years)

**The University of Queensland (Years 2 & 3)**
- Bachelor of Biomedical Science
- Bachelor of Biotechnology (Molecular Biotechnology) or (Microbial Biotechnology)
- Bachelor of Food Technology
- BSc (Biochemistry & Molecular Biology)
- BSc (Biomedical Science) – Anatomy, Developmental Biology, Human Genetics, Immunology & Infectious Diseases, Neuroscience, Pharmacology and Physiology
- BSc (Ecology)
- BSc (Food Science) or (Food Science & Nutrition)
- BSc (Genetics)
- BSc (Marine Science)
- BSc (Microbiology)
- BSc (Plant Science)
- BSc (Zoology)

**University of South Australia**
- BmedSc (1.5 years)

**UK**

**University of Essex**
- BSc Biological Sciences
- BSc Biochemistry
- BSc Zoology

**University of West England (Years 2 & 3)**
- BSc Biomedical Sciences
- BSc Biological Sciences

**NEW ZEALAND**

**Victoria University of Wellington**
- BSc (Year 2+3)
- BSc (Biomedical Sciences)(Year 2+3)

**The University of Adelaide (Year 3)**
- BSc – any two of Biochemistry, Genetics, Microbiology & Immunology
- BSc (Biotechnology)
- BSc (Biomedical Science) – Biochemistry, Genetics, Microbiology & Immunology or Pharmacology

**The University of New South Wales**
- BSc – Anatomy, Biochemistry, Biological Sciences, Biotechnology, Ecology, Food Science, Genetics, Medical Microbiology & Immunology, Microbiology, Molecular Biology (Last 1.5 years)
- BMedSc (Last 1.5 years)
- BSc (Adv Sc) (Hons) – Anatomy, Biochemistry, Biological Sciences, Biotechnology, Ecology, Genetics, Medical Microbiology & Immunology, Microbiology, Molecular Biology (Last 2.5 years)
- BSc (Biotechnology) (Hons) (Last 2.5 years)

**The University of Queensland (Year 3)**
- Bachelor of Biotechnology (Molecular Biotechnology) or (Microbial Biotechnology)
- BSc (Biochemistry & Molecular Biology)
- BSc (Biomedical Science) – Human Genetics and Immunology & Infectious Diseases
- BSc (Genetics)
- BSc (Microbiology)

**Queensland University of Technology**
- BAppSc (Biochemistry) (Last 1.5 years)
- BAppSc (Microbiology) (Last 1.5 years)
- BAppSc (Biotechnology) (Last 1.5 years)
- BBiotech Innovation (Hons) (Last 3 years)

# ENTRY REQUIREMENTS

## Foundation in Science

Biological Science / Bioscience & Pure Science / Other Science Area Pathway

*SPM / O-Level / Equivalent:
5 credits including Mathematics and two other Pure Science subjects and a pass in Bahasa Malaysia and English

*UEC / Equivalent:
3Bs including Mathematics, two other Science subjects and a pass in English

*Note: Depending on the final degree choice (Medicine, Dentistry, Pharmacy, Health Science and Allied Health). Please refer to the Head of Programme for further information on the requirements.

## Bachelor of Biotechnology (Hons)

Foundation
Completion of Foundation Programme with a CGPA of 2.00, or its equivalent, and possess SPM with 3 credit in Mathematics, 1 science subject and 1 any other subject, or its equivalent

A-Level
2 principal passes in any of 2 science subjects

STPM
2 grade C in any 2 subjects, or its equivalent; and possess SPM with 3 credits in Mathematics, 1 science subject and 1 any other subject, or its equivalent

SACE International
(formerly known as South Australian Matriculation (SAM)
ATAR of 70 and possess SPM/ its equivalent with 3 credits in Mathematics, 1 science subject and 1 any other subject, or its equivalent

NSW (HSC)
ATAR of 70 and possess SPM/ its equivalent with 3 credits in Mathematics, 1 science subject and 1 any other subject, or its equivalent

Australian Year 12
ATAR of 70 and possess SPM/ its equivalent with 3 credits in Mathematics, 1 science subject and 1 any other subject, or its equivalent

UEC
5Bs including Mathematics and 1 science subject

Canadian Pre-U (Ontario Senior Secondary Diploma)
6 subjects with minimum average score of 68 and possess SPM/its equivalent with 3 credits in Mathematics, 1 science subject and 1 any other subject, or its equivalent

Matriculation in related fields
Programme with a CGPA of 2.00, or its equivalent, and possess SPM with 3 credit in Mathematics, 1 science subject and 1 any other subject, or its equivalent

Diploma
Completion of Diploma with a minimum CGPA of 2.00, or its equivalent.

