Preparatory Course for Cambridge International General Certificate of Secondary Education (IGCSE) Upper Secondary

At a Glance

Awarding Institution	:	Cambridge International Examinations
Modes of Study	:	Full-Time (International & Singapore-based Students)
Duration	:	24 months
Commencement & End Date	:	NIL

Overview

The Preparatory Course for Cambridge International General Certificate of Secondary Education (IGCSE) Upper Secondary is a 24-month course.

All information is accurate at the time of update on 6 Mar 2026.
For the most updated information, please visit psb-academy.edu.sg.

Admission Criteria

Minimum Age:

- 14 Years Old

Local Qualifications

- Completed Year 8

English Language Requirement

- PSB Academy CEP Level 5 or IELTS 5.0

International Qualifications

- https://www.psb-academy.edu.sg/intl-adm/

Course Fees*

	Singapore-based Students	International Students
Course Fees		
Course Fee	NIL	NIL
Other Mandatory Fees		
Application Fee	NIL	NIL

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

*GST Inclusive.

Modules

Students are required to enrolled into 05 subjects out of the 08 registered / offered. 03-compulsory subjects and 02-elective subjects with the combination as below:

03 x Compulsory Subjects

01. Mathematics
02. English - First Language or English as a Second Language (Speaking Endorsement) / English as a Second Language (Count-in Speaking)
03. Business Studies or Science – Combined

02 x Elective Subjects

01. Accounting
02. Chinese - Second Language
03. Business Studies or Science - Combined

Graduation Requirements

For graduation requirements, please refer here.

Annex | Module Outlines

English – First Language

Cambridge IGCSE First Language English is designed for learners whose first language is English.
The course enables learners to:

- develop the ability to communicate clearly, accurately and effectively when speaking and writing
- use a wide range of vocabulary, and the correct grammar, spelling and punctuation
- develop a personal style and an awareness of the audience being addressed.

English as a Second Language (Speaking Endorsement)

The subject aims to:

- develop learners' ability to use English effectively for the purpose of practical communication
- form a solid foundation for the skills required for further study or employment using English as the medium
- develop learners' awareness of the nature of language and language-learning skills
- promote learners' personal development.

English as a Second Language (Count-in Speaking)

The subject aims to:

- enable candidates to understand and respond to what they hear, read and experience
- enable candidates to communicate accurately, appropriately, confidently and effectively
- encourage candidates to enjoy and appreciate a variety of language
- complement candidates' ability to work with information and ideas in other areas of study, for example,
- by developing skills of analysis, synthesis and the drawing of inferences
- promote candidates' personal development and an understanding of themselves and others.

Mathematics

This subject encourages the development of mathematical knowledge as a key life skill, and as a basis for more advanced study. The syllabus aims to build learners' confidence by helping them develop a feel for numbers, patterns and relationships, and places a strong emphasis on solving problems and presenting and interpreting results.

Learners also gain an understanding of how to communicate and reason using mathematical concepts.

Chinese – Second Language

This subject aims to allow learners achieve a thorough understanding of a wide range of registers and styles and learn to communicate appropriately in different situations.

The syllabus focuses on the linked language skills of reading, writing and oral communication. Through this subject, learners can achieve a level of practical communication ideal for everyday use, which can also form the basis for further, more in-depth language study.

Science – Combined

This subject gives learners the opportunity to study Biology, Chemistry and Physics, each covered in separate syllabus sections. It is a single award qualification, earning one grade.

Learners gain an understanding of the basic principles of each subject through a mix of theoretical and practical studies, while also developing an understanding of the scientific skills essential for further study.

Business Studies

This subject develops learners' understanding of business activity in the public and private sectors, and the importance of innovation and change.

Learners find out how the major types of business organisation are established, financed and run, and how their activities are regulated.

Factors influencing business decision-making are also considered, as are the essential values of cooperation and interdependence.

Learners not only study business concepts and techniques but also enhance related skills such as numeracy and enquiry.

Accounting

The Cambridge IGCSE Accounting syllabus introduces learners to the theory and concepts of accounting and the ways in which accounting is used in a variety of modern economic and business contexts.

Learners focus on the skills of recording, reporting, presenting and interpreting financial information and build an ideal foundation both for further study and for a future career within the profession.

Preparatory Course for Cambridge International General Certificate of Secondary Education (IGCSE) (Year 9)

At a Glance

Awarding Institution	:	Cambridge International Examinations
Modes of Study	:	Full-Time (International & Singapore-based Students)
Duration	:	12 months
Commencement & End Date	:	NIL

Overview

The Preparatory Course for Cambridge International General Certificate of Secondary Education (IGCSE) (Year 9) is a twelve-month course.

All information is accurate at the time of update on 6 Mar 2026.
For the most updated information, please visit psb-academy.edu.sg.

Admission Criteria

Minimum Age:

- 14 Years Old

Local Qualifications

- Completed Year 8

English Language Requirement

- PSB Academy CEP Level 5 or IELTS 5.0

International Qualifications

- https://www.psb-academy.edu.sg/intl-adm/

Course Fees*

	Singapore-based Students	International Students
Course Fees		
Course Fee	NIL	NIL
Other Mandatory Fees		
Application Fee	NIL	NIL

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

*GST Inclusive.

Modules

Students are required to enrolled into 05 subjects out of the 08 registered / offered. 03-compulsory subjects and 02-elective subjects with the combination as below:

03 x Compulsory Subjects

01. Mathematics
02. English - First Language or English as a Second Language (Speaking Endorsement) / English as a Second Language (Count-in Speaking)
03. Business Studies or Science – Combined

02 x Elective Subjects

01. Accounting
02. Chinese - Second Language
03. Business Studies or Science - Combined

Graduation Requirements

For graduation requirements, please refer here.

Annex | Module Outlines

English – First Language

Cambridge IGCSE First Language English is designed for learners whose first language is English.
The course enables learners to:

- develop the ability to communicate clearly, accurately and effectively when speaking and writing
- use a wide range of vocabulary, and the correct grammar, spelling and punctuation
- develop a personal style and an awareness of the audience being addressed.

English as a Second Language (Speaking Endorsement)

The subject aims to:

- develop learners' ability to use English effectively for the purpose of practical communication
- form a solid foundation for the skills required for further study or employment using English as the medium
- develop learners' awareness of the nature of language and language-learning skills
- promote learners' personal development.

English as a Second Language (Count-in Speaking)

The subject aims to:

- enable candidates to understand and respond to what they hear, read and experience
- enable candidates to communicate accurately, appropriately, confidently and effectively
- encourage candidates to enjoy and appreciate a variety of language
- complement candidates' ability to work with information and ideas in other areas of study, for example,
- by developing skills of analysis, synthesis and the drawing of inferences
- promote candidates' personal development and an understanding of themselves and others.

Mathematics

This subject encourages the development of mathematical knowledge as a key life skill, and as a basis for more advanced study. The syllabus aims to build learners' confidence by helping them develop a feel for numbers, patterns and relationships, and places a strong emphasis on solving problems and presenting and interpreting results.

Learners also gain an understanding of how to communicate and reason using mathematical concepts.

Chinese – Second Language

This subject aims to allow learners achieve a thorough understanding of a wide range of registers and styles and learn to communicate appropriately in different situations.

The syllabus focuses on the linked language skills of reading, writing and oral communication. Through this subject, learners can achieve a level of practical communication ideal for everyday use, which can also form the basis for further, more in-depth language study.

Science – Combined

This subject gives learners the opportunity to study Biology, Chemistry and Physics, each covered in separate syllabus sections. It is a single award qualification, earning one grade.

Learners gain an understanding of the basic principles of each subject through a mix of theoretical and practical studies, while also developing an understanding of the scientific skills essential for further study.

Business Studies

This subject develops learners' understanding of business activity in the public and private sectors, and the importance of innovation and change.

Learners find out how the major types of business organisation are established, financed and run, and how their activities are regulated.

Factors influencing business decision-making are also considered, as are the essential values of cooperation and interdependence.

Learners not only study business concepts and techniques but also enhance related skills such as numeracy and enquiry.

Accounting

The Cambridge IGCSE Accounting syllabus introduces learners to the theory and concepts of accounting and the ways in which accounting is used in a variety of modern economic and business contexts.

Learners focus on the skills of recording, reporting, presenting and interpreting financial information and build an ideal foundation both for further study and for a future career within the profession.

Preparatory Course for Cambridge International General Certificate of Secondary Education (IGCSE) (Year 10)

At a Glance

Awarding Institution	:	Cambridge International Examinations
Modes of Study	:	Full-Time (International & Singapore-based Students)
Duration	:	12 months
Commencement & End Date	:	NIL

Overview

The Preparatory Course for Cambridge International General Certificate of Secondary Education (IGCSE) (Year 10) is a twelve-month course.

All information is accurate at the time of update on 6 Mar 2026.
For the most updated information, please visit psb-academy.edu.sg.

Admission Criteria

Minimum Age:

- 15 Years Old

Local Qualifications

- Completed Year 9

English Language Requirement

- PSB Academy CEP Level 5 or IELTS 5.0

International Qualifications

- https://www.psb-academy.edu.sg/intl-adm/

Course Fees*

	Singapore-based Students	International Students
Course Fees		
Course Fee	NIL	NIL
Other Mandatory Fees		
Application Fee	NIL	NIL

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

*GST Inclusive.

Modules

Students are required to enrolled into 05 subjects out of the 08 registered / offered. 03-compulsory subjects and 02-elective subjects with the combination as below:

03 x Compulsory Subjects

01. Mathematics
02. English - First Language or English as a Second Language (Speaking Endorsement) / English as a Second Language (Count-in Speaking)
03. Business Studies or Science – Combined

02 x Elective Subjects

01. Accounting
02. Chinese - Second Language
03. Business Studies or Science - Combined

Graduation Requirements

For graduation requirements, please refer here.

Annex | Module Outlines

English – First Language

Cambridge IGCSE First Language English is designed for learners whose first language is English.
The course enables learners to:

- develop the ability to communicate clearly, accurately and effectively when speaking and writing
- use a wide range of vocabulary, and the correct grammar, spelling and punctuation
- develop a personal style and an awareness of the audience being addressed.

English as a Second Language (Speaking Endorsement)

The subject aims to:

- develop learners' ability to use English effectively for the purpose of practical communication
- form a solid foundation for the skills required for further study or employment using English as the medium
- develop learners' awareness of the nature of language and language-learning skills
- promote learners' personal development.

English as a Second Language (Count-in Speaking)

The subject aims to:

- enable candidates to understand and respond to what they hear, read and experience
- enable candidates to communicate accurately, appropriately, confidently and effectively
- encourage candidates to enjoy and appreciate a variety of language
- complement candidates' ability to work with information and ideas in other areas of study, for example,
- by developing skills of analysis, synthesis and the drawing of inferences
- promote candidates' personal development and an understanding of themselves and others.

Mathematics

This subject encourages the development of mathematical knowledge as a key life skill, and as a basis for more advanced study. The syllabus aims to build learners' confidence by helping them develop a feel for numbers, patterns and relationships, and places a strong emphasis on solving problems and presenting and interpreting results.

Learners also gain an understanding of how to communicate and reason using mathematical concepts.

Chinese – Second Language

This subject aims to allow learners achieve a thorough understanding of a wide range of registers and styles and learn to communicate appropriately in different situations.

The syllabus focuses on the linked language skills of reading, writing and oral communication. Through this subject, learners can achieve a level of practical communication ideal for everyday use, which can also form the basis for further, more in-depth language study.

Science – Combined

This subject gives learners the opportunity to study Biology, Chemistry and Physics, each covered in separate syllabus sections. It is a single award qualification, earning one grade.

Learners gain an understanding of the basic principles of each subject through a mix of theoretical and practical studies, while also developing an understanding of the scientific skills essential for further study.

Business Studies

This subject develops learners' understanding of business activity in the public and private sectors, and the importance of innovation and change.

Learners find out how the major types of business organisation are established, financed and run, and how their activities are regulated.

Factors influencing business decision-making are also considered, as are the essential values of cooperation and interdependence.

Learners not only study business concepts and techniques but also enhance related skills such as numeracy and enquiry.

Accounting

The Cambridge IGCSE Accounting syllabus introduces learners to the theory and concepts of accounting and the ways in which accounting is used in a variety of modern economic and business contexts.

Learners focus on the skills of recording, reporting, presenting and interpreting financial information and build an ideal foundation both for further study and for a future career within the profession.

Certificate in Engineering Foundation

At a Glance

Awarding Institution	:	PSB Academy
Modes of Study	:	Full-time (International & Singapore-based Students) Part-time (Singapore-based Students)
Duration	:	6 months
Commencement & End Date	:	NIL

Overview

The Certificate in Engineering Foundation programme is designed to equip students with core concepts of engineering physics and mathematics. These fundamentals are crucial in developing technical problem-solving skills required within an engineering landscape. Additionally, this programme aims to enhance written and oral communication skills which are essential to engineers in their working environment.

Professional Certification

Earn both the optional Certified Secure Computer User industry certification from EC-Council and an academic certificate.

EC-Council

EC-Council is the world's largest cyber security technical certification body. They have trained and certified over 200,000 information security professionals globally. Their certification programmes are recognised worldwide and have received endorsements from various government agencies including the US Federal Government.

PSB Academy is proud to be awarded EC-Council Academia Partner of the Year in 2022 for excellence in cyber security training and education.

Industry / Professional Recognition

Enjoy networking opportunities and access to professional events with The Institution of Engineers, Singapore (IES) and The Institution of Engineering and Technology (IET) student chapter memberships.

Progression Pathway

Upon completion of this Certificate in Engineering Foundation course, graduates may advance to:

PSB Academy

- Diploma in Electrical Engineering Technology
- Diploma in Mechanical Engineering Technology

University of Hertfordshire

- Bachelor of Engineering Honours in Robotics and Artificial Intelligence

Admission Criteria

Local Qualifications

- 1 GCE 'O' level passes or equivalent; OR
- Candidates with other qualifications will be considered as case-by-case basis; OR
- Mature candidates (≥ 30 years old with 8 years work experience)

Minimum Age Requirement: 15 years old

English Language Requirement

- GCE 'O' level English (grade 1 to 7); OR
- IELTS score of 5.5; OR
- PSB Academy's Certificate in English Proficiency programme; OR
- PSB Academy English Proficiency Test; OR
- An equivalent English language qualification

International Qualifications: https://www.psb-academy.edu.sg/intl-adm/

Course Fees*

	Singapore-based Students	International Students
Course Fees		
Course Fee	NIL	NIL
Other Mandatory Fees		
Application Fee	NIL	NIL

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

*GST Inclusive.

Modules

- Foundation Mathematics
- Foundation Engineering Physics
- Effective Communication
- Academic Reading and Writing 1
- Secure Computer User*
- Design Thinking

*Students must achieve an overall mark of at least 50% in order to obtain a pass grade in the module to satisfy PSB Academy Certificate requirement and an overall mark of at least 70% in order to obtain the EC-Council Certification: Certified Secure Computer User (CSCU).

Mode of Assessment

Internal Assessment

- Written Exam
- Assignment / Project
- Online Assessments

External Exam

- EC-Council Certified Secure Computer User (CSCU) certification exam for Secure Computer User module

Graduation Requirements

For graduation requirements, please refer here.

Annex | Module Outlines

Foundation Mathematics

This course is designed to prepare students for entry into Diploma programmes (in Computer Science / IT and in Engineering) that require a sound knowledge of foundation mathematics. The course will enable students to have a basic understanding of Arithmetic, Algebra, Geometry, Functions & Graphs, Arithmetic & Geometric Progressions, Set Theory and Trigonometry.

Effective Communication

In the globalised world, it is increasingly important for an organisation to communicate effectively with clients, partners and other stakeholders. It is therefore important for students to appreciate the importance of language. Besides offering a comprehensive overview of the use of English in the work environment context, this module exposes students to the various techniques/skills of oral and written communication.

Academic Reading and Writing 1

There has been a need to improve the English quality of our students and provide them continual support at their certificate levels. This course is designed for students who are enrolled in certificate programmes to work intensively on their reading and writing skills. Good reading and writing skills are the keys to understanding their subjects and effectively engage in class activities. These classes will address a variety of key demands of writing and reading assignments on their courses, focusing on both academic and language skills and to ability to write.

Secure Computer User

This module provides students with the necessary knowledge and skills to protect the information assets. This will immerse students into an interactive environment where they will acquire a fundamental understanding of various computer and network security threats such as identity theft, credit card fraud, online banking phishing scams, virus and backdoors, emails hoaxes, sex offenders lurking online, loss of confidential information, hacking attacks and social engineering. More importantly, the skills learned from this module helps students to take the necessary steps to mitigate their security exposure.

Design Thinking

Design thinking is a creative human-centred approach to solve complex problems. Design thinking converts need into demand. In this module, students will learn the different stages of the design thinking approach, and also the various methods supporting each of the stages. Students work in small groups and will learn to understand the users' needs in deep, prototype and test the innovations to enhance the performance.

Foundation Engineering Physics

This course is designed to prepare students for entry into Diploma programs in Electrical and Mechanical disciples. The course will enable students have a basic understanding of General Physics, Electricity and Magnetism, Thermal Physics.

Certificate in InfoComm Technology

At a Glance

Awarding Institution	:	PSB Academy
Modes of Study	:	Full-time (International & Singapore-based Students) Part-time (Singapore-based Students)
Duration	:	6 months
Commencement & End Date	:	NIL

Overview

The Certificate in InfoComm Technology provides students with a strong basic foundation to develop relevant applications for businesses and public organizations. Students will be equipped with the essential knowledge of business processes and technical skills required to harness the power of information and communication technologies. They will also be able to adopt and apply methodologies in Software Engineering to analyse, design, develop, and implement information systems to gain competitive advantages in the industries.

Upon completion of this course, students can progress to our Diploma in InfoComm Technology or Diploma in Network Defence and Forensic Countermeasures, and thereafter further their degree studies with our partner universities (subject to the university's entry requirements).

Professional Certification

Earn both the optional Certified Secure Computer User industry certification from EC-Council and an academic certificate.

EC-Council

EC-Council is the world's largest cyber security technical certification body. They have trained and certified over 200,000 information security professionals globally. Their certification programmes are recognised worldwide and have received endorsements from various government agencies including the US Federal Government.

PSB Academy is proud to be awarded EC-Council Academia Partner of the Year in 2022 for excellence in cyber security training and education.

All information is accurate at the time of update on 6 Mar 2026 March 2026.
For the most updated information, please visit psb-academy.edu.sg.

Industry Immersion

Enjoy networking opportunities and access to professional events with The Institution of Engineers, Singapore (IES) and The Institution of Engineering and Technology (IET) student chapter memberships.

Progression Pathway

Upon completion of this Certificate in Engineering Foundation course, graduates may advance to:

PSB Academy

- Diploma in InfoComm Technology
- Diploma in Network Defence and Forensic Countermeasures

University of Hertfordshire

- Bachelor of Engineering Honours in Robotics and Artificial Intelligence

Admission Criteria

Local Qualifications

- 1 GCE 'O' level passes or equivalent; OR
- Candidates with other qualifications will be considered as case-by-case basis; OR
- Mature candidates (≥ 30 years old with 8 years work experience)

Minimum Age Requirement: 15 years old

English Language Requirement

- GCE 'O' level English (grade 1 to 7); OR
- IELTS score of 5.5; OR
- PSB Academy's Certificate in English Proficiency programme; OR
- PSB Academy English Proficiency Test; OR
- An equivalent English language qualification

International Qualifications: https://www.psb-academy.edu.sg/intl-adm/

Course Fees*

	Singapore-based Students	International Students
Course Fees		
Course Fee	NIL	NIL
Other Mandatory Fees		
Application Fee	NIL	NIL

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

*GST Inclusive.