MUFY
4 subjects with minimum average score of 61

Others
Other equivalent qualifications as recognised by the Malaysian government

## Australian Degree Transfer Programme (Science)

Foundation
Completion of Foundation Programme with a CGPA of 2.00, or its equivalent, and possess SPM with 3 credit in Mathematics, 1 science subject and 1 any other subject, or its equivalent

A-Level
2 principal passes in any of 2 science subjects

STPM
2 grade C in any 2 subjects, or its equivalent; and possess SPM with 3 credits in Mathematics, 1 science subject and 1 any other subject, or its equivalent

SACE International
(formerly known as South Australian Matriculation (SAM)
ATAR of 70 and possess SPM/ its equivalent with 3 credits in Mathematics, 1 science subject and 1 any other subject, or its equivalent

NSW (HSC)
ATAR of 70 and possess SPM/ its equivalent with 3 credits in Mathematics, 1 science subject and 1 any other subject, or its equivalent

Australian Year 12
ATAR of 70 and possess SPM/ its equivalent with 3 credits in Mathematics, 1 science subject and 1 any other subject, or its equivalent

UEC
5Bs including Mathematics and 1 science subject

Canadian Pre-U (Ontario Senior Secondary Diploma)
6 subjects with minimum average score of 68 and possess SPM/its equivalent with 3 credits in Mathematics, 1 science subject and 1 any other subject, or its equivalent

Matriculation in related fields
Programme with a CGPA of 2.00, or its equivalent, and possess SPM with 3 credit in Mathematics, 1 science subject and 1 any other subject, or its equivalent

Others
Other equivalent qualifications as recognised by the Malaysian government

*Note:*
*The credit requirement at SPM level can be exempted should the grades obtained are equivalent / higher.*
*Student must obtain 5Bs at UEC AND credit in Mathematics and 1 science subject at SPM.*

# FOUNDATION IN SCIENCE

This programme prepares students for admission into science-related degrees in INTI. It is designed to equip students with a solid fundamental knowledge of their field of study, which includes Physics, Chemistry, Mathematics, English and Basic Computing.

## Learning approach

Students will be introduced to various active learning methodologies such as Problem-based Learning, group discussions and projects, helping them to develop academically in areas like study skills, presentation skills, research skills and time management, which are all prerequisites for academic success. This will further enhance their critical and analytical skills, preparing them for the demands of the workplace.

## Assessment

Assessment of individual courses in the Foundation Programme consists of two components:
- Continuous course work (50%)
- Final examination (50%)

The continuous course work component comprises different assessment tasks such as projects, assignments, laboratory work, presentations, tests, and others as assigned throughout each semester. The final examination is conducted at the end of each semester. The assessments are subject to quality assurance procedures to maintain high standards and ensure fair assessment.

## Offered at

INTI International University
(R2/010/3/0198)(03/24)(A10019)

**INTAKES: JAN, MAY & AUG**

INTI International College Subang
(N/010/3/0445)(04/22)(MQA/FA8898)

INTI International College Penang
(N/010/3/0422)(09/21)(MQA/FA8334)

**INTAKES: JAN, MAY & AUG**

## Duration

1 Year

## Programme structure

**Year 1**
- Chemistry 1
- Chemistry 2
- English Language Skills 1
- English Language Skills 2
- General Studies
- Human Communication
- Mathematics 1
- Mathematics 2
- Self-Development Skills
- Skills for Creative Thinking

**Elective papers for Biological Science/ Bioscience* Pathway**
- Basic Computing
- Biology 1
- Biology 2
- Statistics

**Elective papers for Pure Science / Other Science Area* Pathway**
- Biology 1
- Biology 2
- Physics 1
- Physics 2

**Elective papers for Engineering Pathway**
- Physics 1
- Physics 2
- Engineering Mechanics
- Basic Computing

** Applicable to INTI International University only.*

# BACHELOR OF BIOTECHNOLOGY (HONS)

This programme provides training in the practical application of organisms, or their cellular components, to manufacturing, service industries and environmental management. It provides sound training in core Molecular Biosciences (Biochemistry,Genetics, Microbiology, Molecular Biology and Immunology), leading to different areas of Biotechnology. Compulsory Biotechnology projects as well as internships with biotechnology and molecular bioscience companies will further enhance the employability of graduates.