Modules

- Foundation Mathematics
- Information Systems
- Academic Reading and Writing 1
- Effective Communication
- Secure Computer User*
- Design Thinking

*Students must achieve an overall mark of at least 50% in order to obtain a pass grade in the module to satisfy PSB Academy Certificate requirement and an overall mark of at least 70% in order to obtain the EC-Council Certification: Certified Secure Computer User (CSCU).

Mode of Assessment

Internal Assessment

- Written Exam
- Assignment / Project
- Online Assessments

External Exam

- EC-Council Certified Secure Computer User (CSCU) certification exam for Secure Computer User module

Graduation Requirements

For graduation requirements, please refer here.

Annex | Module Outlines

Foundation Mathematics

This course is designed to prepare students for entry into Diploma programs (in Computer Science / IT and in Engineering) that require a sound knowledge of foundation mathematics. The course will enable students to have a basic understanding of Arithmetic, Algebra, Geometry, Functions & Graphs, Arithmetic & Geometric Progressions, Set Theory and Trigonometry.

Information Systems

This module provides participants with a bird's eye view of how computers function, the various areas in which computers are used, the various approaches to information needs and its development, and its impact on society. It also provides inputs on the development and use of a computer system. By the end of the module, participants should be intelligent consumers of computers and related products.

Effective Communication

In the globalized world, it is increasingly important for an organisation to communicate effectively with clients, partners and other stakeholders. It is therefore important for students to appreciate the importance of language. Besides offering a comprehensive overview of the use of English in the work environment context, this module exposes students to the various techniques/skills of oral and written communication.

Academic Reading and Writing 1

There has been a need to improve the English quality of our students and provide them continual support at their certificate levels. This course is designed for students who are enrolled in a certificate programmes to work intensively on their reading and writing skills. Good reading and writing skills are the keys to understanding their subjects and effectively engage in class activities. These classes will address a variety of key demands of writing and reading assignments on their courses, focusing on both academic and language skills and ability to write.

Secure Computer User

This module provides students with the necessary knowledge and skills to protect information assets. This will immerse students into an interactive environment where they will acquire a fundamental understanding of various computer and network security threats such as identity theft, credit card fraud, online banking phishing scams, virus and backdoors, emails hoaxes, sex offenders lurking online, loss of confidential information, hacking attacks and social engineering. More importantly, the skills learned from this module helps students to take the necessary steps to mitigate their security exposure.

Design Thinking

Design thinking is a creative human-centred approach to solve complex problems. Design thinking converts need into demand. In this module, students will learn the different stages of the design thinking approach, and the various methods supporting each of the stages. Students work in small groups and will learn to understand the users' needs in deep, prototype and test the innovations to enhance the performance.

Foundation Diploma in Food Science and Nutrition

At a Glance

Awarding Institution	:	PSB Academy, Singapore
Modes of Study	:	Full-time (International & Singapore-based Students) Part-time (Singapore-based Students)
Duration	:	12 months (Full-time) 15 months (Part-time)
Commencement & End Date	:	NIL

Overview

The Foundation Diploma in Food Science and Nutrition (FDFN) programme aims to instil a firm foundation in the basic knowledge of food bioscience and human nutrition, while developing the students' ability to think clearly and to express their ideas, whether verbally or in writing, with clarity and logic. The modules offered in this programme differ qualitatively from traditional science subjects, both in terms of teaching approach and the quality of time spent in the laboratory.

Progression Pathway

Upon completion of this Foundation Diploma in Food Science and Nutrition course, graduates may advance to:

La Trobe University

- Bachelor of Science (Molecular Biology and Biotechnology
- Bachelor of Science (Molecular Biology and Pharmaceutical Science)
- Bachelor of Science (Molecular Biology and Applied Chemistry)

Admission Criteria

Local Qualifications

- 1 GCE 'O' Level or equivalent OR
- NITEC/Higher NITEC; OR
- Mature candidates (≥ 30 years old with 8 years work experience); OR

Candidates with other qualifications will be considered on a case-by-case basis

Minimum Age: 16 years old

English Language Requirement

- GCE 'O' level English (grade 1 to 6); OR
- IELTS score of 5.5; OR
- PSB Academy's Certificate in English Proficiency programme; OR
- PSB Academy English Proficiency Test; OR
- An equivalent English language qualification

International Qualifications:

https://www.psb-academy.edu.sg/intl-adm/

Course Fees*

	Singapore-based Students	International Students
Course Fees		
Course Fee	NIL	NIL
Other Mandatory Fees		
Application Fee	NIL	NIL

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

*GST Inclusive.

Modules

- Food Microbiology and Human Nutrition
- Fundamentals of Chemistry
- Fundamentals of Mathematics
- Introduction to Biological Science
- Introduction to Food Science & Nutrition
- Organic Chemistry
- Physical Chemistry
- Statistics and Applied Mathematics

Mode of Assessment

Assessment of this programme may include assignments, tests, projects, reports, lab work, and final examinations.

Graduation Requirements

For graduation requirements, please refer here.

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Annex | Module Outlines

Food Microbiology and Human Nutrition

This module encompasses both segments of food microbiology as well as human nutrition – they form the core fundamentals in attaining a strong foundation in food science. In the first half of the module, students will learn the basics of microbiology – this pertains to the study of microorganisms, their roles in biotechnology and influence in the ecosystem. There will also be an emphasis on their interactions to food in terms of food spoilage, methods of preservation and foodborne diseases. Given the importance of microorganisms, the first segment will not be complete without a look into the clinical significance of microbiology using various tools for disease diagnosis as well as targeted prevention and treatment. In the second segment, the focus will shift towards understanding nutrition in relation to epidemiology. At the end of the module, the bipartite relationship between genes and human nutrition will be discussed – which is pertinent, especially in Singapore's context where cancer is the primary cause of death.

Fundamentals of Chemistry

Fundamentals of Chemistry provides a general overview of the subject area and is designed for students beginning a formal study of chemistry. The unit presents important background information on several related topics in addition to the basic scientific concepts of chemistry. This module associates with interesting and simple approach of central science and provides insights into a variety of different phenomena and serves as a basis for understanding on the physical universe we live in. This subject presents fundamental concepts intended to better equip students to be well-prepared for the advanced topics of chemistry – physical and organic chemistry for diploma level. Upon completion of the module, students are more aware of the occupational opportunities in science, engineering and technology and are capable of evaluating the academic requirements for different disciplines and ready for future preparation.

Fundamentals of Mathematics

Fundamentals of Mathematics is developed in view of how numerous applications from many fields of technology often include or indicate where and how mathematical techniques can be used. The module aims to provide students with strong fundamentals in algebra, functions, geometry and trigonometry for further studies with integrated applications in mathematics. Group work will be introduced as a method of transforming students from passive to active learners through application questions where students will be encouraged to discuss with their peers and instructor.

Introduction to Biological Science

Introduction to Biological Science aims to provide students with the conceptual framework, factual knowledge, and analytical skills necessary to deal critically with the rapidly changing science of biology. It is divided into three general areas: cellular biochemistry, metabolic and signal transduction pathways, and genetics and genomics. It starts with a general introduction on the scope of life, followed by extensive discussions of bio-molecules, cell structure and processes, and their roles in more complex biological functions and organisation. Genetics, cell biology and molecular biology, which are revolutionising medicine and agriculture, will be introduced. The accompanying extensive laboratory sessions will introduce students to the new tools of modern biology and the process of scientific investigations.

Introduction to Food Science and Nutrition

This module is designed for basic understanding of food science and nutrition – a study of physical, chemical and biological properties of food. Food science or more specifically the food chemistry is largely about the chemical changes in food. It concerns with the chemical reactivities, properties and food compositions which are closely related to the food quality and safety. The focus includes the study of an overview about the food constituents and how the associated chemical and biochemical reactions can affect the properties. This subject will help students to further appreciate the knowledge on how to improve the food formulation/processing and storage stability in other related modules. The unit presents a comprehensive overview of food chemistry and nutrition to provide students with a solid foundation appropriate to underpin further studies in biochemistry, molecular biology, pharmacology and related subjects.

Organic Chemistry

Organic Chemistry provides students with basic principles of organic chemistry and an understanding of the chemical environment. The main emphasis is on the structural approach to organic chemistry and this equips students with basic understanding of the most common and most important synthetic reactions, which include carbon-carbon bond formation, functional groups creation and manipulation. With the role that of organic molecules play in the natural and synthetic world, this allows students to apply methods of scientific inquiry and develop problem solving and critical thinking skills that relate to everyday experiences.

Physical Chemistry

Physical Chemistry focuses on the understanding of concepts central to physical chemistry including the periodic table, gasses, the mole, chemical bonding, acid-base concepts, energy and nuclear chemistry. This module is designed to build a scientific literacy which will permit a greater understanding of industrial processes, environmental concerns, household products and how everyday life depends on chemical phenomena. Students will work on quantitative questions related to stoichiometry solutions, gases and acid-base reactions. This course not only provides students with the opportunity to develop, record and maintain evidence of their written and graphic representation through laboratory reports, it also helps to build the knowledge and skills that are necessary for challenges in the 21st century.

Statistics and Applied Mathematics

Statistics and Applied Mathematics aims to develop further students' understanding of mathematics and mathematical processes and develop abilities to comment and appraise datasets. It also seeks to develop students' ability to think clearly, work carefully and formulate mathematical induction and hypothesis testing approaches to solve problems.

Diploma in Business Administration (Supply Chain Management)

At a Glance

Awarding Institution	:	PSB Academy
Modes of Study	:	Full-time (International & Singapore-based Students) Part-time (Singapore-based Students)
Duration	:	12 months
Commencement & End Date	:	NIL

Overview

The Diploma in Business Administration (Supply Chain Management) is a twelve months course focusing on developing skills needed in supply chain management.

Admission Criteria

Minimum Age: 16 Years Old

Local Qualifications

- 2 GCE 'A' Levels; OR
- PSB Academy Certificate in Business Management; OR
- Candidates with other qualifications will be considered as case-by-case basis; OR
- Mature candidates (≥30 years old with 8 years work experience)

English Language Requirement

- GCE 'O' level English (grade 1 to 6); OR
- IELTS score of 5.5; OR
- PSB Academy's Certificate in English Proficiency programme; OR
- PSB Academy English Proficiency Test; OR
- An equivalent English language qualification

International Qualifications

- https://www.psb-academy.edu.sg/intl-adm/

Course Fees*

	Singapore-based Students	**International Students**
Course Fees		
Course Fee	NIL	NIL
Other Mandatory Fees		
Application Fee	NIL	NIL

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

*GST Inclusive.

Modules

- Business Decision Making
- Management
- Macroeconomics
- Marketing
- Principles of Accounting
- Operational Logistics
- Materials Management and Physical Distribution
- Operations Management
- Academic Reading and Writing 2

Mode of Assessment

Assessment of this programme includes written examinations, assignments, projects and online quizzes.

Graduation Requirements

For graduation requirements, please refer here.

Annex | Module Outlines

Business Decision Making

Business Decision Making is an introductory course in qualitative and quantitative methods which underpin effective business decision making. The module develops students' ability to incorporate statistical thinking and to take account of variation in the real world during processes of establishing project initiatives, defining objectives, data collection, data presentation, data analyses, reporting and decision making.

Management

It is clear that the world is undergoing a tremendous upheaval. Organizations around the world are affected by technology advancements, economic integration, ethical turmoil and economic crises. Managing organizations has become more challenging (and exciting) than before. This module is designed to develop students' understanding of key management theories/concepts and issues affecting managers. It begins by explaining the term 'management' and the value of studying management before turning to key functions of a manager. The four key management functions – planning, organizing, leading and controlling – are discussed in detail to provide students an overview of the activities performed by a typical manager. Managers exist in all organizations regardless of their size, kind and location. By studying management, students would gain insights into the way managers behave, how organizations function, and what concepts one could adopt and adapt to be an effective manager in practice.

Macroeconomics

This module introduces students to relevant macroeconomic concepts and principles. Macroeconomic models will be developed to recognize the interdependence of important components of a macro economy. At the end of the module, students will be able to analyze and report the causes and consequences of economic growth, inflation and unemployment, and formulate appropriate macroeconomic policies as a means to stabilize the economy.

Marketing

It is well known that the financial success of an organisation depends on its marketing ability. One can argue that other business functions do not really matter so long as there is sufficient demand for the firm's goods and services. To be a marketer, one has to know what marketing is, how it works, what is marketed and who does the marketing.

This module aims to provide a comprehensive overview of the famous 4Ps and marketing tools that are commonly used by decision makers to retain and increase customer satisfaction and shareholders value. Students will have the opportunity to apply and reiterate the concepts learnt by means of a group project. Throughout the course, students will be encouraged to relate the subject contents to the marketing efforts that are put in place by 'real' firms, thus creating the opportunity to appreciate how concepts are put into to practice.

Principles of Accounting

This module provides a comprehensive overview of the fundamental principles of Financial Accounting and Management Accounting. It takes students through the entire process of Accounting that includes recording, classifying and summarizing accounting information into reports for decision making. It also introduces students to the double-entry system, the need for adjusting entries, the use of special accounts, and the preparation of financial statements. The module includes budget preparation and management accounting techniques for business decision making. Students are also introduced to current issues such as ethical practices and social responsibility.

Operational Logistics

Operational Logistics aims to introduce the basic fundamental concepts in supply chain management, logistics operations, customer relationship management, integrated logistics planning, global supply chains, network design, operational analysis, collaboration, supply chain performance measurements, and risk and sustainability. It will equip students with an appreciation and the ability to apply the concepts, theory and practices of the logistics function in today's business enterprises. The module provides an integrated supply chain framework for the study of logistics, serves to expand the treatment of supply chain management by placing it firmly in the context of integrated business strategy, and highlights the increasing importance of logistics in the supply chain supporting a global economy. At the end of the module, students will acquire a comprehensive knowledge of business skills which can be adopted and/or adapted to meet the specific needs of the company.

Materials Management and Physical Distribution

The module provides sufficient information that enables students to:

- enhance their awareness of key concepts in supply chains and logistics
- study management of the movement of materials and services in terms of planning, costs and customer service and the potential for optimising physical systems
- view supply chains and logistics both at the individual organisation level and from the perspective of inter-organisational relationships among participating organisations in an organisation's wider supply network
- consider the relationship between organisations and the role of associated information mechanisms, which may enhance the potential collaboration between parties in a supply network
- show why and how organisations may integrate their logistics processes and systems with those of other parties, both 'upstream' and 'downstream' in a supply chain

Operations Management

The module is designed to introduce the key elements of operations management. It begins by explaining the term 'operations management' and discussing the operations function and strategy. The five key operations management functions comprising product, process, quality, inventory and capacity planning are discussed in detail to provide students an overview of the activities performed by a typical operations manager. The module introduces well known and useful techniques to improve operational functions. At the end of the module, students will gain a good understanding of operations management principles, concepts and best practices. More importantly, students will learn how to adopt some of the principles to promote organizational success.

Academic Reading and Writing 2

There has be a need to continually improve the English quality of our students and provide them constant support at their diploma levels. This course is designed for students who are enrolled in diploma programs to work intensively on their reading and writing skills.

This is a more intensive program that will develop better reading and writing skills as they are the keys to understanding their subjects and effectively engage in class activities. These classes will address a variety of key demands of writing and reading assignments on their courses, focusing on both academic and language skills and to ability to write.

The course is taught in an in a blended learning environment where students will have the opportunity to experiment and learn both in online and face-to-face lessons.

Diploma in Network Defence and Forensic Countermeasures

At a Glance

Awarding Institution	:	PSB Academy
Modes of Study	:	Full-time (International & Singapore-based Students) Part-time (Singapore-based Students)
Duration	:	12 months
Commencement & End Date	:	NIL

Overview

This course offers a unique hybrid curriculum consisting of specialised cybersecurity modules developed by EC-Council paired with essential Infocomm Technology modules. Allowing students to have the basics of Cyber Security, and get a specialization in Network Defense and Digital Forensics.

Successful completion of the EC-Council modules allows students to be awarded up to FOUR separate professional-recognised certifications awarded by EC-Council in addition to the Diploma of Network Defense and Forensic Countermeasures.

Professional Certification

Earn both the optional EC-Council Certified Security Specialist and Certified Network Defender and an academic diploma. Part-time students may earn additional EC-Council certifications in Certified Ethical Hacker and Computer Hacking Forensic Investigator.

EC-Council

EC-Council is the world's largest cyber security technical certification body. They have trained and certified over 200,000 information security professionals globally. Their certification programs are recognised worldwide and have received endorsements from various government agencies including the US Federal Government.

PSB Academy is proud to be an EC-Council Academia Partner (EC|A) offering EC-Council Academia Programmes in Singapore. We are also proud to be awarded the EC-Council Partner of The Year 2023 in APAC for excellence in cybersecurity training and education.

Industry / Professional Recognition

Enjoy opportunities for career mentoring, engagement with industry veterans and complimentary access to professional events with Singapore Computer Society (SCS) and The Institution of Engineering and Technology (IET) student chapter memberships.

Potential Career Opportunities

- Cyber Security Specialist
- Digital Forensic Practitioner
- Penetration Tester
- Network Security Engineer

Progression Pathway

Upon completion of this Diploma in Network Defence and Forensic Countermeasures course, subject to university's approval, graduates may advance to:

Coventry University
- Bachelor of Science with Honours in Cyber Security
- Bachelor of Science with Honours in Computing Science

Massey University
- Bachelor of Information Sciences with a double major in Computer Science and Information Technology

The University of Newcastle, Australia
- Bachelor of Information Technology

University of Hertfordshire
- Bachelor of Science (Honours) Data Science

Admission Criteria

Local Qualifications

- 2 GCE 'A' levels; OR
- PSB Academy Certificate in InfoComm Technology; OR
- Candidates with other qualifications will be considered as case-by-case basis; OR
- Mature candidates (≥30 years old with 8 years work experience)

Minimum Age Requirement: 16 years old

English Language Requirement

- GCE 'O' level English (grade 1 to 7); OR
- IELTS score of 5.5; OR
- PSB Academy's Certificate in English Proficiency programme; OR
- PSB Academy English Proficiency Test; OR
- An equivalent English language qualification

International Qualifications: https://www.psb-academy.edu.sg/intl-adm/

Course Fees*

	Singapore-based Students	International Students
Course Fees		
Course Fee	NIL	NIL
Other Mandatory Fees		
Application Fee	NIL	NIL

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

*GST Inclusive.

Modules

Core Modules

- Introduction to Computer and Operating Systems
- Data Communication and Networking
- Database Design and Modelling
- Introduction to Programming
- Security Specialist*
- Network Defense*

Elective Modules

Full-Time Elective Modules:

- Information Systems and the Organisations
- Discrete Mathematics

Part-Time Elective Modules:

- Ethical Hacking and Counter Measures*
- Computer Hacking Forensic Investigator*

*Student must achieve an overall mark of at least 50% in order to obtain a pass grade in the module to satisfy PSB Academy Diploma requirement and an overall mark of at least 70% in order to obtain the EC-Council Certification:

Mode of Assessment

Assessment for this programme includes assignments, projects, online quizzes, and written examinations.

External Exams

- EC-Council *Certified Security Specialist (ECSS)* certification exam for *Security Specialist* module
- EC-Council *Certified Network Defender (CND)* certification exam for *Network Defense* module
- EC-Council *Certified Ethical Hacker (CEH)* certification exam for *Ethical Hacking and Counter Measures* module
- EC-Council *Certified Hacking Forensics Investigator (CHFI)* certification exam for *Computer Hacking Forensics Investigator* module

Graduation Requirements

For graduation requirements, please refer here.

Annex | Module Outlines

Introduction to Computer and Operating Systems

This module teaches participants the fundamentals of computers and Operating Systems (OS). It begins with an introduction to the basic architecture of a computer and its peripherals. It then covers the functions and purpose of an operating system, including memory management, file storage systems and device management.

Data Communication and Networking

This module provides an introduction to computer networks, and the basic essential concepts of data communications. Participants are taught the theoretical and practical aspects of data communications and networking. Issues such as the impact of data communication and networking on overall systems design are covered. Subjects include data communication hardware, software, protocols, OSI model, computer networks, data communication services and standards, cellular wireless networks, wireless LANs, network security, and Interworking.

Database Design and Modelling

Database design modelling is learning to build the logical structure of a database, including the relationships and constraints that determine how data can be stored and accessed. Individual database models are designed based on the rules and concepts of a broader data model that the designers have created. This unit introduces the methods, techniques, tools, and standards for designing database models.

Introduction to Programming

The module introduces the techniques and concepts of programming language. Participants are taught problem-solving skills using structured and object-oriented approached.

Security Specialist

The Security Specialist module allows students to enhance their skills in information security, network security, and computer forensics. Information security is where information, information processing, and communications are protected against the confidentiality, integrity, and availability of information and information processing. In communications, information security also covers trustworthy authentication of messages that covers identification of verifying and recording the approval and authorisation of information, non-alteration of data, and the non-repudiation of communication or stored data.

Network Defense

Organisational focus on cyber defense is of maximum importance as cyber breaches create significant impact on a company's finances and reputation. Organisations require trained network engineers who are focused on protecting, detecting, and responding to the threats on their networks as part of their defence mechanism. This module trains participants to immerse themselves in network environments and build familiarity with network components, traffic, performance and utilisation, network topology, system location and security policies. They ensure that organisations can defend themselves from vicious cyber attacks and play a significant role in becoming the first line of defence for any organisation.

Information Systems and the Organisations

As business and the IS discipline have changed, so too has the role of the IS professional. Once considered a technical specialist, today the IS professional operates as an internal consultant to all functional areas of the organisation, being knowledgeable about their needs and competent in bringing the power of information systems to bear throughout the organisation. The IS professional views issues through a global perspective that encompasses the entire organisation and the broader industry and business environment in which it operates, including the entire interconnected network of suppliers, customers, competitors, regulatory agencies, and other entities – no matter where they are located.

A comprehensive overview of the enterprise architecture, Internet and web applications, systems design associated with implementing, process integration inherent in and impact these systems have on key business processes. At the end of the module, students should be able to understand the theoretical and practical issues using XHTML related to the acquisition, implementation and application of Enterprise Information Systems within organizations.

The IS professional assumes the critical responsibility of determining the organisation's approach to both overall cost and quality performance and therefore plays an important role in the continued survival of the organisation. This new duality in the role of the IS employee – a professional who exercises a specialist's skills with a generalist's perspective.

Discrete Mathematics

This module provides the mathematical foundations for the study of computer science. The module aims is to develop students mathematical reasoning ability, algorithmic thinking ability and mathematical maturity; recognised as important skills for students embarking on computer studies.

Ethical Hacking & Countermeasures

An ethical hacker is a skilled professional who understands and knows how to look for weaknesses and vulnerabilities in target systems and uses the same knowledge and tools as a malicious hacker, but in a lawful and legitimate manner to assess the security postures of a target system(s). This module aims to establish and govern minimum standards for credentialing professional information security specialists in ethical hacking measures, reinforce ethical hacking as a unique and self-regulating professions and certifies participates in the specific network security discipline of Ethical Hacking from a vendor-neutral perspective.

Computer Hacking Forensics Investigator

Digital forensic practices stem from forensic science – the science of collecting and examining evidence or materials. Digital or computer forensics focuses on the digital domain, including computer forensics, network forensics, and mobile forensics. Computer forensics practices are used to investigate attacks, system anomalies, or help system administrators detect problems and validating system information for irregular behaviour. This module allows participants to acquire a firm grasp on the principles of digital forensics by providing a strong baseline knowledge of key concepts and practices in the digital forensic domains relevant to today's organisations.

Diploma in Visual Communication

At a Glance

Awarding Institution	:	PSB Academy
Modes of Study	:	Full-Time (International & Singapore-based Students)
Duration	:	12 months
Commencement & End Date	:	NIL

Overview

The Diploma in Visual Communication is a twelve months course focusing on developing skills needed in graphic design. It is an extensive course that is driven by strong ideation processes and challenge students to provide practical design solutions in the areas of print, packaging, branding, publication and advertising.

Admission Criteria

Minimum Age: 16 Years Old

Local Qualifications

- IGCSE or GCE 'O' level or equivalent; OR
- Candidates with other qualifications will be considered as case-by-case basis; OR
- Mature candidates (≥30 years old with 8 years work experience)

English Language Requirement

- GCE 'O' level English (grade 1 to 6) or equivalent (as a first language); OR
- IELTS score of 5.5; OR
- PSB Academy's Certificate in English Proficiency programme Level 5; or
- An equivalent English language qualification

International Qualifications

- https://www.psb-academy.edu.sg/intl-adm/

Course Fees*

	Singapore-based Students	International Students
Course Fees		
Course Fee	NIL	NIL
Other Mandatory Fees		
Application Fee	NIL	NIL

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

*GST Inclusive.

Modules

- Culture & Visual Communication
- Design Fundamentals
- Mix Media Art
- Digital Illustration for Designers
- Design Thinking
- Digital Image Editing
- Photography Art Direction
- Typography Design 1
- Layout Principles
- Typography Design 2
- Identity Design
- Printmaking

Mode of Assessment

Assessment of this programme includes assignments and projects.

Graduation Requirements

For graduation requirements, please refer here.

Annex | Module Outlines

Culture & Visual Communication

Culture & Visual Communication is an introduction unit that will discuss and examine the purpose of graphic design in society and influences of history. Students will also learn the various art movements that influenced contemporary design over the centuries. They will examine major events, trends, new technologies and globalisation that impact design. This unit will also discuss the role of graphic design in visual communication, its vocabulary and ethical considerations in design practice, communication techniques and challenges faced by designers in an ever-evolving industry.

Design Fundamentals

For students trying to communicate in a new language, one has to first gain a complete understanding of its fundamentals; the ABC's of that language-definitions, functions, and usage. This unit provides graphic design students with an in-depth understanding of the fundamental elements and principles of their language—graphic design--what they are, why they are important, and how to use them effectively. Students will study different graphic elements - lines, form, texture, etc. They learn to see, feel and interpret, thus developing necessary skills in the field of Visual Communication. To understand visual communications, a student has to first understand by “seeing.” To develop this discipline or visual sense is similar to learning a new language with its own unique alphabet, lexicon (vocabulary), and syntax (sentence structure).

Mix Media Art

This unit will expose students to various drawing and rendering techniques using mixed media. Students will learn colour theory and experiment with various media to communicate ideas and /or messages effectively. They will hone their observation skills through a series of activities and projects.

Digital Illustration for Designers

This unit will introduce the techniques for creating digital illustrations through the application of two-dimensional vector images. Using Adobe Illustrator and Adobe Photoshop as design tools, students will improve their illustration technique and produce complex digital images, exploring technical and aesthetical aspects of the vector-based illustration processes most commonly used in the visual communication industry and applied it on projects such as event posters, magazines covers, film posters, album covers, packaging, advertising, editorials and digital painting etc.

Design Thinking

This unit will introduce students to the creative process and techniques involved in Design Thinking. Students will also be exposed to issues relating to copyright and intellectual property. They will also learn to interpret and write design briefs and be taught design principles in context.

Digital Image Editing

This unit is about developing and providing students with skills to correct, enhance and distort digital images, create image composites and prepare images for print and web. Students will explore image-editing software such as Adobe Photoshop CC and effective techniques to achieve industry level image quality print.

Photography Art Direction

In the last decade, interest in photography has exploded. Among the most compelling and popular art forms, photography is now recognized as central to the development of modern and contemporary art. Besides learning the basic operation of a camera, students will be challenged to find their own interpretation and approach to visualize themes with images-from documentary style and pictorial to archives, narratives, and the conceptual uses of the medium.

Typography Design 1

This unit will provide students with fundamental knowledge of typography, students will learn the basics of identifying, choosing, and using typefaces and immediately put that knowledge to work through a collection of assignments designed to deepen and expand typographic skills. Students will also learn to create type-based logos, crafting personal emblems, choosing and using the right fonts for layouts and modify fonts to meet certain design's specific needs.

Layout Principles

This unit will help student understands basic principles of page layout and grid system applied by graphic designers. It's a necessity to all designers to acquire structure organization in layout and define the structural force behind every design. Students will use grid as organizational tools to define active space of a page and make thoughtful decisions about composition and order. Students will also use grid system to maintain control, create visual connections and unify their design as one complete project.

Typography Design 2

This unit will provide students with the practical knowledge of typography for professionals. As a graphic design student, it is essential to be able to select the appropriate type for the job, set type like a pro, avoid common mistakes and most importantly how to design a typeface to fulfil a specific project brief.

Identity Design

This unit will Introduce students to brand identity and using design to create a connection between the brand and the audience. Lessons will lead students to use design to construct an emotional engagement with the audience and to take the lead of the branding by applying design thinking. Since identity or brand design is not just about designing a logo or corporate identity, students will also explore the emotional connection between a brand and its audience by looking at case studies and best practice in the real world.

Printmaking

In this unit students will have a chance to explore, practice and combine printmaking skills into their digital platform graphic design knowledge. Printmaking is vital in graphic design since it will broaden student's interaction and understanding between visual arts, the craft of printmaking with conventional and digital technical skills, resulting a dynamic body of work for their portfolio. The unit will guide students in the conversion of their handcrafted work onto a digital platform into actual design outcomes, thus providing a clear link between the conventional and digital technology.

Advanced Diploma in Visual Communication

At a Glance

Awarding Institution	:	PSB Academy
Modes of Study	:	Full-Time (International & Singapore-based Students)
Duration	:	15 months
Commencement & End Date	:	NIL

Overview

The Advanced Diploma in Visual Communication is a fifteen-month course that aims to:

- Equip students with core graphic design skills, design principles and drawing fundamentals, creative thinking and learn to handle image making technologies before getting involved in professional projects like high profile live projects.
- Encourage students to develop personal visual skills and personal vision through exciting and challenging practical projects during the course of the programme.
- Encourage students to build a professional portfolio and to enter local and international design competitions while being under the tutelage of the industry's most celebrated and prestigious creative leaders.
- Introduce students to the creative and cultural industries, emphasising professional constraints and expectations that includes live projects, pitching and work-related experiences to develop design production knowledge.

Admission Criteria

Minimum Age: 16 Years Old

Local Qualifications

- 2 GCE 'A' Levels; OR
- PSB Academy Diploma in Visual Communication; OR
- Candidates with other qualifications will be considered as case-by-case basis; OR
- Mature candidates (≥30 years old with 8 years work experience)

English Language Requirement

- GCE 'O' level English (grade 1 to 6) or equivalent (as a first language); OR
- IELTS score of 5.5; OR
- PSB Academy's Certificate in English Proficiency programme Level 5; or
- An equivalent English language qualification

International Qualifications

- https://www.psb-academy.edu.sg/intl-adm/

Course Fees*

	Singapore-based Students	**International Students**
Course Fees		
Course Fee	NIL	NIL
Other Mandatory Fees		
Application Fee	NIL	NIL

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

*GST Inclusive.

Modules

- Academic Writing
- Advance Layout Design
- Creative Advertising Design
- Creative Design Portfolio
- Industry Practice
- Major Project
- Motion Graphic
- Packaging Design
- Publication Design
- Web & UI/UX Design

Mode of Assessment

Assessment of this programme includes assignments and projects.

Graduation Requirements

For graduation requirements, please refer here.

Annex | Module Outlines

Academic Writing
This unit covers key aspects of research and communication studies in academic contexts relevant to students of design. Students learn to locate, understand and critically evaluate information from books, journals, the Internet and primary sources in order to do effective research. Using these sources of information, students then produce an extended piece of analytical writing and give oral presentations to their peers. Skills in doing primary research (i.e. conducting focus groups and surveys), accessing and evaluating information, paraphrasing, using established referencing systems, applying the principles of effective communication and the professional presentation of documents are all covered during the module.

Advance Layout Design
This module will enable students to further their skill in layout, conceptualization and production techniques – from prepress planning to final finishing of publication. Opportunities will be given to create more innovative and sophisticated portfolio pieces. Students will have to successfully complete practical exercises and an integrated project in order to complete the module.

Creative Advertising Design
This module serves to introduce students to Advertising Design from its origins to its development as modern marketing communication tool. Students will also explore the possibility of creating their own advertising campaign using various outdoor media platform available. Students will utilize the creative process as used by actual professional Graphic Designers/Art Directors in a replicated professional working environment.

Creative Design Portfolio
This module aims to assist the student in developing a professional portfolio and learning how to present the work that can best exhibit the strength of the students' creation. Evaluation of current work and assessment of strengths and weaknesses of such will determine the specific actions, revisions or generation of new work which need to be undertaken as part of this module. High standards of presentation will be expected as well as objective selection of work for meeting the students' specific career expectations. This will include preparation of resumes, cover letters, self-promotional direct mails, emails, methods in targeting and researching for students' internship.

Industry Practice
This module exposes students to the professional environment through industry opportunities in graphic design studios, advertising agencies, and other approved organizations. Students will be working under the guidance of art directors, creative directors, senior graphic designers or marketing communication managers and performing creative work that is educational and meaningful for their short-term academic goals as well as their long-range career preparation. Students will have to successfully complete a minimum of 3 months placement period/final year project and create an internship report in order to complete the module.

Major Project
This unit aims to provide students with the opportunity to integrate the lessons taught in this course by producing a set of designs for an integrated advertising/ design campaign. Students will be required to execute a creative cross-disciplinary design campaign, which could include various forms or promotion. After concise comprehension of how to write a strategic design brief students will investigate, their possible ideas and concepts by initial sketches, once this is done students will then finalize on a specific concept or idea and think up of the possible outputs or mediums that they would like to promote and bring across their message for their campaign.

Motion Graphic

With the rapid increase in broadcast channels on cable TV and digital cable around the world, the demand for motion graphic designers has risen steadily and professionals are needed to fill this demand. This unit, Motion Graphic Design focuses on generating specific skills involved in the creation of animated titles, program trailers, cinematic sequences, and TV commercials. Students will be introduced to colour correction for television, synchronised moving type elements, special effects, and industry formats and resolutions.

Packaging Design

Packaging designers need to develop marketable ideas and translate design concepts into three-dimensional packages of all shapes and sizes. Packaging Design will introduce students to materials and processes related to forms for packaging. Through understanding the characteristics of various packing materials and researching and analyzing the qualities of the product and the consumer needs and other factors, students will produce various solutions that can attract and sell. An important part of the class will revolve around individual student critiques and detailed comments and recommendations for developing the required project materials. Students will develop extensive projects and elaborate several different design solutions for them, including detailed thumbnail drawings, marker renderings, structures, graphic design and final packaging.

Publication Design

This module investigates design communication for professional publications and magazine design, with an emphasis placed on developing innovative modern concepts for defined target audiences. Students will also learn how to assemble and work as a full-functioning publication team. Students will learn to define style guides, create mastheads, generate content and maintain consistency throughout a major publication project within a group setting. Students will continue to build upon the principles they learned in page layout, advanced layout & production and graphic production by using dynamic grid systems, professional binding techniques, choosing appropriate paper stocks and working with special printing effects and finishes. Students will also be responsible for generating a working timeline and meeting all of the goals within that timeline just as they are defined as well as staying within a budget.

Web & UI/UX Design

In this unit students will be provided with the necessary knowledge and skills through practical exercises, lectures, demonstrations and examples to enable them to create unique web solutions and user interfaces by analysing different project requirements and needs. Students will also gain practical skills to enable them to create web pages by designing and programming with hypertext markup languages and graphical web building tools. This unit will also expose students to good UI/UX practice and apply it on various platform. Students will have to successfully complete practical exercises and commence a final integrated practical project.

Postgraduate Certificate in Supply Chain Management (E-Learning)

At a Glance

Awarding Institution	:	PSB Academy
Modes of Study	:	Online (International & Singapore-based Students)
Duration	:	6 months
Commencement & End Date	:	NIL

Overview

This Postgraduate Certificate in Supply Chain Management (E-Learning) is designed to focus on the critical aspect of high-level strategy and concepts. Students are guided through all the key drivers of the supply chain, learning how good supply chain management offers a competitive advantage and how poor supply chain management can damage an organisation's performance. In addition, this Postgraduate Certificate covers the continuous changes in the field of purchasing and supply, as well as provides a comprehensive review of the future of procurement.

This self-paced online certificate offers a flexible learning experience. Study at your own pace, anytime and anywhere, offering a perfect balance between work, life, and educational growth.

edutrust SINGAPORE
PSB Academy
Reg. No. 200704825E
20/05/2022 - 19/05/2026
Cert No: EDU-2-2005
Validity: 14/05/2022 - 13/05/2026

Admission Criteria

Minimum Age: 21 Years Old

Local Qualifications

- Bachelor's degree or equivalent qualification from a recognised institution

English Language Requirement

- GCE 'O' level English (grade 1 to 6); OR
- IELTS score of 5.5; OR
- PSB Academy's Certificate in English Proficiency programme; OR
- PSB Academy English Proficiency Test; OR
- An equivalent English language qualification

International Qualifications

- https://www.psb-academy.edu.sg/intl-adm/

Course Fees*

	Singapore-based Students	**International Students**
Course Fees		
Course Fee	NIL	NIL
Other Mandatory Fees	NIL	NIL
Application Fee		

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

*GST Inclusive.

edutrust SINGAPORE
PSB Academy
Reg. No. 200704825E
20/05/2022 - 19/05/2026
Cert No: EDU-2-2005
Validity: 14/05/2022 - 13/05/2026

Modules

- Supply Chain Management Strategy, Planning and Operation
- A Framework for Supply Chains
- Procurement Principles and Management in the Digital Age

The delivery of modules is subject to change and may not follow the sequence as shown above.

Mode of Assessment

Assessment of this programme includes online assignments and end-of-module quizzes.

Graduation Requirements

For graduation requirements, please refer here.

PSB Academy
Reg. No. 200704825E
20/05/2022 - 19/05/2026
Cert No: EDU-2-2005
Validity: 14/05/2022 - 13/05/2026

Annex | Module Outlines

Supply Chain Management Strategy, Planning, and Operation

This module introduces students to the core principles and strategies of supply chain management, focusing on planning, operations, and logistical frameworks within enterprises. Students will gain an understanding of the interconnected logistics systems, from the foundational business processes within an organisation to complex networks between external trade partners, and learn how to navigate the dynamic nature of logistics service providers, transportation networks, and external business relationships.

A Framework for Supply Chains

This module provides a strategic approach to understanding supply chain structures, offering insights into the essential elements that drive effective supply chain management. Students will explore strategic fit, key drivers, and metrics that influence supply chain success. The module delves into network design, including omni-channel distribution and global supply chain considerations, with an emphasis on coordination and the pivotal role of transportation. Sustainable practices are also highlighted, enabling students to assess and implement eco-friendly measures in the supply chain.

Procurement Principles and Management in the Digital Age

This module equips students with essential skills to manage procurement in today's increasingly digital landscape. The course covers foundational procurement principles, including strategic sourcing, quality management, and inventory control, all of which are now impacted by digital transformation. Students will explore how Industry 4.0 technologies, such as e-procurement platforms, data analytics, and automation are reshaping procurement processes, driving efficiencies, and compressing lead times. The module prepares students to leverage digital tools to gain a competitive edge in supply chain management.