## Highlights

- The programme spans a variety of key biotechnology areas from optimisation of processes such as those involved in producing antibiotics, vaccines, monoclonal antibodies, and genetically engineered transgenic plants and animals, to carrying out gene therapy, improving water and land management, and remedying pollution
- Well-equipped labs, where all Biotechnology undergraduates will have the opportunity to use advanced equipment such as the Real-Time PCR, HPLC, Bioreactor, Sonicator and Inverted Microscope
- Students may transfer to partner universities in Australia upon completing 1 or 2 years at INTI International University
- Students may change their majors when transferring to partner universities
- Collaborations with prestigious partner universities such as the University of Adelaide, University of New South Wales, University of Queensland and the University of South Australia

## Career opportunities

- Science Officer, Science Researcher, Clinical and Regulatory Executive or Officer, Field Application Specialist, Technical Support Executive or Officer, Service Engineer, Quality Assurance Officer (Executive, Supervisor or Analyst), Quality Control Officer (Supervisor, Assistant or Analyst), Safety Specialist
- Industries in the public or private sector: biotechnology, food and drink (including brewing), health and beauty care, chemical and pharmaceutical manufacturing companies, research companies (including companies conducting clinical trials), clinical diagnostic laboratories, analytical and testing laboratories, environmental pollution control companies, hospitals, patent companies, various government research agencies and facilities (medicine, farming and agriculture, fisheries, forestry, etc.), forensic services and universities

## Offered at

INTI International University
(R2/545/6/0009)(05/22)(A7640)

**INTAKES: JAN, JUNE & AUG**

## Duration

3 Years (9 semesters)

## Programme structure

**Year 1**
- Biology of Organisms
- Chemistry 1
- Chemistry 2
- Introduction to Biotechnology
- Mathematics & Statistics
- Molecular & Cell Biology
- Organisation & Management

**Year 2**
- Analysis of Genetic Inheritance
- Biochemistry of Biomolecules & Enzymes
- Bioinstrumentation & Analytical Techniques
- Biotechnology Laboratory 1
- Cell & Tissue Culture
- Cellular & Metabolic Biochemistry
- Chromosomes, Gene Regulation & Evolution
- Fermentation Technology
- Immunology
- Microbiology
- Recombinant DNA Technology

**Year 3**
- Agrobiotechnology
- Bioethics
- Bioinformatics
- Biotechnology Laboratory 2
- Biotechnology Laboratory 3
- Biotechnology Practice
- Biotechnology Project
- Environmental Biotechnology
- Industrial Biotechnology
- Internship
- Medical Biotechnology
- Methods & Skills in Research

## MPU subjects

- Bahasa Kebangsaan A*
- Community Service
- Corporate Social Responsibility
- Design Thinking
- Ethnic Relations (Local students) / Communicating in Malay 3 (International students)
- Islamic & Asian Civilisation (Local students) / Malaysian Studies 3 (International students)

** For Malaysian students who do not have a credit in SPM BM.*

# AUSTRALIAN DEGREE TRANSFER PROGRAMME (SCIENCE)

Students can pursue Biotechnology, Life Sciences, Molecular Biosciences or Biomedical Sciences for up to the first two years of the degree programme. Successful students can transfer to partner universities in Australia, New Zealand or the United Kingdom to complete the degree. It is noteworthy that a number of the collaboration universities are consistently ranked among the top 200 universities worldwide by The Times Higher Education. On the QS World University Rankings are the University of Adelaide, University of New South Wales, University of Queensland, University of Essex and University of the West of England. In Year 1, students take up the core basic sciences in Chemistry and Molecular & Cell Biology, supported by courses in Mathematics, Management, and Computing. In Year 2, they proceed to "cornerstone" courses in Biochemistry, Biotechnology, Genetics, Microbiology, and Immunology.