Postgraduate Diploma in e-Supply Chain Management (E-Learning)

At a Glance

Awarding Institution	:	PSB Academy
Modes of Study	:	Online (International & Singapore-based Students)
Duration	:	9 months
Commencement & End Date	:	NIL

Overview

This Postgraduate Diploma in e-Supply Chain Management (E-Learning) is designed to focus on the increasing reliance on e-commerce and the globalisation of supply chains. With the rise of online shopping and the expansion of international trade, there is a growing need for professionals who can effectively manage e-supply chains. In addition, this programme also necessitates the ongoing digital transformation of supply chain operations. Automation, data analytics, artificial intelligence, and blockchain are becoming integral to supply chain management. This programme will prepare students to navigate and harness these technologies.

This self-paced online diploma offers a flexible learning experience. Study at your own pace, anytime and anywhere, offering a perfect balance between work, life, and educational growth.

Industry Partnership

The curriculum development of three modules, IT & E-Commerce, Sustainable Supply Chain, and Urban Logistics & Transportation is supported by The Chartered Institute of Logistics and Transport (CILT). Students who joins CILT as a student member and complete the above mentioned modules will 3 certificates issued by CILT upon graduation.

Admission Criteria

Minimum Age: 21 Years Old

Local Qualifications

- Bachelor's degree or equivalent qualification from a recognised institution; OR
- Postgraduate Certificate in Supply Chain Management (E-Learning) from PSB Academy

English Language Requirement

- GCE 'O' level English (grade 1 to 6); OR
- IELTS score of 5.5; OR
- PSB Academy's Certificate in English Proficiency programme; OR
- PSB Academy English Proficiency Test; OR
- An equivalent English language qualification

International Qualifications

- https://www.psb-academy.edu.sg/intl-adm/

Course Fees*

	Singapore-based Students	**International Students**
Course Fees		
Course Fee	NIL	NIL
Other Mandatory Fees		
Application Fee	NIL	NIL

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

*GST Inclusive.

Modules

- Supply Chain Management Strategy, Planning and Operation
- A Framework for Supply Chains
- Procurement Principles and Management in the Digital Age
- IT & E-Commerce*
- Urban Logistics & Transportation*
- Sustainable Supply Chain*

The delivery of modules is subject to change and may not follow the sequence as shown above.

* Upon successful completion of these modules, student will receive 3 separate certificates issued by CILT for each module, under the condition that they have joined CILT as a student member.

Mode of Assessment

Assessment of this programme includes online assignments and end-of-module quizzes.

Graduation Requirements

For graduation requirements, please refer here.

Annex | Module Outlines

Supply Chain Management Strategy, Planning, and Operation

This module introduces students to the core principles and strategies of supply chain management, focusing on planning, operations, and logistical frameworks within enterprises. Students will gain an understanding of the interconnected logistics systems, from the foundational business processes within an organisation to complex networks between external trade partners, and learn how to navigate the dynamic nature of logistics service providers, transportation networks, and external business relationships.

A Framework for Supply Chains

This module provides a strategic approach to understanding supply chain structures, offering insights into the essential elements that drive effective supply chain management. Students will explore strategic fit, key drivers, and metrics that influence supply chain success. The module delves into network design, including omni-channel distribution and global supply chain considerations, with an emphasis on coordination and the pivotal role of transportation. Sustainable practices are also highlighted, enabling students to assess and implement eco-friendly measures in the supply chain.

Procurement Principles and Management in the Digital Age

This module equips students with essential skills to manage procurement in today's increasingly digital landscape. The course covers foundational procurement principles, including strategic sourcing, quality management, and inventory control, all of which are now impacted by digital transformation. Students will explore how Industry 4.0 technologies, such as e-procurement platforms, data analytics, and automation are reshaping procurement processes, driving efficiencies, and compressing lead times. The module prepares students to leverage digital tools to gain a competitive edge in supply chain management.

IT & E-Commerce

This module explores the significant impact of information technology and e-commerce on logistics and supply chain management. Students will explore how digital supply chains are defined and classified within the framework of System Centre Operations Manager (SCOM) excellence, using the Supply Chain Operations Reference (SCOR) model to analyse digital supply chain processes. Topics include e-logistics, risk management in digital networks, and port-centric ICT systems that streamline communication and data exchange across supply chains. The module also covers cutting-edge technologies such as RFID and single window systems, with a focus on how these innovations support both qualitative and quantitative improvements in decision-making within digital SCOM frameworks. Students will gain insight into future technology trends and their potential impact on supply chain management and operations excellence.

Urban Logistics & Transportation

Focusing on the unique challenges and opportunities within urban logistics, this module addresses the evolving transportation landscape in urban centres. Students will learn about urban logistics history, policies, and global perspectives, using Singapore's infrastructure and logistics policies as a case study. Topics include freight management, free trade agreements, last-mile delivery, and future trends in urban transportation.

Sustainable Supply Chain

This module explores the intersection of supply chain management with sustainability principles. Students will examine the relationships between economic growth, societal impacts, and environmental considerations, gaining insight into sustainable development theory and its practical applications within business. The module covers innovations in waste management and cleaner production, sustainability reporting standards, and the roles of government and NGOs in promoting sustainable supply chain practices. Additionally, the module highlights the importance of consumer behaviour in driving sustainable practices across supply chains.

Bachelor of Engineering with Honours in Electrical and Electronic Engineering

At a Glance

Awarding Institution	:	Coventry University
Modes of Study	:	Full-time (International & Singapore-based Students) Part-time (Singapore-based Students)
Duration	:	16-36 months
Commencement & End Date	:	NIL

Overview

Electrical and electronics engineers perform a critical role in today's modern world, advancing the technology which drives much of the activity in our everyday lives – from heat, light and power to telecommunications and transport. The Bachelor Of Engineering With Honours In Electrical And Electronic Engineering programme gives students the opportunity to gain knowledge, understanding and skills necessary for the generation, distribution, application and control of electrical energy used by industries as diverse as aerospace and automotive, chemical and construction.

Industry Immersion

Enjoy networking opportunities and access to professional events with The Institution of Engineers, Singapore (IES) and The Institution of Engineering and Technology (IET) student chapter memberships.

Admission Criteria

Local Qualifications

Entry via Year 1

- 3 GCE A Levels subjects including at least one subject indicating preparedness to the course such as Mathematics, Computing or Science, or similar; OR
- Equivalent qualification to the above which demonstrate preparedness for study.

Entry via Year 2

- PSB Academy Diploma in Electrical Engineering Technology; OR
- Equivalent Diploma in Engineering (in relevant disciplines) from a local polytechnic, PSB Academy or other Private Education Institution.

Entry via Year 3

- Candidates may apply with a Diploma in Electrical and Electronic Engineering from a local polytechnic. Applicants will be assessed on a case-by-case basis.

Non-standard entry applications involving non-standard qualifications, mature candidates, or for direct entry to later stages of the programme from candidates with experience are welcome and will be considered on their merit in conjunction with the Coventry University Link Tutor.

Minimum Age: 18

English Language Requirement

Entry via Year 1 and 2

- English Language at GCE 'O' levels at grade C or above; OR
- IELTS of 6.0 or equivalent

Entry via Year 3

- IELTS of 6.5 or equivalent

Work Experience (If applicable)

- 30 years old and above with 8 years of working experience

International Qualifications: https://www.psb-academy.edu.sg/intl-adm/

Course Fees

Full-time

Course Fees	**Singapore-based Students**	**International Students**
Total Course Fee (Academic Year 1 Entry)	NIL	NIL
Total Course Fee (Academic Year 2 Entry)	NIL	NIL
Other Mandatory Fees		
Application Fee (New Students)	NIL	NIL
Student Development and Administration Fee (New Students)	NIL	NIL

Part-time

Course Fees	**Singapore-based Students**
Total Course Fee (Academic Year 1 Entry)	NIL
Total Course Fee (Academic Year 2 Entry)	NIL
Other Mandatory Fees	
Application Fee (New Students)	NIL

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

All fees are subject to annual revision.

Modules

- Professional Skills
- Analogue and Digital Electronics 1
- Engineering Mathematics 1
- Electrical Engineering 1
- Systems Project
- Introduction to Computer Engineering
- Academic Writing for Sciences
- Embedded Microprocessors Group Project
- Analogue and Digital Electronics 2
- Engineering Mathematics 2
- Control and Instrumentation 1
- Electrical Engineering 2
- Effective Communication Skills 2
- Advanced Electronics
- Power Systems
- Individual Project Preparation
- Individual Project Realisation
- Control and Instrumentation 2
- Advanced Digital Systems
- Academic Writing 3

Mode of Assessment

Assessment for this programme may include assignments, tests, projects and final examinations.

Graduation Requirements

For graduation requirements, please refer here.

Annex | Module Outlines

Effective Communication Skills 2

The aim of this module is to build on the student's experience of communication, allowing them to understand the basis for inter-personal communication, whilst also requiring them to develop and apply appropriate communication strategies. Topics include barriers to effective communication, assertiveness skills and techniques, an introduction to emotional intelligence, neuro-linguistic programming, verbal and non-verbal communication, personality and culture. Students will be given the opportunity to practice these skills in a safe environment and reflect on current performance and future development needs. Students who undertake this module will develop skills to be in a stronger position to secure employment. Cross-sector, employers have identified effective communication as an essential skill they look for when recruiting graduates.

Engineering Mathematics 2

This module is primarily for students on MEng/BEng courses designed for CEng accreditation and builds upon knowledge and expertise gained in studying 101MS. As in year one, the module emphasises the fundamental concepts that an engineer needs to understand in order to formulate and analyse practical problems. In addition to taught material, students will be given formative assignments and directed reading to extend their knowledge and to enhance their appreciation of the relevance of the material covered. Modern mathematical software will be used to enhance understanding and as an aid to the application of mathematical techniques in engineering problems.

Electrical Engineering 2

The module introduces students to the basic concepts and principles used in Electrical Engineering. The emphasis is on steady state DC circuit analysis and AC circuit analysis and its use with appropriate models to investigate the characteristics of common electrical systems. Learning is enhanced through the use of computer circuit simulation.

Analogue and Digital Electronics 2

This module aims to provide students with the capability to produce useful practical designs in the technology area of analogue and digital electronics. It adopts an activity led learning style requiring students to conceive and simulate their own designs. Technical focus is on the performance scharacteristics of voltage mode operational amplifiers along with a range of typical applications. Synchronous, sequential digital logic is also included employing a hardware description language for simulation and synthesis.

Embedded Microprocessors Group Project

The module allows the student to apply appropriate theoretical and practical project management methods to design, develop, manufacture, construct, commission, operate, maintain, decommission and re-cycle engineering processes, systems, services and products.

Advanced Electronics

This module aims to provide the knowledge and skills necessary to work in specialised areas of electronics involving radio frequency and power control functions. It involves a significant element of practical work based on designing, simulating and testing prototype circuits. Radio frequency topics include amplifiers, filters and frequency generators. With power electronics the emphasis is on switching techniques used in different types of converter, including amplifiers, and the application of these converters in the management of energy.

Individual Project Preparation

The aim of this module is to provide preparation for a student to undertake a substantial project. Key parts in this module include; project selection, project allocation, project specification, cognizance of standards relating to project, logbook keeping, supervisor meetings, project management, ethics application, literature review, preliminary analysis and design work, and preparation report. Successful completion of the module will require methodical planning, self-management, effective communication and delivery of report.

This is not a taught module – students primary point of contact will be their project supervisor once the project has been finalised.

Individual Project Realisation

The aim of this module is to provide an opportunity to research, design, implement and critically evaluate a functional or simulated system, object or concept and to acquire deeper knowledge of a specialist technical area. To this end, the student will undertake a substantial project which will exercise in-depth technical, problem-solving, creative and other skills required of a professional practitioner including working to appropriate ethical codes of practice.

Advanced Digital Systems

The aim of this module is to enable students to design a digital signal processing solution using two different approaches: hardware-only and programmable digital signal processor. It is an additional aim that the student will experience the use of development tools appropriate to each approach.

Academic Writing 3

This module offers students strategies for conceptualising, planning, drafting, revising and editing longer assignments such as final-year projects and dissertations. Focusing on the Level 3 associated tasks of 'evaluate', 'synthesise', 'argue' and ‘reflect’, this module emphasises the place of these types of discourse and practice in academic communication. This module will be of value to students in all disciplines, and the competences they acquire and develop will contribute to their university personal development and, implicitly, to their future workplace roles that are increasingly writing intensive.

Power Systems

The module provides a study of subjects pertinent to the generation, supply and control of electrical energy. These subjects will typically include energy sources, power supply systems along with analysis power systems and power flow. Processes of market economics are included. Visits to industry or scientific establishments associated with power systems are normally a feature of this module.

Control and Instrumentation 1

Control and Instrumentation is a fundamental discipline in supporting the technological advances and developments which find application in a wide range of areas including process control, aerospace, automotive, robotics, environmental and energy efficient manufacturing industries. The aim is to develop a broad understanding of the principles, techniques and applications associated with control engineering and instrumentation.

Control and Instrumentation 2

Control and Instrumentation provides an important link between contemporary digital based monitoring and control engineering and their usage in the field of engineering and science, particular emphasis is provided to application techniques.

Bachelor of Engineering with Honours in Mechanical Engineering

At a Glance

Awarding Institution	:	Coventry University
Modes of Study	:	Full-time (International & Singapore-based Students) Part-time (Singapore-based Students)
Duration	:	16-36 months
Commencement & End Date	:	NIL

Overview

This Mechanical Engineering Degree provides the basis for many engineering disciplines including automotive engineering, aerospace engineering, marine engineering, medical engineering and many other related sectors. This undergraduate degree provides students with the opportunity to develop essential knowledge and skills in science, commerce, design, manufacturing and management to help prepare them for a career across a broad range of engineering industries upon graduation.

Industry Immersion

Enjoy networking opportunities and access to professional events with The Institution of Engineers, Singapore (IES) and The Institution of Engineering and Technology (IET) student chapter memberships.

Admission Criteria

Local Qualifications

Entry via Year 1

- 3 GCE A Levels subjects which must include Mathematics and a Physical Science or related subject such as Electronics, Design and Technology, ICT, or similar; OR
- Equivalent qualification to the above which demonstrate preparedness for study.

Entry via Year 2

- PSB Academy Diploma in Mechanical Engineering Technology; OR
- Equivalent Diploma in Engineering (in relevant disciplines) from a local polytechnic, PSB Academy or other Private Education Institution.

Entry via Year 3

- Candidates may apply with a Diploma in Mechanical Engineering from a local polytechnic. Applicants will be assessed on a case-by-case basis.

Non-standard entry applications involving non-standard qualifications, mature candidates, or for direct entry to later stages of the programme from candidates with experience are welcome and will be considered on their merit in conjunction with the Coventry University Link Tutor.

Minimum Age: 18

English Language Requirement

Entry via Year 1 and 2

- English Language at GCE 'O' levels at grade C or above; OR
- IELTS of 6.0 or equivalent

Entry via Year 3

- IELTS of 6.5 or equivalent

Work Experience (If applicable)

- 30 years old and above with 8 years of working experience

International Qualifications: https://www.psb-academy.edu.sg/intl-adm/

Course Fees

Full-time

Course Fees	Singapore-based Students	International Students
Total Course Fee (Academic Year 1 Entry)	NIL	NIL
Total Course Fee (Academic Year 2 Entry)	NIL	NIL
Other Mandatory Fees		
Application Fee (New Students)	NIL	NIL
Student Development and Administration Fee (New Students)	NIL	NIL

Part-time

Course Fees	Singapore-based Students
Total Course Fee (Academic Year 1 Entry)	NIL
Total Course Fee (Academic Year 2 Entry)	NIL
Other Mandatory Fees	
Application Fee (New Students)	NIL

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

All fees are subject to annual revision.

Modules

- Engineering Mathematics 1
- Electrical Science
- Mechanical Science
- Academic Writing for Sciences
- Engineering Applications
- Manufacturing Technology and Materials
- Design
- Solid Mechanics and Dynamics
- Thermofluid Mechanics
- Analytical Modelling
- Engineering Management
- Design and Sustainability
- Instrumentation and Control
- Effective Communication Skills 2
- Academic Writing 3
- Individual Project
- Mechanical Product Innovation
- Stress and Dynamic Analysis 1
- Thermodynamics 3
- Fluid Mechanics
- Finite Element Analysis
- Reliability and Durability
- Professional Development and Project Planning

Mode of Assessment

Assessment of this programme may include assignments, tests, projects and final examinations.

Graduation Requirements

For graduation requirements, please refer here.

Annex | Module Outlines

Thermofluid Mechanics

The aim of this module is to build and develop the fundamentals of thermofluids introduced in Year 1 by applying the laws of thermodynamics and fluid mechanics to engineering applications. Underline the fundamentals of one dimensional compressible flow taking into account the area change, heat transfer and friction effects and apply it to nozzle design. Apply the integral from of the governing equations of fluid flow to evaluate the force and moments transferred from solid to fluid flow. Students will be able to identify fluid flow factors affecting the design and performance of turbo-machinery, for example turbines pups and compressors. The first and second laws of thermodynamics are applied to analyse closed and open systems, for example air standard cycles, refrigeration cycles and air-conditioning systems.

Design and Sustainability

The module aims to develop a number of key capabilities required in the mechanical/automotive product innovation process. Specifically, these include: creativity, management, experimental methods, analysis and synthesis, and the application of information technology tools. The aim will be met by tackling product innovation projects, the scale of which will increase through the year.

Instrumentation and Control

The aim of this module is to give the student the necessary knowledge and skills to enable them to select appropriate measurement systems, and to measure and analyse data associated with the performance of mechanical systems. Students will also be introduced to typical engineering control systems and learn the analytical tools to determine their operational characteristics, and design and simulate control systems for specific applications.

Engineering Management

The module aims to develop the student's holistic knowledge and understanding of engineering management. It will enable the student to apply theory, exercise judgement, utilise relevant analytical tools & techniques and work in project teams to solve a range of engineering management problems.

Effective Communication Skills 2

The aim of this module is to build on the student's experience of communication, allowing them to understand the basis for inter-personal communication, and requiring them to develop and apply appropriate communication strategies. Topics include barriers to effective communication, assertiveness skills and techniques, an introduction to neuro-linguistic programming, emotions and emotional intelligence, verbal and non-verbal communication, personality and culture. Students will be given the opportunity to practise these skills in a safe environment and reflect on current performance and future development needs.

Solid Mechanics and Dynamics

This module aims to build upon the basic principles covered in Mechanical Science and to broaden students' knowledge and understanding of rigid body mechanics and stress analysis. It will teach students to correctly apply solid mechanics theory to design problems by means of practical examples. The foundation will be laid for the third level solid mechanics related modules.

Analytical Modelling

This module emphasises the fundamental concepts that an engineer needs to understand in order to formulate and analyse practical problems. In addition to taught material, students will be given assignments and directed reading to extend their knowledge and to enhance their appreciation of the relevance of the material covered. Modern mathematical software will be used to enhance understanding and as an aid to the application of mathematical techniques in engineering problems. Students will be given an introduction into the basic concepts and principles of Finite Element (FE) theory and applications including general advantages, limitations and pitfalls of Finite Elemental Analysis (FEA). The module will also include comparison of results obtained via FEA, solid mechanics and physical experimentation.

Mechanical Product Innovation

The aim of this module is to develop and demonstrate a student's capability in undertaking a complete mechanical product innovation process, working as a member of a team. This will progress from a clear definition of need to concept generation that will include a review of available technologies and a selection of the most appropriate. Issues of detailed embodiment design and of implementation in the marketplace will be covered, as will commercial viability. The ability to work in teams or groups is an important requirement of the sector as many project teams are multi-national, multi-cultural, and multi-discipline.

Professional Development and Project Planning

This module aims to equip engineering students with the generic skills and knowledge to enable them to contribute effectively in their professional careers. It focuses on self-development, employability and their contribution to societal care and the management of commercial engineering activity. It addresses the current issues of business operation, sustainability and the environment, ethical practice, and the relationship between industry and global health and economics. It also aims to provide a foundation on which to build an effective strategy for lifelong learning and continuing professional development (CPD). Students should gain an appreciation of how their chosen specialism fits into the overall context of engineering and the wider social, legal and physical environments.

Fluid Mechanics

The aim of this module is to build and develop the fundamentals of fluid mechanics introduced in levels 1 and 2. Students apply reasonable assumptions and boundary conditions to simplify the differential equations governing the fluid flow in order to have analytical solution to fluid problems. The influence of boundary layer, flow separation and turbulence on the forces acting on a solid body immersed in fluid flow is discussed. The concept and use of computational fluid dynamics (CFD) as a numerical technique to solve more complex fluid flow problems is introduced.

Finite Element Analysis

The aim of this module is to introduce students to the software techniques and the application of Computer Aided Engineering (CAE) in modern engineering design and analysis. Students will use a range of industry standard CAE software systems to model, analyse and simulate mechanical and automotive components. The integration, management and exchange of data between the various software systems are covered in terms of a modern engineering environment.

Reliability & Durability

This final year undergraduate module covers the main areas associated with the design and delivery of vehicle durability and reliability. The emphasis here is on the design aspects of durability for passenger vehicles and associated structures. The module will cover the appropriate theories and analytical techniques involved with durability, strength of materials, fatigue, mechanics and dynamics. An important element will be the process of designing for structural durability and test programmes to support the process. The module will cover current industry practice.

Individual Project

The individual final year project is an important part of any engineering course. A pass is required for the BEng honours award.

The general aims of the project are:

1. To give the student a realistic exercise in the practice of engineering at a professional level.

2. To be a vehicle for integrating the knowledge gained in several subject areas of the Degree course.

3. To allow the student to develop their personal qualities such as initiative, imagination, creativity, communication, organisation, employ IT effectively and solve non-routine problems.

It is difficult to generalise about the scope of projects. Invariably a literature survey will be required to establish recent developments related to the project. The project may then require work on theory, design, design analysis, experimentation, surveys, data analysis, etc., as appropriate to achieving the specific objectives of the project.

Stress and Dynamic Analysis 1

This module aims to build upon the basic principles of stress and dynamic analyses covered at second level. It provides an understanding of the fundamentals of stress analysis and the behaviour of materials under stress, thus enabling students to select and apply concepts creatively in the solution of complex problems of stress analysis in design. The work is focused also on the theoretical fundamentals of vibration analysis and aims at developing the ability to apply these to practical systems.

Thermodynamics 3

The aim of this module is to build and develop the fundamentals of thermodynamics introduced in levels 1 and 2. Consideration will be given to the use of combined heat and power in the context of national energy usage. Single and combined modes of heat transfer including conduction, convection and radiation in a range of engineering applications including heat exchanger performance will be studied.

Academic Writing 3

This module offers students strategies for conceptualising, planning, drafting, revising and editing longer assignments such as final year projects and dissertations. Focusing on the Level 3 associated tasks of 'evaluate', 'synthesise', 'argue' and 'reflect', this module emphasises the place of these types of discourse and practice in academic communication.

Bachelor of Science with Honours in Construction Management

At a Glance

Awarding Institution	:	Coventry University
Modes of Study	:	Full-time (International & Singapore-based Students) Part-time (Singapore-based Students)
Duration	:	24-36 months
Commencement & End Date	:	NIL

Overview

In this Construction Management Degree course you will be introduced to the fundamental topics of Resource Management, Economics, Design, and Production Processes, which are essential to practitioners in all construction professions.

The course content has evolved over several years, in development with Coventry University's current industry partners. We have developed a course structure providing a mix of technical skills and digital/technological knowledge, to equip you for working in this growing sector and help prepare you for future developments in this fast-moving industry.

Covering a broad range of subject areas, the core themes include construction technology, building science and structures, the legal and regulatory framework of building, engineering surveying and construction processes, construction management, contractual procedures and construction finance.

Industry Immersion

Get complimentary one-year student membership with the Institution of Engineers Singapore (IES) Student Chapter. Gain access to exclusive engineering networking events, seminars, and workshops.

Admission Criteria

Local Qualifications

Entry into Year 1

- Three A2 subjects at grades BBB (excluding General Studies and preferably including at least one subject indicating preparedness to the course such as Mathematics, Science), or similar; OR
- A BTEC Extended Diploma in an appropriate subject to include further maths or similar; OR
- Equivalent qualifications to the above which demonstrate preparedness for study.

Entry Into Year 2

Successful completion of a Diploma in Electrical Engineering Technology or Diploma in Mechanical Engineering Technology from PSB Academy, a local polytechnic, or other Private Education Institution. Relevant work experience in the built environment is also required.

Entry into Year 3

Candidates may be eligible to enter with a diploma qualification in a closely related discipline from a local polytechnic or other Private Education Institution. Applications will be assessed on a case-by-case basis by PSB Academy and the Coventry University Link Tutor.

Minimum Age: 16

English Language Requirement

Entry into Year 1 or Year 2

- English Language at GCE 'O' levels at grade C or above; OR
- IELTS grade 6.0 or equivalent.

Entry into Year 3

- IELTS grade 6.5 or equivalent.

Work Experience (If applicable)

- 30 years old and above with 8 years of working experience

International Qualifications: https://www.psb-academy.edu.sg/intl-adm/

Course Fees

Full-time

Course Fees	**Singapore-based Students**	**International Students**
Total Course Fee (Academic Year 1 Entry)	NIL	NIL
Total Course Fee (Academic Year 2 Entry)	NIL	NIL
Total Course Fee (Academic Year 3 Entry)	NIL	NIL
Other Mandatory Fees		
Application Fee (New Students)	NIL	NIL
Student Development and Administration Fee (New Students)	NIL	NIL

Part-time

Course Fees	**Singapore-based Students**
Total Course Fee (Academic Year 1 Entry)	NIL
Total Course Fee (Academic Year 2 Entry)	NIL
Total Course Fee (Academic Year 3 Entry)	NIL
Other Mandatory Fees	
Application Fee (New Students)	NIL

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

All fees are subject to annual revision.

Modules

- Project Design Skills
- Domestic Building Science and Services
- Domestic Construction Technology
- Construction Materials
- Construction Industry Practice 1
- Land and Building Surveying
- Building Project 1
- Group Project 1
- Academic Writing for Sciences
- Law for Construction Professionals
- Commercial Construction Technology
- Construction Industry Practice 2
- Commercial Building Science and Services
- Project Administration
- Construction Project Management 1
- Building Project 2
- Group Project 2
- Effective Communication Skills 2
- Contract Management
- Construction Project Management 2
- Sustainability and Innovation in Construction
- Research Dissertation
- Group Project 3
- Academic Writing 3

Mode of Assessment

Assessment of this programme may include assignments, projects and final examinations.

Graduation Requirements

For graduation requirements, please refer here.

Annex | Module Outlines

Group Project 1

The module aims to provide students with an understanding of the role of the construction professional within the multi-disciplinary construction industry, and develop their personal and team-working skills and the attributes needed for a successful career within their chosen profession.

Students will be introduced to the most important considerations in sustainable development, inclusive design and construction practice and be required to use their skills and knowledge to create a solution to a realistic urban development project in response to a client's brief. The project will support the development of a greater understanding of the impact of construction projects within the technical, social, environment and economic context at a national and international level.

These skills will also prepare the students to undertake Group Project 2, demonstrating teamwork, project planning, research and critical evaluation as well as technical and personal reflection.

Project Design Skills

The aim of this module is to develop skills in creating, refining and presenting construction documents in various drawn formats. Through practical, activity led studio and location based tutorial sessions, students will develop measuring and sketching skills and use this recorded information as a basis for creating a series of construction documents using a variety of industry standard Computer Aided Design (CAD) software packages. An understanding of the interoperability between software packages and manual sketches will be demonstrated by linking aspects of various drawing types together as a whole. Further to this, the drawings will form the basis for 3D model making. The module will also embed the arithmetic associated with scale and printed output of construction drawings.

Domestic Building Science and Services

The module will enable students to develop an understanding of the physical behavior of the domestic building as a system, services design, durability, comfort and indoor air quality is essential to produce high-performance low-rise buildings, providing knowledge that focuses on the analysis of the physical phenomena and modern methods of energy control and how this impacts energy efficiency. The content will be delivered in a structured format to building upon the students' existing knowledge of low-rise construction technology. In addition, the use of laboratory teaching will give a first-hand experience of how these theories are put into practice.

Domestic Construction Technology

This module seeks to inspire students to develop full understanding of the principles of construction in relation to low-rise domestic building besides an appreciation of the various aspects of the design and construction technology required for constructing a sustainable and comfortable low-rise domestic building. Introduce learners to the fundamental decision-making processes associated with the choice of construction methods, materials and technologies for the construction of a low rise dwelling. This is to be achieved through an effective delivery which includes a variety of teaching methods to reinforce understanding and application of the theory and practice of low-rise domestic construction.

Construction Materials

Introduce basic concepts and develop an understanding of engineering properties of construction materials including, modern construction materials and structural construction materials (concrete, timber, steel, glass and masonry etc.). The lectures provide an explanation of the composition, manufacture, properties, durability, performance and behaviour of these materials and the hazards and risks they may pose both during construction and subsequent operation of a structure.
The problem of “material selection” in considered in relation to:

- Material resources (and their financial and environmental costs).
- Required performance and design life.
- Environmental exposure and associated overall durability.

The content will be delivered in an integrated way, enabling timely and effective delivery of various components to reinforce understanding and application.

Construction Industry Practice 1

The module aims to provide students with an understanding of the role of the construction professional within the multi-disciplinary construction industry.

Students will be introduced to the most common processes involved in building design and construction as part of the investment process for the built environment including the principles of contract law, risk management, negligence, ethics, safety, sustainable design and construction practice.

Land & Building Surveying

The aim of the module is to give the student a knowledge of how vertical and horizontal control is established on site through levelling and traversing and how this is applied to construction site activities. It will also give the student the necessary fieldwork skills to do this using appropriate surveying instrumentation.

Building Project 1

This module is an introduction to the core knowledge and skills that define the role of construction professionals within the building process in the national and global contexts. This module will focus on integrating your understanding and appreciation of construction management and quantity surveying with the process of design, together with developing your skills of communicating your designs through drawing and model making which are vital to ensuring that your ideas are understood and can be implemented.

Academic Writing for Sciences

This module is for level 4 students studying Sciences who wish to enhance their academic writing. It offers opportunities for learning about the academic genres and cultures associated with subjects in Science, Technology and Engineering. The module will equip students in these fields to undertake research and plan assignments as well as offering guided practice in revising and editing texts. This module will develop students' employability in Science- and Technology-related careers by enhancing their written communication in these genres, with a focus on report writing.

Group Project 2

The aim of this module is to develop the student's skill base through the continued development of critical, transferable study skills that are of practical benefit in the workplace and that promote and enable continued professional development.

The skills are developed through a continuous review of experience and skills while tackling a group project that aims to develop the students' understanding of collaboration in an industrial scenario within Building Information Management. The purpose of the project is to develop key learning skills and personal attributes that are required of construction professionals. These skills will also prepare the students to undertake Group Project 3, demonstrating teamwork, project planning, critical and research evaluation as well as technical and personal reflection.

The module aims to use skills developed in other areas of the course through a practical project delivered as part of a group, as well as incorporate internationalisation through an optional international field-trip, and drawing from the wide range of nationalities and experiences of the students as appropriate to the professional body guidance.

Law for Construction Professionals

This module will provide an introduction to general principles and concepts of law related to the construction industry. The module's aim is to develop an ability to understand and apply these legal principles to particular legal problems that may arise in the course of construction activities.

The module provides an overview of the Singapore legal system, Singapore legislation and areas of Singapore law relevant to construction professionals, including contracts, dispute resolution, planning law and construction health and safety legislation. The module is particularly relevant to those intending to be involved in the design and /or construction processes.

Commercial Construction Technology

The aim of this module is to develop an advanced knowledge of construction technology and procedures of commercial developments for students who have prior knowledge of low-rise domestic scale construction. The emphasis will relate to multi-storey and commercial framed structures and include a study of pre-construction activities, substructure and superstructure as well as the external envelope and internal access. The impact of the design process and legislative influences on the layout and planning of buildings will be studied. Renewable technologies will also be considered together with the impact of energy conservation and climate change. The module will also consider different forms of construction related to high rise buildings and how these can meet and/or exceed the needs of clients.

Construction Industry Practice 2

The module covers essential industry relevant skills and development preparing students for the workplace promoting individual practical skills development. The skills will be developed through the use of contact seminars, lectures and a flipped learning approach which starts to develop the students understanding of methods such as Building Research Establishment Environmental Assessment Method (BREEAM), software modelling and Building Information Modelling (BIM).

In addition, transferable skills will be developed for use in the Group or Work-Based Projects.

Commercial Building Science and Services

This module focuses on the building services and systems for commercial and high rise buildings. This includes the electrical, mechanical and public health systems. It also includes some fundamental aspects of building science such as building physics, building materials, thermal comfort, thermal efficiency and indoor environmental quality. Considerations shall also be given to health and safety issues relative to building services and systems.

Project Administration

The aim of this module is to explore the concepts, theories and principles relevant to construction management and quantity surveying practices, in particular studying the pre-contract and post-contract financial and cost management procedures.

Building Project 2

This module aims to further develop your understanding and practice of the role of construction professionals within the building process in the UK and also in the global context.

This module will focus on further integrating your understanding and appreciation of construction management, and quantity surveying with the process of design, together with developing your skills of communicating your designs through drawing and model making which are vital to ensuring that your ideas are understood and can be implemented. You will have the opportunity to analyse, evaluate and articulate essential components of the design process in construction from feasibility through to handover.

Construction Project Management

This module aims to introduce students to the basic concepts of Project Management within the context of the construction industry; “the application of processes, methods, knowledge, skills and experience to achieve the project objectives” (APM 2017).

The module is intended to enable students to demonstrate a knowledge and understanding of the practical principles which will need to be applied for the successful completion of construction projects in terms of time, cost, quality and stakeholder expectations to be achieved within the constraints of a changeable economic and legislative environment.

The students will be introduced to the concepts of Construction and Project Management in theory and practice. Students are expected to acquire better understanding of project management tools and techniques besides develop the appropriate skills to use, interpret and critically analyse the data through a variety of engaging teaching methods.

The module will use case studies based on real projects which deal with various aspects of construction and project management in a real construction industry environment. The students are also introduced to the concept of sustainable delivery of projects and the role of ethical Project Management in developing and contributing to a more sustainable economy and society.

This module is consciously designed to offer the best practice of both worlds vis-à-vis Project Management and Construction Management.

Effective Communication Skills 2

The aim of this module is to build on the student’s experience of communication, allowing them to understand the basis for inter-personal communication, and requiring them to develop and apply appropriate communication strategies. Topics include barriers to effective communication, assertiveness skills and techniques, an introduction to neuro-linguistic programming, emotions and emotional intelligence, verbal and non-verbal communication, personality and culture. Students will be given the opportunity to practise these skills in a safe environment and reflect on current performance and future development needs.

Students who undertake this module may be in a stronger position to secure employment. Cross-sector, employers have identified effective communication as an essential skill they look for when recruiting graduates.

Group Project 3

The aim of this module is that students will accrue a detailed understanding of some of the key stages involved in a construction projects through the operations of a simulated design and construction team. Students will learn how to manage, through Building Information Modelling, aspects of a project through a feasibility study working in groups drawn from construction courses.

The module establishes a learning experience within the context of a major project, which considers construction/environmental/humanitarian criteria as appropriate to the pathways and professional body guidance. This enables the integration of theoretical knowledge and understanding with best industrial practice, including health, safety and welfare and environmental sustainability. In addition, the development of critical, analytical and transferable skills, which are of practical benefit in the workplace, are promoted to enable continued professional development. These skills will be developed and applied through a major scenario-based group-work coursework assignment, adopting a BIM process, where students will be able to apply previously learnt knowledge. The project will support the development of a greater understanding of the impact of construction projects in the context of technical, social, environment and economics as appropriate to the pathways and professional body guidance.

Contract Management

This module will develop the understanding of critical awareness of the selection, use and interpretation of standard forms of contracts within the construction industry in Singapore. Aside from the applicable statutes and regulations, the principal laws governing the construction market are derived from the common law of contract and tort. Rulings from other common law jurisdictions, such as the United Kingdom and Australia, are persuasive but not binding on the Singapore Courts. The module will seek to provide the following:

- An understanding of the legal framework within which construction firms and projects are managed.
- An understanding of procurement methods, tendering procedures, and contractual relationship among project participants.
- An awareness of the main standard forms of contract available in the construction industry in Singapore.
- Detailed understanding of contractual provisions and administration mechanisms relating to the common forms of contract in the construction industry in Singapore.
- The module is specifically useful to those intending to be involved in contract practice and administration of construction projects.

Construction Project Management 2

Project Management (PM) is a much needed and indispensable skill in the construction industry regardless of the type and size of organisations or the sectors they work in. A PM's role starts from inception of projects and literally extends to end-of-life scenarios and includes everything in between. This module will enable critical awareness and deliver a greater understanding of some of the advanced principles of construction management as well. Project management helps organisations manage change, deliver against strategic objectives and achieve competitive advantage. It aims to develop and enhance students' understanding and application of project management tools and techniques, especially in a relevant case study scenario. A secondary focus of the module will be the application of soft skills required by modern construction project managers including interpersonal relationships and an understanding of the students own cognitive and communication skills applied through the construction simulation centre.

Sustainability and Innovation in Construction

This module aims to study the influence of current legislative, contractual, cultural, scientific and technological changes in the construction industry and its impact on the process of construction design and management. Areas which may be considered include low carbon construction, corporate social and ethical responsibility, existing and proposed legislative changes, changes to contractual arrangements, productivity issues, internationalisation, use and dissemination of best practice, BIM, Passive Design etc. This module will be research content lead and inspired by contemporary issues affecting the industry, and as such the content and delivery method will be altered and/or adjusted appropriately to reflect the above theme.

Research Dissertation

The aim of this module is to enable students to develop their research skills by conducting primary or secondary research focused on a specific problem of relevance to their discipline. Students would use different methods and research skills to effectively communicate research novelties and ideas to the academic and non-academic communities. It will contribute to the research training aim appropriate to their level of study and requires them to demonstrate an understanding of the principles of research and to show an appropriate level of competence in the design, execution, and reporting of a research project. It will enable them to understand the importance of correct and critical analysis of all the factors involved in a problem and develop their initiative as they pursue and execute the investigation, demonstrating originality and creativity.

Students will be required to ensure that their work conforms to appropriate codes of practice and standards, meeting the ethical requirements of PSB Academy. Successful completion of the research investigation will require a methodical approach and planning, self-management, and effective communication. Support and guidance will be provided by a supervisor who will be the primary point of contact for a student on this module.

Academic Writing 3

This module offers students strategies for conceptualising, planning, drafting, revising and editing longer assignments such as final-year projects and dissertations. Focusing on the Level 6 associated tasks of 'evaluate', 'synthesise', 'argue' and ‘reflect’, this module emphasises the place of these types of discourse and practice in academic communication. This module will be of value to students in all disciplines, and the competences they acquire and develop will contribute to their university personal development and, implicitly, to their future workplace roles that are increasingly writing intensive.