** For Malaysian students who do not have a credit in SPM BM.*

## Highlights

- Well-equipped labs, where all Australian Degree Transfer Programme (Science) students will have the opportunity to use advanced equipment such as the Real-Time PCR, HPLC, Bioreactor, Sonicator and Inverted Microscope
- Collaboration with prestigious partner universities like the University of Adelaide, University of New South Wales, University of Queensland and Queensland University of Technology

## Career opportunities

- Science Officer, Researcher, Clinical and Regulatory Executive, Regulatory Officer, Field Application Specialist, Technical Support Executive (Officer), Service Engineer, Quality Assurance Officer (Executive or Supervisor or Analyst), Quality Control Officer (Supervisor, Assistant or Analyst), Safety Specialist
- Industries in the public or private sector: biotechnology, food and drink (including brewing), farming and agriculture, health and beauty care, research companies, medical and scientific instruments companies, chemical and pharmaceutical manufacturing companies, research companies (including companies conducting clinical trials), clinical diagnostic laboratories, analytical and testing laboratories, environmental pollution control companies, hospitals, blood banking services, government research agencies and facilities (medicine, farming and agriculture, fisheries, forestry, etc.), forensic services and universities

## Offered at

INTI International University
(R/440/6/0017)(06/24)(A10501)

**INTAKES: JAN, MAY & AUG**

## Duration

6 Semesters

## Programme structure

**Level 1**
- Biology of Organisms
- Chemistry 1
- Chemistry 2
- Computing
- Introduction to Biotechnology
- Mathematics and Statistics
- Molecular and Cell Biology
- Organisation and Management

**Level 2**
- Biochemistry 1
- Biochemistry 2
- Biotechnology Laboratory
- Bioinstrumentation & Analytical Techniques
- Cell and Tissue Culture
- Fermentation Technology
- Genetics 1
- Genetics 2
- Immunology
- Microbiology
- Recombinant DNA Technology

## MPU subjects

- Bahasa Kebangsaan A*
- Community Service
- Corporate Social Responsibility
- Design Thinking
- Ethnic Relations (Local students) / Communicating in Malay 2 (International students)
- Islamic & Asian Civilisation (Local students) / Malaysian Studies 3 (International students)

# HEAR WHAT OUR ALUMNI SAY

"INTI believes in giving its students a balanced life. My years spent there were full of opportunities to build our soft skills, in addition to excellent classes taught by dedicated lecturers. Coupled with conducive facilities and quiet and calm surroundings, INTI became like a second home. If there's one thing I've learned here, it's to find joy in learning new things. A positive attitude has helped me tremendously in dealing with challenges in the working world."

**WAN NURUL AISYAH**
Worked at IP Associate, Adipven (M) Sdn Bhd
Bachelor of Biotechnology (Hons)

"Back in 2011 when the Malaysian biotechnology scene was just emerging, I joined INTI because it had one of the most established and reputable Biotechnology programmes. What I really liked was the integrated learning experience which went way beyond doing coursework. Subsequently, INTI Career Services was instrumental in helping me secure a internship opportunity that led to a permanent position as a research scientist. I know I am very fortunate to be in a career that I love. "

**ARUTCHELVAM BALAKRISHNAN**
Senior Scientist at Sime Darby Technology Centre
Bachelor of Biotechnology (Hons)

"One of the best things about INTI was its diverse student population. Interacting with them offered priceless insights into cultures from all over the world. The experience groomed me to cope better in the working world, where everyday you will face adversity or challenges."

**LEW ZIEN**
Management Associate at Ant Futurtes a.k.a Ento Malaysia
Bachelor of Biotechnology (Hons)

"Looking back, my INTI journey was a pivotal stepping stone to some of my greatest accomplishments. After completing my Biotechnology programme, I realized I had a passion for food science, so I decided to pursue my Masters in Food Science and Innovation at Manchester Metropolitan University. In the UK, I participated in a host of interesting projects – from developing beer from bakery products to collaborating with one of UK's biggest supermarket chains and getting my food safety HACCP certification. Can't wait to make my mark in the food industry!"

**LIEW ZEH SAN**
Bachelor of Biotechnology (Hons)

# EMPLOYER PROJECTS

INTI has established close ties with leading companies in the industry to develop employer projects to enable students to gain real, hands-on work experience while studying. Through these projects, students are presented with immediate challenges faced by businesses, and are required to work together in teams to develop and present their proposals. Projects are based on real-life business issues that will help students to develop their knowledge and apply their soft skills in actual business scenarios.

Some employer projects undertaken by our students:

### THE OPTIMISATION OF GROWTH FACTORS FOR PLANT CULTURE WITH HIGH DECORATIVE VALUE

TerraLiving Enterprise

The growth of plants in outdoor greenhouses has proven to be challenging due to temperature fluctuation, inconsistent sunlight exposure and pest outbreaks. Students from the Bachelor of Biotechnology programme collaborated with TerraLiving Enterprise to find the best way to grow plants with high decorative value in an outdoor greenhouse e.g. moss and lower plants (Leucobryum glaucum, Hypnum plumaeforme, Bryum sp.) If the current breed of plants could not adapt to the indoor environment, an artificial selection of plant would be used to perform.