Bachelor of Arts with Honours in Accounting and Finance

At a Glance

Awarding Institution	:	Coventry University, United Kingdom
Modes of Study	:	Full-time (International & Singapore-based Students) Part-time (Singapore-based Students)
Duration	:	16-28 months
Commencement & End Date	:	NIL

Overview

This accounting and finance degree course brings together the twin disciplines of accountancy and finance. Students will get a solid grasp of accounting techniques, business strategies, financial legislation and management, and taxation and understand how they are being applied in today's business world.

This degree is recognised by the Association of Chartered Certified Accountants (ACCA) and the Institute of Chartered Accountants England and Wales (ICAEW). It is also on the list of universities recognised for admission to Singapore CA Qualification (Foundation) programme.

Upon graduation, students will receive exemptions of up to*

- 9 ACCA papers
- 5 Singapore CA papers
- 4 ICAEW papers

*Graduates will receive a formal notification of exemptions when they register as a student member with the professional bodies. The Coventry University reserves the right to cancel modules or change the learning outcomes and content of modules at any time and without prior notice. This may affect the exemptions students may receive from all or some of the professional bodies. In addition, the professional bodies may change the number of exemptions they award to this programme at their discretion and without prior notice. Graduates will pay reduced fees for their ACCA membership, exemptions and special subscription fees, should they choose to embark on the ACCA Accelerate programme.

Career Opportunities

- Accountancy & Financial Management
- Banking & Financial Services
- Business Development & Consultancy
- Business Operations
- Entrepreneurship
- Financial Analysis (Equities, Credit and Risks)
- Management

Admission Criteria

Local Qualifications

Entry via Year 1

- Three GCE A-Level subjects which must include a business-related subject such as Business, Economics, Mathematics or similar; or equivalent.

Entry via Year 2

- Polytechnic Diploma in Accounting, Business, Finance or similar; or
- Diploma/Advanced Diploma in Accounting, Business, Finance pathway programmes or equivalent, awarded by a recognised private education institution.

Note: Successful completion of the following PSB Academy's Diploma programmes may be eligible for direct entry into Year 2.

- Diploma in Business Administration (with additional pass in the bridging module Business Accounting)
- Diploma in Business Administration (Accounting and Finance)
- Diploma in FinTech

Entry via Year 3

- Applicants may be eligible for direct entry into Year 3 with a Polytechnic Diploma in a closely related discipline. Such applications will be considered on a case-by-case basis in consultation with Coventry University link tutors.

Applicants with any other non-standard qualifications may apply but will be assessed on a case-by-case basis by PSB Academy and Coventry University.

Minimum Age: 16 years old

English Language Requirement

Entry via Year 1 and 2

- English Language at GCE O-Level at grade C or above; or
- Successfully complete PSB Academy's Certificate in English Proficiency Level 5; or
- IELTS score of 6.0 with no component lower than 5.5 (or equivalent).

Entry via Year 3

- IELTS score of 6.5 overall or equivalent

International Qualifications: https://www.psb-academy.edu.sg/intl-adm/

Course Fees

Full-time

Course Fees	**Singapore-based Students**	**International Students**
Course Fee (Academic Year 1 Entry)	NIL	NIL
Course Fee (Academic Year 2 Entry)	NIL	NIL
Course Fee (Academic Year 3 Entry)	NIL	NIL
Other Mandatory Fees		
Application Fee	NIL	NIL
Student Development and Administration Fee (New Students)	NIL	NIL

Part-time

Course Fees	**Singapore-based Students**
Course Fee (Academic Year 1 Entry)	NIL
Course Fee (Academic Year 2 Entry)	NIL
Course Fee (Academic Year 3 Entry)	NIL
Other Mandatory Fees	
Application Fee (New Students)	NIL

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

All fees are subject to annual revision.

Modules

Academic Year 1

- Statistical Analysis for Accountancy and Finance
- Introduction to Business Economics
- Introduction to Personal Finance
- Financial Accounting Foundations
- Management Accounting Foundations
- Mathematical Techniques for Accountants
- Academic and Professional Training

Academic Year 2

- Introduction to Financial Services
- Principles of Financial Investment
- Professional and Academic Competencies
- Financial Reporting and Analysis
- Decision Management
- Principles of Taxation

Academic Year 3

- Corporate Financial Management
- International Corporate Reporting
- Performance Management
- Audit and Internal Control
- Advanced Study for Accounting and Finance
- Investment Analysis

Mode of Assessment

Assessment of this programme may include assignments, projects, and final examinations.

Graduation Requirements

For graduation requirements, please refer here.

Annex | Module Outlines

Academic Year 1

Statistical Analysis for Accountancy and Finance

Students will be introduced to quantitative techniques and their application to accountancy and finance in this module. The focus of the subject is statistical statistics and topics will include descriptive statistics, probability, sampling, confidence intervals, hypothesis testing, elementary correlation, regression analysis and time series forecasting. Students will also learn the concepts and application analysis to improve business decision-making.

Introduction to Business Economics

In this module, students will learn to analyse the nature and functions of financial institutions. They will be armed with the necessary tools and concepts to explain and interpret the process of financial intermediation and understand the system of regulation in financial markets. The module also examines the underlying principles and characteristics of money and banking that form the basis for understanding their roles in the economy.

Introduction to Personal Finance

This module introduces fundamental concepts of personal finance. In doing so, the inter-relationships between finance and financial planning are explored. A theoretical strand contextualises finance and financial planning within their respective regulatory frameworks. A technical strand equips students with fundamental skills to understand the concept of the time value of money, as applied to solving cash flow valuation problems within the context of corporate and personal finance. This subject is innovative in its broad and synergistic overview of the financial services industry and supports a socially responsible approach to commerce in its exploration of ethical issues.

Financial Accounting Foundations

This module aims to introduce students to relevant concepts in financial accounting. Students will explore and analyse different accounting standards, and entities such as sole ownership, partnership and companies. The module is designed to familiarise students with various accounting standards that are relevant to year 2 and 3 modules.

Management Accounting Foundations

This module focuses on the internal managerial processes used in accounting for business transactions. Students will learn about concepts such as budget analysis, comparative analysis, costing methods and behaviours within firms.

Mathematical Techniques for Accountants

Accountants today need a mix of accounting and finance mathematics to monitor and report on financial performance in their organisations. In this module, students will study a range of topics that cover the mathematical techniques that accountants commonly use, to make and advise on a range of financial decisions – from setting prices to assessing the feasibility of projects.

Academic and Professional Training

This module aims to help students develop a range of key academic and professional skills. Students can hone their academic research and writing skills by learning to identify a principal research question and carry out an initial literature review. An important aspect of this module is the emphasis on developing students' ability to become independent learners through the reflection and evaluation of the research processes that they adopt. Employability skills relevant to both the local and international graduate labour market will be enhanced through this module.

Academic Year 2

Introduction to Financial Services

In this module, students will learn to analyse the nature and functions of financial institutions, use the necessary tools and concepts to explain and interpret the process of financial intermediation, and understand the system of regulation in financial markets.

The module also examines the underlying principles and characteristics of money and banking that will form the basis for understanding their roles in the economy. Topics studied will include the role and importance of banks in financial intermediation, their fundamental characteristics as depository institutions and suppliers of money, the management of risks involved in their operations, and how regulations address some of the risks.

Principles of Financial Investment

This module aims to introduce students to relevant concepts in finance. Students will learn about the function of capital markets, the trade-offs between risk and return, how to price financial assets and the importance of the way a firm finances its operations. The module is designed to develop students' numeracy and analytical skills.

Professional and Academic Competencies

This module aims to further develop and put to practice a range of key skills required of the professional accountant and financier. An important aspect of this module is the emphasis on developing students' ability to become independent learners through reflection and evaluation of the research processes that they adopt. A greater awareness and understanding of vocational skills particularly relevant to the accountant and financier will be developed through further co-operation with professional bodies, employer links, the University EPU and through input from the departmental Employment Personal Tutor.

Financial Reporting and Analysis

The module primarily focuses on the preparation of published financial statements by public limited companies. It aims to introduce students to International Financial Reporting Standards (IFRS) and provide the knowledge and skills necessary to understand and apply several IFRS and accounting theories in the preparation of published financial statements of entities, including a simple group. Students will also develop the skills necessary to critically analyse and interpret these financial statements and understand their limitations.

Decision Management

This module will demonstrate how relevant accounting techniques can be used to assist managers in decision-making. Students will learn the techniques, apply them to business situations and consider their limitations. In addition to this, students are introduced to the behavioural aspects of Managerial Accounting in areas such as transfer pricing and divisional performance.

Principles of Taxation

This module introduces aspects of the Singapore taxation system related to businesses and their employees. The module considers two key areas of taxation, namely the basic technical aspects of tax and its applications. The former consists of income tax from self-employment, employment and investment, partnerships, individual and group of companies and the goods and services tax liability of businesses. The module will also allow students to compute tax liability and apply tax planning techniques for individuals and companies to mitigate non-compliance.

Academic Year 3

Corporate Financial Management

The overall aim of this module is to provide students with a deeper understanding of the scope and nature of the financial management issues that exist within modern corporations.

The module covers the major strands of financial management theory such as working capital management, financing of the firm, risk management, and demonstrate how this theory is applied in real world applications.

International Corporate Reporting

The module primarily focuses on the preparation of published financial statements by public limited companies. The module aims to teach students the skills necessary to understand and apply International Financial Reporting Standards (IFRS) and accounting theory in the preparation of published financial statements for entities, including groups of companies.

Performance Management

This module covers relevant accounting techniques that can assist managers in controlling their business performance. Management accounting is presented as a service function; a means to an end rather than an end itself. The aims are for students to understand the techniques, be able to apply them to business situations and understand their limitations.

Students will learn the limitations of management accounting techniques, firstly by understanding their uses and processes. In addition to this, students are introduced to the behavioural aspects of managerial accounting in areas in budget games.

Audit and Internal Control

The module builds on students' understanding of financial accounting and reporting developed by the 280ACC Financial Reporting and Analysis or equivalent. In considering different business entities operating in an international environment, students will develop an understanding and critical evaluation of: internal control risks and organisational responses, as well as audit processes and their application in the context of the external regulatory framework.

Advanced Study for Accounting and Finance

This module aims to provide students with an opportunity to integrate the various skills acquired on their course and to extend their knowledge and experience to a specialist area of interest. Through independent, student-led research into a topic of their choice, the module aims to develop skills in investigation and communication; develop an ability to apply research methods in the investigation of contemporary issues in accounting or finance; provide an opportunity for initiative and judgement in the management of a research project; and provide evidence of the application of analytical skills.

Investment Analysis

This module covers the characteristics of, and methods used in the valuation of, bond and equity financial investments. Students will learn through practical problem-solving exercises with real-world financial data.

Bachelor of Arts with Honours in Business and Finance

At a Glance

Awarding Institution	:	Coventry University, United Kingdom
Modes of Study	:	Full-time (International & Singapore-based Students) Part-time (Singapore-based Students)
Duration	:	16-28 months
Commencement & End Date	:	NIL

Overview

This business and finance degree course brings together the twin disciplines of business and finance. Students will learn about business accounting, corporate strategic management, international finance, and even investment analysis and understand how they are being applied in today's business world.

Career Opportunities

- Accountancy & Financial Management
- Banking & Financial Services
- Business Development & Consultancy
- Business Operations
- Entrepreneurship
- Financial Analysis (Equities, Credit and Risks)
- Management

Admission Criteria

Local Qualifications

Entry via Year 1

- Three GCE A-Level subjects which must include a business-related subject such as Business, Economics, Mathematics or similar; or equivalent.

Entry via Year 2

- Polytechnic Diploma in Accounting, Banking, Business, Finance or similar; or
- Diploma/Advanced Diploma in Accounting, Banking, Business, Finance pathway programmes or equivalent, awarded by a recognised private education institution.

Note: Successful completion of the following PSB Academy's Diploma programmes may be eligible for direct entry into Year 2.

- Diploma in Business Administration
- Diploma in Business Administration (Accounting and Finance)
- Diploma in Business Administration (Banking and Finance)
- Diploma in Business Studies (E-Learning)
- Diploma in FinTech

Entry via Year 3

- Applicants may be eligible for direct entry into Year 3 with a Polytechnic Diploma in a closely related discipline. Such applications will be considered on a case-by-case basis in consultation with Coventry University link tutors.

Applicants with any other non-standard qualifications may apply but will be assessed on a case-by-case basis by PSB Academy and Coventry University.

Minimum Age: 16 years old

English Language Requirement

Entry via Year 1 and 2

- English Language at GCE O-Level at grade C or above; or
- Successfully complete PSB Academy's Certificate in English Proficiency Level 5; or
- IELTS score of 6.0 with no component lower than 5.5 (or equivalent).

Entry via Year 3

- IELTS score of 6.5 overall or equivalent

International Qualifications: https://www.psb-academy.edu.sg/intl-adm/

Course Fees

Full-time

Course Fees	**Singapore-based Students**	**International Students**
Course Fee (Academic Year 1 Entry)	NIL	NIL
Course Fee (Academic Year 2 Entry)	NIL	NIL
Course Fee (Academic Year 3 Entry)	NIL	NIL
Other Mandatory Fees		
Application Fee	NIL	NIL
Student Development and Administration Fee (New Students)	NIL	NIL
Student Development and Administration Fee (Progressing Students)	NIL	NIL

Part-time

Course Fees	**Singapore-based Students**
Course Fee (Academic Year 1 Entry)	NIL
Course Fee (Academic Year 2 Entry)	NIL
Course Fee (Academic Year 3 Entry)	NIL
Other Mandatory Fees	
Application Fee (New Students)	NIL

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

All fees are subject to annual revision.

Modules

Academic Year 1

- Fundamentals of Personal Finance
- Statistical Analysis for Accountancy and Finance
- Marketing Essentials
- Academic Writing: Developing Critical Thinking Skills
- Introduction to Business Economics
- Fundamentals of Business Organisation
- Academic and Professional Training

Academic Year 2

- Marketing Planning
- Principles of Finance
- Introduction to Financial Services
- Business Management
- Professional and Academic Competencies
- Business Accounting

Academic Year 3

- Services and Retail Marketing
- Investment Analysis
- International Finance
- Corporate Financial Management
- Corporate Strategic Management
- Advanced Study for Accounting and Finance

Mode of Assessment

Assessment of this programme may include assignments, projects, and final examinations.

Graduation Requirements

For graduation requirements, please refer here.

Annex | Module Outlines

Academic Year 1

Fundamentals of Personal Finance

This module introduces fundamental concepts of personal finance to explore the inter-relationships between finance and financial planning. A theoretical strand contextualises finance and financial planning within their respective regulatory frameworks. A technical strand equips students with fundamental skills to understand the concept of the time value of money, as applied to solving cash flow valuation problems within the context of corporate and personal finance. This subject is innovative in its broad and synergistic overview of the financial services industry and supports a socially responsible approach to commerce in its exploration of ethical issues.

Statistical Analysis for Accountancy and Finance

Students will be introduced to quantitative techniques and their application to accountancy and finance in this module. The focus of the subject is statistical statistics and topics will include descriptive statistics, probability, sampling, confidence intervals, hypothesis testing, elementary correlation, regression analysis and time series forecasting. Students will also learn the concepts and application analysis to improve business decision-making.

Marketing Essentials

This module explains the nature of marketing and provide a concise understanding of the complexities of the marketplace. The lessons follow a logical structure that will demonstrate how effective marketing requires an analysis of the marketplace, the recommendation of a marketing strategy and the implementation of the desired strategy.

Academic Writing: Developing Critical Thinking Skills

This module will impart critical thinking skills important to the improvement of writing skills required at university level, particularly in writing seminar papers, assignments or projects.

Introduction to Business Economics

In this module, students will learn to analyse the nature and functions of financial institutions. They will be armed with the necessary tools and concepts to explain and interpret the process of financial intermediation and understand the system of regulation in financial markets. The module also examines the underlying principles and characteristics of money and banking that form the basis for understanding their roles in the economy.

Fundamentals of Business Organisation

The fundamental issues of organisation structure and design are examined through various theories and models that explain the trade-offs and choices in organisational structures. The module delineates the problems which arise in designing effective organisations and explores the central issues related to the structures and processes of organisations through critical discussion, analysis, and experiential exercises.

Academic and Professional Training

This module aims to help students develop a range of key academic and professional skills. Students can hone their academic research and writing skills by learning to identify a principal research question and carry out an initial literature review. An important aspect of this module is the emphasis on developing students' ability to become independent learners through the reflection and evaluation of the research processes that they adopt. Employability skills relevant to both the local and international graduate labour market will be enhanced through this module.

Academic Year 2

Marketing Planning

This module will enhance students' knowledge of marketing principles and practices with the application of concepts to the marketing planning process framework. The module utilises a marketing simulation game operating on a web-based platform that enables students to design, construct and implement a marketing plan for a business and evaluate its effectiveness by analysing the marketing and financial impact of business decision-making with key performance indices.

Principles of Finance

This module aims to introduce students to relevant concepts in finance. Students will learn about the workings of the equity and bond markets, gain quantitative skills to price stocks and bonds, acquire techniques to exploit the trade-off between risk and return to an optimal effect, develop critical understanding of theories and empirics of asset pricing models and market efficiency hypothesis, and become aware of key financial decisions taken by firms. The module elucidates the basics of the financial theory and how they are applied in the real world. It also provides students with structured opportunities to develop quantitative and analytical skills for more advanced undergraduate studies in finance.

Introduction to Financial Services

In this module, students will learn to analyse the nature and functions of financial institutions, use the necessary tools and concepts to explain and interpret the process of financial intermediation, and understand the system of regulation in financial markets.

The module also examines the underlying principles and characteristics of money and banking that will form the basis for understanding their roles in the economy. Topics studied will include the role and importance of banks in financial intermediation, their fundamental characteristics as depository institutions and suppliers of money, the management of risks involved in their operations, and how regulations address some of the risks.

Business Management

This module aims to help students develop a strategic perspective of business, by taking an integrated view of the environment in which a business operates. Students will understand the internal & external factors which influence strategic decisions. Students will use theoretical models and frameworks as an aid to analyse, solve problems and evaluate evidence in order to prepare solutions.

Professional and Academic Competencies

This module aims to further develop and put to practice a range of key skills required of the professional accountant and financier. An important aspect of this module is the emphasis on developing students' ability to become independent learners through reflection and evaluation of the research processes that they adopt. A greater awareness and understanding of vocational skills particularly relevant to the accountant and financier will be developed through further co-operation with professional bodies, employer links, the university and inputs from the lecturer.

Business Accounting

This module is designed to give non-accounting students an understanding of the language, concepts and tools commonly used in financial and management accounting. Students will be introduced to managerial accounting concepts and will be expected to apply them in a decision-making context.

Students will be expected to draw up a basic set of financial accounts including profit and loss, balance sheet and cash flow. Using these, they will be expected to make a comparative evaluation of the performance of the firm.

Academic Year 3

Services and Retail Marketing

This module explores the theoretical concepts surrounding services marketing and retail marketing. Students will have the opportunity to develop appropriate marketing solutions to problems with case studies and reference to current services and retail developments.

Investment Analysis

This module provides students with an understanding of: the characteristics of, and methods used in the valuation of, bond and equity financial investments. The teaching of the model will be focused around the use of practical problem-solving exercises using, where possible, real-world financial data.

International Finance

The aim of this module is to provide students with an understanding of the international dimension of finance and its impact on business. By the end of this module students will appreciate the workings and operation of currency derivatives markets, the international money and capital markets and the principles of currency risk management.

Corporate Financial Management

The overall aim of this module is to provide students with a deeper understanding of the scope and nature of the financial management issues that exist within modern corporations.