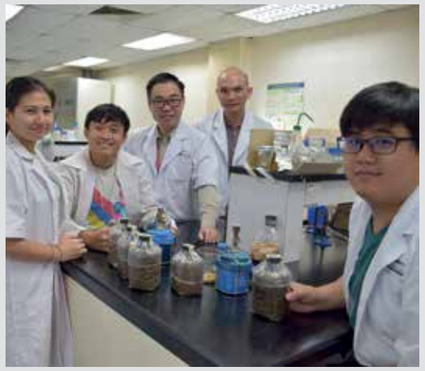
The students put together a collaborative study to come up with practical ways of cultivating indoor plants, using different growth parameters and applied knowledge gained in Agrobiotechnology to determine the best parameters for the study. The creative and highly motivated students also utilised knowledge and entrepreneurial skills obtained in Industrial Biotechnology to propose the commercial aspects of indoor plant cultivation that could reduce overall cost for TerraLiving.

### THE OPTIMISATION OF SUBSTRATES FOR THE CULTIVATION OF MUSHROOMS WITH HIGH COMMERCIAL VALUE

Nas Agro Farm

The objective of this project was to determine the commercial and scientific benefit of using an alternative green and renewable source as a substrate for the cultivation of oyster mushrooms.

INTI students were required to identify a readily available resource to be tested as a potential substrate for mushroom cultivation, substituting sawdust, a conventional mushroom growing medium which is not environmental friendly. Thus, a new medium is pressingly needed for the sustainable development of the industry. The students successfully identified an alternative green and renewable source, with the correct formulation, as a potential replacement for the current medium.



# BIOTECHNOLOGY COMPETITIONS AND STUDENT ACTIVITIES

## YOUNG SOUTH EAST ASIAN LEADERSHIP INITIATIVE (YSEALI) WORLD OF FOOD INNOVATION CHALLENGE BY THE U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT (USAID)

INTI won 3rd place in YSEALI World of Food Innovation Challenge. The challenge aimed to collect innovative technology solutions and addressed some of South East Asia's most complex challenges in the fields of agriculture, aquaculture and fisheries. INTI's team started their quest with an information-based mobile application which aimed to provide live data from fish farms and information about fish diseases to the farm operators. In addition to that, the application was designed to connect buyers and sellers through a marketplace, including a forum for the farm operators to communicate with government agencies, universities, and fish experts.


Winning Team: Tan How Ming, Liew Zien, Nur Syafiyah Nabilah binti Arma, and their academic instructor Associate Professor Dr. Wong Ling Shing

## THE INTERNATIONAL INNOVATION FESTIVAL ORGANISED BY UNIVERSITI TEKNIKAL MALAYSIA MELAKA (UTEM) IN COLLABORATION WITH THE MINISTRY OF EDUCATION (MOE) AND THE MINISTRY OF SCIENCE, TECHNOLOGY AND INNOVATION MALAYSIA (MOSTI)

INTI won silver medal in a competition where students showcased their creativity and innovation through the products designed. The team's creation - My Pollution Detector (My-PD) - a smartphone with the special ability to detect air pollutants, caught the attention of judges and visitors. The product has great market potential given its low setup cost, high demand for the detection of pollutants, multi-purpose functions, immediate reading and easy single-click start up.

## BIOTECHNOLOGY STUDENTS WON SILVER MEDAL IN INIIC

More than 90 teams from Malaysia, Thailand, Indonesia and Hong Kong joined the competition. Competing with other top research universities in the region, our biolotechnology students' innovation, the Contaminant Free Glove, won the silver medal. Their innovation was subsequently highlighted in the prestigious Innovative Scientific Journal (ISJ).

## TERRARIUM WORKSHOP BY RAYMOND YEOW, CEO OF TERRALIVING AND PROUD INTI ALUMNI

Students had the opportunity to participate in a terrarium-making workshop. The workshop was conducted by Raymond Yeow, CEO of TerraLiving and a proud INTI alumni. At the end of the workshop, each participant had their own personalised terrarium to take home. The workshop covered a step-by-step guide for participants on harvesting moss, storage methods for moss, a video and slideshow presentation, in-depth highlights on Biology of mosses, hands-on terrarium crafting and an invaluable knowledge sharing session!