The module covers the major strands of financial management theory such as working capital management, financing of the firm, risk management, and demonstrate how this theory is applied in real-world applications.

Corporate Strategy Management

This module will cover the concepts, frameworks and techniques of strategic decision making so students can learn to assess competitive conditions, evaluate corporate capabilities and identify means for businesses to establish sustainable competitive advantage in its industry.

Additionally, students will engage in debate on critical business issues such as corporate values, Corporate Social Responsibility, and Business Ethics.

Advanced Study for Accounting and Finance

This module aims to provide students with an opportunity to integrate the various skills acquired on their course and to extend their knowledge and experience to a specialist area of interest. Through independent, student-led research into a topic of their choice, the module aims to develop skills in investigation and communication; develop an ability to apply research methods in the investigation of contemporary issues in accounting or finance; provide an opportunity for initiative and judgement in the management of a research project; and provide evidence of the application of analytical skills.

Master of Science in Engineering Business Management

At a Glance

Awarding Institution	:	Coventry University, UK
Modes of Study	:	Full-time (International & Singapore-based Students) Part-time (Singapore-based Students)
Duration	:	12-15 months
Commencement & End Date	:	NIL

Overview

This MSc Engineering Business Management aims to equip engineering professionals, who have acquired expertise in their engineering careers and desire to develop management skills to provide leadership and to contribute to a successful and competitive business.

The course will explore the key areas of business management theory, linking these to real life practice through the use of research, case studies and applied work, exploring different ways that management can significantly contribute to wealth creation, competitiveness, and even the advancement of society. Candidates will also be introduced to all key aspects of managing a company in the engineering sector.

Career Opportunities

- Aerospace & Avionics Engineering
- Building Services Engineering
- Civil Engineering
- Construction Engineering
- Electrical Engineering
- Environmental Engineering
- Marine Engineering
- Materials Engineering
- Mechanical Engineering
- Quality Engineering

Admission Criteria

Local Qualifications

- A minimum of a second class honours degree in any engineering related subject or Management studies; OR
- A relevant professional qualification of an equivalent level; OR
- Candidates with a level 6 qualification (degree or equivalent) and 3 years minimum experience in an appropriate graduate level role; OR
- Candidates with other Higher level qualification and 5 years minimum experience in an appropriate graduate level role will be considered on a case by case basis.
- Minimum Age: 21 years old

English Language Requirement

Student whose first language is not English must demonstrate proficiency in the English language equivalent to IELTS 6.5.

International Qualifications: https://www.psb-academy.edu.sg/intl-adm/

Course Fees

NIL

Modules

- Global Lean and Agile Operations
- Financial Decision Making and Risk Analysis
- Leadership and People Management
- Supply Chain Management
- Project Management
- Management of Quality
- Sustainability and the Environment
- Global Engineering Strategy
- Study Skills and Research Methods
- Masters Dissertation

The School of Postgraduate Studies may recommend modules for completion within the published duration. The delivery of modules is subject to change and may not follow the sequence as shown above.

Mode of Assessment

Assessment of this programme includes coursework such as group work, in-class tests, written-reports, presentations, and both written and practical exams.
Assessment methods are subject to the University's revision.

Global Lean and Agile Operations	Coursework 1 – Assignment 50% Coursework 2 – In-class assessment 50%
Financial Decision Making and Risk Analysis	Coursework 1 – In-class test 65% Coursework 2 – In-class test 35%
Leadership and People Management	Coursework 1 - Group design/simulation 100%
Supply Chain Management	Coursework 1 – Case presentation 30% Coursework 2 – Written report 70%
Project Management	Coursework 1 – In-class test 40% Coursework 2 – Group project 60%
Management of Quality	Coursework 1 – Presentation 30% Coursework 2 – Written report 30% Coursework 3 – In-class test 40%
Sustainability and the Environment	Coursework 1 – Assignment 40% Coursework 2 – Reflective Assignment 60%
Global Engineering Strategy	Coursework 1 – In-class presentation 25% Coursework 2 – Written Assignment 75%
Study Skills and Research Methods	Coursework 1 will be undertaken within timetabled seminar sessions and completed as part of the modules directed study time, accounting for 30% of the module mark. Coursework 2 will comprise a full masters project proposal and be undertaken as self-guided study, account for 70% of the module mark.
Masters Dissertation	Final Proposal Written Dissertation Project Management and Performance

Graduation Requirements

For graduation requirements, please refer here.

Annex | Module Outlines

Global Lean and Agile Operations

- Lean methodologies and waste analysis
- Lean Enterprise
- Agility Strategies (Product, organisation, technology)
- Extended Value stream mapping for collaboration with customers and suppliers
- Production planning and control for high mix manufacture
- Flexible Manufacture

In the fast-moving global marketplace of today agility enables manufacturing industry to thrive in an environment of continuous and unanticipated change. It is an overall strategy focused on rapid response to unpredictable customer demand.

Lean operations on the other hand is often seen as a collection of operational techniques focused on the elimination of waste to increase productive use of resource to make value flow. It is often considered to be the precursor to agility.

This module will review both concepts and through industrial case studies and examples will enable you to assess how these two techniques can work together, evaluating the benefits and limitations.

On successful completion of this module a student should be able to:

- Evaluate the current research and application of lean principles and agility strategy in manufacturing/service operations.
- Assess the impact of lean enterprise on end-to-end value streams, including global supply chains.
- Apply appropriate analytical techniques to improve competitiveness through lean and agile principles wastes.
- Critically appraise the key attributes of agile manufacture (product, process, planning, material control).

Financial Decision Making and Risk Analysis

- The Financial Environment and Flow of Funds
- Finance and Accounting
- Capital Expenditure Appraisal
- Portfolio Investment and Corporate Strategy
- Equity Finance
- Debt Finance
- External Growth
- International Financial Management

The application of decision-making and risk analysis will be considered throughout the above topics.

This module aims to provide the participants with an understanding of key financial concepts and their application towards the establishment of a financially sound manufacturing business. It will equip the participants with sufficient financial knowledge to enable them to evaluate their own decision making in the context of their manufacturing company's long-term strategic development.

On successful completion of this module a student should be able to carry out the following with respect to the specific requirements of manufacturing businesses, placing special emphasis on problems of managing the capital asset replacement decision, economies of scale of the production process, the integration of the overall logistics process and the integration of suppliers in a global manufacturing environment:

- Explain the key sources of funds required to establish a stable manufacturing business.
- Appraise the basic accounts of a business and form judgements about a firm's performance over time and in comparison, with competitor firms.
- Identify and apply the key tools used to evaluate capital expenditure proposals.
- Explain the non-quantifiable benefits of sustained investment in capital assets.
- Calculate the value of a company and identify the major strategic and operational factors which influence the value of a company.
- Analyse the causes and effects of the rise in multi-national / global companies.

Leadership and People Management

- Organisations: The role of organisations in society, organisation structure, organisation culture.
- The Manager/ leadership: Managerial roles and responsibilities, management styles, the manager as coach and mentor, manager capabilities, managing conflict.
- People and work: Behavioural science theories, the role of work in society, people-technology systems, human-centred approaches to work.
- People and the organisation: Communication principles and systems, involvement through trades unions, developing people, reward systems (including payment systems), organisational constraints on managerial action.
- Change: Structural and cultural requirements of change, change processes (for the organisation and individual), change drivers, managers as agents of change.

The aim of this module is to prepare participants for the human aspects of managing engineering and manufacturing, logistics and transport organisations. It takes a largely strategic view, building on behavioural science and organisation theory to determine structures and cultures for effective organisations and to consider the role of the individual manager in implementing them. It pays particular attention to strategies for establishing the best combination of people and technology.

The module is relevant to a wide range of sectors and organisational functions, including project management, logistics, production management etc. and uses examples and case studies to ensure a good overview of how relevant theories are applied within the sector organisations for manufacturing, logistics and transport management, Professionally, the module meets good practices recommended by the Institution of Engineering and Technology and many other practices promoted by the Chartered Institute of Personnel and Development and Chartered Institute of logistics and Transport.

On successful completion of this module the student should be able to:

- Analyse the existing human resources management (HRM) practices in an organisation in order to .plan how to facilitate and manage changes.
- Provide an understanding of the relevant theories, origins and best practices involved in managing people in the workplace by establishing an understanding of the key elements of leadership/people management, including structure, culture, management, team working, training, development, coaching, mentoring, communication, influencing, performance and motivation.
- Incorporate behavioural theories in order to establish and implement strategies for the interaction of people and technology; benefits and pitfalls.
- Evaluate best practice in communicating with employees both directly and through trades unions/ workers cooperatives.

Supply Chain Management

The following topics will be covered, with approximately equal amounts of time spent on each:

- Definition, nature and objectives of Supply Chain Management (SCM), links to strategy and contribution to business performance & competitive advantage
- Supply chain concepts - flows of material, money and information
- 'Push' and 'pull' scheduling (demand forecasting, MRP & JIT)
- Scope of supply chain management
- Make or buy strategy
- E-commerce & e-business
- Forrester / bullwhip effect
- Continuous improvement and supplier development
- Linking SCM to other disciplines

This module reviews the nature, role and contribution of Supply Chain Management and its application to business supply chains. It equips participants with an understanding of the importance of Supply Chain Management from both a customer and supplier perspective, with an aim to prepare them for starting a managerial role within an industrial or commercial supply organisation.

On successful completion of this module the student should be able to:

- Appraise the linkage between theoretical concepts and real-life supply chain management practice.
- Apply supply chain management theory, concepts and analytical tools to analyse case studies of sufficient complexity to require judgement and synthesis.
- Critically evaluate current research and advanced scholarship in a specified area of supply chain management leading to a demonstration of independent learning and an advancement of individual knowledge in the area.
- Critically appraise how SCM and supplier development can contribute to improvement in business performance and competitive advantage including the drivers for change.
- Assess and evaluate advanced concepts and future trends in SCM.

Project Management

The following topics will be covered:

- The nature and types of projects
- Managing Organisational Change
- Stakeholder analysis
- Human resources management
- Scope, aims & objectives
- Planning, Bar Charts & Networks
- The nature of Project Management
- Resource Scheduling & Expediting
- The role of the Project Manager
- Monitoring & Controlling
- The project team
- Estimating, & Budgeting
- Project Organisation & Strategy
- Budgetary control & Variance analysis
- The Business Case
- Change Control & Project termination
- Project appraisal
- Contract Process
- Uncertainty & Risk analysis
- Contract & Payment Strategy

This module prepares you for managing organisational change through projects. It focuses on projects involving major changes, including issues related to new products, new plant and equipment and new operating systems, which will affect the lives of people both within and without the organisation.

It takes a high level, critical & evaluative view of the subject, emphasising managerial and strategic use of the tools and techniques of project management.

On successful completion of this module a student should be able to:

- Critically assess the business case for a project.
- Appraise suitable organisation structures for monitoring and controlling projects.
- Evaluate strategies for the reduction of uncertainties and the management of associated risk, including that due to the specific nature of projects.
- Perform effectively and efficiently as a member of a project team.

Management of Quality

The following topics will be covered:

- The philosophies and principles of TQM.
- The Tools, Techniques, Management Systems and leadership styles applicable to a TQM environment.
- To review and critical appraise levels of Quality: Inspection, Quality Control, Quality Assurance and Total Quality Management.
- Cultural and leadership aspects and the influence of The Quality Gurus and their contribution to Quality.
- To review and understand the concept of variation and its analysis as an aid to continuous improvement, SPC and process capability.
- Understanding and implementation of Six Sigma programmes.
- ISO 9000, ISO 14000 and related Management Systems.
- Quality costing as an aid to managing quality and motivating continuous improvement.
- Benchmarking and EFQM as an aid to developing both strategic and tactical competitive advantage.
- Designing Quality into new products and processes through QFD.

The intention of this module is to convey the importance of Quality as a strategy for continuous improvement in business performance. Accordingly, the module evolves through strategies for competitive quality, quality in design and manufacture and the customer supply chain to the concept of Total Quality.

On successful completion of this module a student should be able to:

- Apply the philosophies, tools, techniques and systems associated with Total Quality Management.
- Differentiate between Inspection, Quality Control, Quality Assurance and Total Quality Management programmes and critically review where and when these techniques are applicable.
- Assess the maturity of an organisation's quality programme including cultural and leadership aspects.
- Plan and implement activities which will improve a quality programme within an organisation and move the organisation towards Total Quality Management.

Sustainability and the Environment

- Social, Environmental and Economic Impacts
- Ethical and environmental issues in supply chain management
- The conditions for sustainable business
- Corporate governance and leadership in relation to sustainability
- Key drivers influencing sustainable business practices from a marketplace perspective, with an emphasis on stakeholder theory

This module is designed to provide students with the ability to develop and implement business models/strategies within the appropriate frameworks to comply with future requirements for sustainability. Aspects of sustainability (economic, social, environment) sustainable operations and sustainability challenges will be studied.

On successful completion of this module the student should be able to:

- Appraise the global nexus of ecological, social, and economic challenges facing society, and the risks and opportunities for business today.
- Assess the complexity, interconnectedness and interdependency of global systems.
- Evaluate different stakeholder perspectives and their relevance to business in building shared values.
- Assessment of the business case for sustainability, and how sustainability is driving innovation and new forms of value.
- Justify the co-evolution of business and society and the contribution business can make in the transition to a more prosperous, equitable and resilient world.
- Show a critical awareness of current problems and new insights in the sustainable development debate and their relevance to business.

Global Engineering Strategy

- Definition, nature and objectives of strategy in a global context
- Manufacturing strategy models
- Corporate strategy concepts, theories, models and tools of analysis
- Framework for developing and analysis manufacturing strategy
- Analysis of global corporate strategy case studies
- Manufacturing strategy in the context of flexibility and simultaneous engineering, and their impact on business performance
- New product introduction as part of company strategy
- Process choice
- Types of strategy, and relationship between new product introduction strategies and business performance
- Manufacturing infrastructure
- The product development process (PDP) and its management
- Strategic implications of new product design decisions on manufacturing strategy
- Involvement of Manufacturing with the PDP
- Supporting methodology for the design of manufacturing strategy
- Definition of manufacturing strategy
- Strategy implementation
- Links between manufacturing strategy and company strategy
- Strategy and PDP performance measurement
- Contribution of manufacturing strategy to global business performance& competitive advantage
- Competing in business strategy simulation and/or analysis of global manufacturing strategy and NPI case studies

This module adopts a global perspective and focuses on facilitating the achievement of long term profitability within manufacturing companies.

Increasingly, companies in international markets are competing through their product offering, and through their manufacturing activities. An ability to respond to customer demand through having the capability to develop and produce new products quickly and effectively is an important way of creating a structural competitive advantage.

This focus on the marketplace similarly drives the development of strategies for the Manufacturing function, in that it must support the company's marketing objectives and also be able to provide a competitive advantage in the global marketplace.

This module considers new product introduction from a strategic and process perspective, and then looks in more detail at the design of strategies for the Manufacturing function.

The approach is both analytical and practical.

On successful completion of this module a student should be able to:

- Within a global context, understand and apply the concept of strategy, the process of setting corporate/company objectives and the application of key strategy analysis tools, understand the effect of different industry environments on business strategies, and appreciate the significance of the linkages between corporate/company, marketing, and manufacturing strategies.
- Appreciate and analyse the imperatives of new product introduction (NPI), recognise the relationship between NPI strategies and business performance, and appreciate the differences between winning and losing strategies.
- Identify and apply key stages of the product development process, with particular emphasis on the involvement of manufacturing and the overall impact of new product introduction on its strategy.
- Within a global context, understand and apply the concepts underpinning the theory of manufacturing strategy, and how a manufacturing strategy can contribute to business performance and competitive advantage.
- Evaluate individual elements of a manufacturing strategy and with this knowledge/capability; be able to apply a conceptual framework or methodology for its development/refinement.
- Demonstrate and explain the capability to potentially improve a company's business performance. This capability will be evident through the successful application to the business simulation and/or assignment case study of theory, knowledge, and appropriate analytical and deductive skills developed during the module. The outcome will be justified improvements to the strategies of the case manufacturing company.

Study Skills and Research Methods

- How to source appropriate literature, library resources, specialised search engines.
- Information sources, literature sources and reviews, critical analysis of published research.
- Writing skills and presentation of material.
- Referencing, plagiarism and copyright.
- Developing research questions and project objectives.
- Research design, its nature content and process.
- Ethical issues relating to the conduct of the research.
- Methods of data collection, including surveys, casework, interviews and questionnaires.
- Quantitative methods of analysis.
- Case study and action research.

This module provides the background in study skills and research methods to enable students to carry out assignments and projects on the Engineering Business Management programme.

On completion of this module the student should be able to:

- Research information relevant to assignment and project topics from a variety of sources.
- Critically evaluate potential research situations and published literature.
- Develop a research design at Master's level.
- Specify appropriate research techniques to implement the research methodology and evaluate their uses and limitations, taking into account ethical issues involved.
- Synthesize a proposal for a Master's project.

Masters Dissertation

The student will be applying and extending skills and knowledge acquired in the taught elements of the course however, the knowledge base required for any particular project will depend upon the specific aims and objectives chosen and on the particular interests of the student.

The project is intended to provide students with the opportunity to demonstrate competence in applying the concepts and skills acquired during the taught part of the course. Students will apply a level of intellectual rigor which is commensurate with the standard of their Master's level programme of study.

The project may be a solution to a practical Industry problem/ requirement or focus on a research topic.

The module will allow investigation and research as core activities, leading to analysis, final summations and competent recommendations. The project will culminate in a comprehensive, thorough and professional report, documenting the conduct, approach and outcomes of the project, further supported with a critical review of the project conduct and management. It is intended that the module gives students an opportunity to 'specialise' in an area that may be interesting, relevant and useful for future prospects and career.

On completion of this module the student should be able to:

- Develop solutions to given problems by the application of appropriate tools and techniques, within a chosen specialism, with professionalism, confidence, and competence.
- Identify, select and review current information resources relevant to a particular problem and justify appropriate problem-solving strategies with respect to resources, tools and techniques.
- Communicate effectively in formal and informal situations both verbally and otherwise with interested parties.
- Develop project management skills and critically evaluate research and problem-solving processes.
- Take account of any legal, social, and ethical issues relating to research and project work.

Master of Business Administration

Master of Business Administration in Finance

At a Glance

Awarding Institution	:	Nottingham University, UK
Modes of Study	:	Part-time (Singapore-based Students)
Duration	:	24 months
Intakes	:	NIL
Commencement & End Date	:	NIL

Overview

These two 100% university-taught MBA courses are designed to help candidates develop an integrated and critical awareness of management and organisations in a global context.

Candidates will also develop knowledge and skills in fundamental management modules before going for specialised elective modules such as Business Intelligence in the Digital Economy to Corporate Finance to align with their professional goals and needs.

Career Opportunities

- Accountancy & Financial Management
- Banking & Financial Services
- Business Development & Consultancy
- Business Operations
- Entrepreneurship
- Financial Analysis (Equities, Credit, and Risks)
- Management
- Sales & Marketing

Admission Criteria

Local Qualifications

Applicants must normally be graduates of an approved University holding a good Honours degree or a relevant professional qualification considered equivalent to a first degree

Candidates are expected to have three or more years of full-time work experience, the majority of which would have been gained since graduating from their first degree.

Minimum Age: 21 years old

English Language Requirement

IELTS 6.5 with no sub-band below 6.0 or equivalent

International Qualifications: https://www.psb-academy.edu.sg/intl-adm/

Course Fees

Part-time

Course Fees	**Singapore-based Students**
Total Course Fee	NIL

Other Mandatory Fees	
Application Fee (New Students)	NIL

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

All fees are subject to annual revision.

Modules

Core:

- Business Economics
- Entrepreneurship and Creativity
- Finance and Accounting
- Leadership, People and Organisational Capability
- Marketing
- Operations Management
- Strategic Management
- Sustainable Decisions and Organisations

Electives:

Choose 4 for MBA	**MBA Finance**	
• Business Intelligence in the Digital Economy • Corporate Finance • International Business • Managing the Human Resource • Portfolio Management and Investment Analysis • Responsible Business: A Strategic Approach • Strategic Market Relations: Building, Managing and Leveraging Market Relationships	**Compulsory for MBA Finance**	**Choose 2 for MBA Finance**
	• Corporate Finance • Portfolio Management and Investment Analysis	• Business Intelligence in the Digital Economy • International Business • Managing the Human Resource • Responsible Business: A Strategic Approach • Strategic Market Relations: Building, Managing and Leveraging Market Relationships

The School of Postgraduate Studies may recommend modules for completion within the published duration. The delivery of modules is subject to change and may not follow the sequence as shown above.

Mode of Assessment

Assessment of this programme includes coursework such as group work, in-class tests, written reports, examinations, and presentations. Assessment methods are subject to the University's revision.

Graduation Requirements

For graduation requirements, please refer here.

Annex | Module Outlines

Business Economics
The economic theory of business provides a range of models and concepts, both at the micro and macro level, for the analysis of business activity to generate key insights into the operation of the market economy. Familiarity with the economic way of thinking about business and the economist's toolkit of principles and models is indispensable for today's successful business practitioner. The aim of the module is to introduce economic theory applicable to business and to enable participants independently to apply the theory to practical issues.

Business Intelligence in the Digital Economy
This module focuses on the key digital technologies that are producing revolutionary change in business right now. Wherever you work – finance, retail, government, manufacturing, consultancy or any service role – your industry and your job is being changed by disruptive technologies as organisations become data-driven. New uses of data are radically changing how firms produce products and services, how they interact with customers and how they partner together. But the change has just started – this module can help you take advantage of the changes to come. We will look at the underlying business ideas which drive and make use of technologies like big data analytics, The Internet of Things, artificial intelligence, social media, Web 2.0, and cloud computing. We will discuss how they are being used by different firms to transform their capabilities, their business models and their performance. We will look at how to use these technologies in business examples, the firms that you are interested in and in your own jobs.

Corporate Finance
The module examines the ethical and practical justifications for the idea that companies should operate in the interests of shareholders and also the counter arguments in favour of a stakeholder perspective. The module then deals in turn with the major financial decisions made in organisations (capital budgeting, capital structure, dividends, mergers, working capital). Decisions are analysed first in the context of well functioning capital markets. Capital market imperfections and behavioural biases on the part of managers and investors are then considered.

Entrepreneurship and Creativity
This module is designed to provide an insight into the nature of entrepreneurship and innovation in theory and practice. Students will be expected to apply the relevant theory presented on the module in a simulated entrepreneurial environment, of which the Ingenuity™ model will be the basis. The model provides students with the opportunity to investigate and experience the processes involved in creativity, alongside the generation, assessment and pitching of entrepreneurial ideas. Students will additionally benefit from significant engagement with experienced entrepreneurs and other practitioners.

Finance and Accounting

This module provides an introduction to the theory and practice of financial accounting and reporting, management accounting and finance. Both commercial and not-for-profit organisations will be considered. Financial reporting is the process of presenting financial (and other) information to a range of stakeholders in order to ensure appropriate accountability and stewardship. Students will be encouraged to consider the need for integrityin financial accounting and reporting, and the potential limitations of regulation and standards. Management accounting is concerned with the preparation and presentation of accounting information to aid managers in their jobs of planning, decision making and control. New and traditional management accounting techniques are analysed in the context of a changing management context with its emphasis on strategy, costing and performance metrics. The content of the module is aimed primarily at managers and not accountants. The finance section emphasises two of the major financial decisions, the investment decision and the financing decision - where the money comes from and how it is best used within the organisation.

International Business

This module reviews firm-based strategies across national borders including international, multinational, transnational and global strategies. Theoretical models of internationalisation processes are reviewed, and advantages / disadvantages of various market entry modes are discussed. Particular attention is paid to the strategies adopted by international firms in their response to host-country requirements. Concepts that influence firm's competitiveness in global industries are discussed (organisational structure, innovation and knowledge management, logistics, strategic international human resource management). This module provides both the theoretical foundation for the analysis of, and the subsequent application of theoretical concepts to, case studies.

Leadership, People and Organisational Capability

This module draws principally on Organisational Behaviour (OB), a field of study that investigates the impact that individuals, groups and collectives, and structures have on behaviour within organisations. The application of such knowledge is oriented towards improving an organisation's effectiveness as well as the personal effectiveness of its people through understanding how people organise and manage work in organisations. It seeks to introduce and develop notions and applications of the management of people in the workplace from both a micro and macro perspective and embraces ideas and practices borrowed from the social sciences of psychology, sociology and anthropology.

Managing the Human Resource

The module aims to develop advanced understanding of human resource management. Core elements of the course includes recruitment and selection, training, performance management, job design, work-life balance and health and safety.

Marketing

The module offers an overview of the nature and practice of marketing at both the strategic and tactical levels. Students will be introduced to a variety of conceptual frameworks and will be expected to apply them in relation to case study companies and their own business experience. Key themes to be addressed include: the nature and role of marketing and marketing management; connecting with customers and building strong brands; shaping and managing the marketing offering; and communicating and delivering value.

Operations Management

The module aims to provide a thorough grounding in key concepts in contemporary operations. It is taught in a manner appropriate to an MBA audience and draws upon the latest management approaches and thinking. Specifically, it aims to develop understanding of: the relevance and importance to organisations of high performance operational capabilities; the key resources - human, organisational and technological - and the fundamental variables in operations management, as well as their interactions; key concepts in the design of effective operational systems for a wide range of environments; frameworks for addressing major issues in managing operations; the integrative nature of Operations Management.

Portfolio Management and Investment Analysis

The module examines the risk and return characteristics of classes of financial securities (equities, bonds, derivatives) and the processes and consequences of combining these securities in portfolios. The traditional mean-variance approach is extended in two ways, first by recognising that return distributions may not be well described by mean and variance, and secondly by examining the possibility that investors take into account non-financial, ethical concerns in their portfolio building decisions. Any finance module, and a portfolio management module in particular, needs, post 2008, to reflect (and to reflect on) the gap between textbook treatments and "the real world". Standard textbook treatments offer "the efficient markets hypothesis", "the capital asset pricing model" and "the Black Scholes model" in a relatively uncritical way, but post 2008 these models have been ridiculed in the financial press as "unrealistic". This major difference of opinion is examined in the module.

Responsible Business: A Strategic Approach

This module introduces the way that social and environmental problems are incorporated into firm strategies. The course offers students the intellectual skills and knowledge necessary to enable them to examine the antecedents and consequences of CSR and especially, its strategic implications. Content includes analysis of the role of business in society, the global social and environmental issues that firms encounter, and firm-level strategies to address such issues. The module also discusses the theories behind the motives put forward for engaging in socially responsible behaviour, and the impact of CSR strategies on firm performance and behaviour, reporting and governance.

Strategic Management

The objective of this module is to develop an understanding of how organizations develop strategies to achieve and sustain a competitive advantage. Strategy has been variously defined but a working definition is the: “determination of the long-term goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goals.” (Alfred Chandler). Two questions are central to strategy: “What business should we be in?” and “How should we compete?”

Strategic Market Relations: Building, Managing and Leveraging Market Relationships

Why focus on business-to-business marketing? It is believed that between 50% and as much as 80% of all marketing related jobs and associated economic activity are in business markets. New perspectives in business marketing have emerged that focus on intangible resources, the co-creation of value, and relationships in networks of organisations rather than the traditional buyer-seller dyadic view of markets and marketing. The aim of this module is to provide an introduction to the main theoretical and managerial concepts and issues in the area of business-to-business marketing and strategic market relations. We explore the complex dynamics of networked relationships between buying and selling organisations. Such networks offer organisations the opportunity to learn and create value in novel and innovative ways. However, they also constrain the actions of individual organisations in the network. Thus, strategic market relations require firms to understand how to build, manage, and leverage their market relationships.

Sustainable Decisions and Organisations

The module aims to enable students to develop business and management skills and to capture an integrated view of their learning across their MBA programme. It combines substantive lectures; 'Business Briefings' in the form of practitioner presentations pertinent to the Case; and experiential learning through a 'live' Case involving group work.

Postgraduate Diploma in Cyber Security (E-Learning)

At a Glance

Awarding Institution	:	PSB Academy
Modes of Study	:	Full-Time (100% e-learning)
Duration	:	9 months
Intakes	:	NIL
Commencement & End Date	:	NIL

Overview

The Postgraduate Diploma in Cyber Security provides students with the knowledge and necessary skillset in several core areas of cyber security. The programme aims to provide comprehensive and deep understanding of cyber security. The modules have been carefully selected to cover the knowledge highly in-demand in cyber security industry.

The programme will provide an opportunity to recent graduates, early and mid-career professionals in any discipline to move into Cyber Security. The course is designed to equip its students with all the necessary IT/computer science background and allow them to work at a professional level and develop a range of skillsets in areas such as computer networking, ethical hacking, computer forensics investigations, information security management, linux shell programming and IoT fundamentals and Security. The course will also build foundations for further study at MSc level.

Admission Criteria

Local Qualifications

Bachelor's Degree from a recognised institution.

Mature candidate route (30 years old and above) with a minimum of 8 years of work experience

Minimum Age: 18 years old

English Language Requirement

- IELTS with an overall score of 5.5 with no individual band score less than 5.5; or
- GCE O-level English (Grade 1 to 6) or equivalent; or
- Pearson Test for English (PTE-A) test score of 42; or
- TOEIC with a minimum score of 605; or
- Medium of instruction or company certifying letter; or
- Completion of PSB Academy's Certificate in Academic English; or
- Academic certification from Public Higher Education Institution, PEI or professional institute where English is the sole medium of instruction.

International Qualifications: https://www.psb-academy.edu.sg/intl-adm/

Course Fees

Full-time

Course Fees	Singapore-based Students	International Students
Total Course Fee	NIL	NIL
Other Mandatory Fees		
Application Fee (New Students)	NIL	NIL

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

All fees are subject to annual revision.

Modules

- Information Security Management
- Computer Networking and Network Defence
- Linux Shell Scripting
- Ethical Hacking and Penetration Testing
- Computer Forensics Investigations
- Internet of Things: Fundamentals and Security

The School of Postgraduate Studies may recommend modules for completion within the published duration. The delivery of modules is subject to change and may not follow the sequence as shown above.

Mode of Assessment

Assessment of this programme includes coursework such as group work, in-class tests, written reports, examinations, and presentations.

Graduation Requirements

For graduation requirements, please refer here.

Annex | Module Outlines

Information Security Management
This module covers the foundational knowledge in information security management. It will introduce the student to commonly used frameworks and methods and explore critically the suitability and appropriateness of these for addressing today's organisational security needs.

Computer Networking and Network Defence
This module concentrates on building a firm foundation for understanding computer networking and enables students to appreciate recent technology development. It prepares students on network security technologies and operations to attain Defense-in-Depth network security preparedness. It covers the protect, detect and respond approach to network security.

Linux Shell Scripting
This module focuses on shell scripting techniques. Students will learn how to analyze, design, write, test, and debug shell scripts.

Ethical Hacking and Penetration Testing
This module introduces the concepts of Ethical Hacking and gives the students the opportunity to learn about different tools and techniques in Ethical hacking and practically apply some of the tools.

Computer Forensics Investigations
This module provides students with computer forensic and professional investigative processes. Students will learn about tools and techniques for gathering evidence, analysing data and writing investigation reports, as well as to get good understanding of the related laws and regulations.

Internet of Things: Fundamentals and Security
The module provides an opportunity for students to focus their studies in the area of Internet of Things (IoT) within the field of Cyber Security which may be aligned to their future career interests. The module embodies principal elements that students need for understanding IoT from both a technical perspective and an industry point of view.

Doctor of Philosophy

At a Glance

Awarding Institution	:	University Canberra
Mode of Study	:	Part-time (Singapore-based Students)
Duration	:	36 months
Intakes	:	NIL
Commencement & End Date	:	NIL

Overview

The Doctor of Philosophy, is an internationally recognised research degree that prepares graduates for advanced professional, academic and industry careers. If you are ready to shape knowledge, influence your field and create new understanding, UC's Doctor of Philosophy, offers a structured and supportive path to help you achieve significant research outcomes with confidence.

Across four years of full-time study, you will work under expert academic supervision to design and execute an independent research program. You will produce a written dissertation, a portfolio of published works or a creative work supported by an exegesis. Your first year includes up to 12 credit points of coursework, designed to strengthen your foundations in research theory, methodology and critical thinking.

Career Opportunities

- Academic Teaching & Education
- Research & Innovation
- Strategic Management
- Business Advisory & Consultancy
- Entrepreneurship
- Senior Policy & Strategic Planning
- Industrial Relations & International Diplomacy

Admission Criteria

An applicant seeking admission to the PhD program will:
(a) Have a degree of bachelor with first or upper second class honours awarded by an Australian university or other recognised higher education institution;
(b) Provide evidence of research training and aptitude for research;
(c) Meet the University's minimum English proficiency requirements for entry into higher degree by research courses;
(d) Satisfy any requirements for admission to the relevant specialisation approved by Academic Board (e.g. some specialisations require higher IELTS scores); and
(e) Satisfy any additional requirements specified for admission of the particular applicant, consistent with University policy
An applicant who does not satisfy (a) will not be admitted to the program unless the University is satisfied, in accordance with University policy, that the applicant:
1. Holds an award or has completed work that has first or upper second honours equivalence; and
2. Has attained significant research ability and professional performance

Minimum Age: 21 years old

English Language Requirement

IELTS or equivalent of 6.5 with no band score below 6.0.

Course Fees

Part-time

Course Fees	**Singapore-based Students**
Total Course Fee	NIL

Other Mandatory Fees	
Application Fee (New Students)	NIL

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

All fees are subject to annual revision.

Modules

Doctoral Thesis R FT

Mode of Assessment

Assessment of this programme is research based. Submission of a 100,000-word thesis for external written examination by three (3) independent, qualified research experts in the field.

Graduation Requirements

For graduation requirements, please refer here.

Annex | Module Outlines

Doctoral Thesis R FT

Candidates will conduct original research that significantly contributes to knowledge or its application within a specific area of study. This research will involve a comprehensive literature review, a systematic approach to acquiring knowledge, and the preparation of a substantial, well-organized dissertation. The dissertation will demonstrate a deep understanding of the current state of knowledge in the area of inquiry and its broader context within the field. The final output will be a research thesis, not exceeding 100,000 words, submitted for external examination according to the Higher Degree by Research Procedure.

Doctor of Philosophy

At a Glance

Awarding Institution	:	University Canberra
Mode of Study	:	Full-time ((International & Singapore-based Students)
Duration	:	48 months
Intakes	:	NIL
Commencement & End Date	:	NIL

Overview

The Doctor of Philosophy, is an internationally recognised research degree that prepares graduates for advanced professional, academic and industry careers. If you are ready to shape knowledge, influence your field and create new understanding, UC's Doctor of Philosophy, offers a structured and supportive path to help you achieve significant research outcomes with confidence.

Across four years of full-time study, you will work under expert academic supervision to design and execute an independent research program. You will produce a written dissertation, a portfolio of published works or a creative work supported by an exegesis. Your first year includes up to 12 credit points of coursework, designed to strengthen your foundations in research theory, methodology and critical thinking.

Career Opportunities

- Academic Teaching & Education
- Research & Innovation
- Strategic Management
- Business Advisory & Consultancy
- Entrepreneurship
- Senior Policy & Strategic Planning
- Industrial Relations & International Diplomacy

Admission Criteria

Applicants who meet the criteria for Advanced Standing-Doctor of Business Administration (University of Canberra) as follows:
Successful completion of 24 cp of coursework from the Doctor of Business Administration (University of Canberra) program including:
01 Research Fundamentals PG 6cp
02 Reading and Critiquing Literature PG 6cp
03 Research Design PG 6cp
04 Current Research Issues in Business PG 3cp
05 Professional Doctorate Research Proposal B PG 3cp
a) Successful completion of an introductory and confirmation seminar
b) Completion of the self-paced Research Integrity Module; and
c) Successful completion of an academically assessed transfer seminar, recommending transfer to the Doctor of Philosophy within 24 months of candidature commencing in the Doctor of Business Administration (University of Canberra) (in accordance with current Higher Degree Research (HDR) Policy).

Minimum Age: 21 years old

English Language Requirement

IELTS or equivalent of 6.5 with no band score below 6.0.

Course Fees

Full-time

Course Fees	Singapore-based Students	International Students
Total Course Fee	NIL	NIL
Other Mandatory Fees		
Application Fee (New Students)	NIL	NIL

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

All fees are subject to annual revision.

Modules

Doctoral Thesis R FT

Mode of Assessment

Assessment of this programme is research based. Submission of a 100,000-word thesis for external written examination by three (3) independent, qualified research experts in the field.

Graduation Requirements

For graduation requirements, please refer here.

Annex | Module Outlines

Doctoral Thesis R FT
Candidates will conduct original research that significantly contributes to knowledge or its application within a specific area of study. This research will involve a comprehensive literature review, a systematic approach to acquiring knowledge, and the preparation of a substantial, well-organized dissertation. The dissertation will demonstrate a deep understanding of the current state of knowledge in the area of inquiry and its broader context within the field. The final output will be a research thesis, not exceeding 100,000 words, submitted for external examination according to the Higher Degree by Research Procedure.

Bachelor of Science (Biotechnology)

At a Glance

Awarding Institution	:	La Trobe University, Australia
Modes of Study	:	Full-time (International & Singapore-based Students) Part-time (Singapore-based Students)
Duration	:	28 months for full-time pathway 48 months for part-time pathway
Commencement & End Date	:	NIL

Overview

The Bachelor of Science (Biotechnology) aims to train students in the key elements of biotechnology and manipulation of molecular biological data to quality individuals to be able to work in nascent biotechnology enterprises. Students will study the biochemistry related to biomembranes, protein structure and function, bioinformatics and gene structure and function. The practical work includes hands on experience in biochemistry and molecular biology techniques, allowing students to develop general laboratory skills in experimental design and data interpretation.

Career Opportunities

- Medical Technologist
- Product Specialist
- Quality Control Supervisor
- Scientific Writer / Editor

Progression Pathway

Upon completion of this Bachelor's Degree course, graduates may advance to their Honours year with La Trobe University or a local or overseas Master's Degree course (subject to the university's approval).

Admission Criteria

Local Qualifications

- GCE 'A'-Levels minimum 7 in total for the best 3 H2 subjects or, STPM 8 in total for the best 3 academic subjects, and min. grade C for Chemistry; OR
- Local Science-related diploma in relevant areas; OR
- Local Engineering diploma with Calculus Mathematics background and has a 'C' average grade may be considered; OR
- PSB Academy Foundation Diploma in Life Sciences with an average Pass, and with a Pass in each of the units; OR
- Advanced standing may be given for approved Diploma courses upon a final Diploma result.

All applications are subject to approval by La Trobe University.

Minimum Age: 16 years old

English Language Requirement

- GCE 'O' level English grade C or above or equivalent; OR
- IELTS (Academic) score of 6.0 with no individual band score less than 6.0; OR
- Pearson Test of English (Academic) (PTE) [Test before 1 Dec 2020] - Overall score of 50 with no communicative skill score less than 50; OR
- Pearson Test of English (Academic) (PTE) [Test after 1 Dec 2020] - Overall score of 46 with no communicative skill score less than 46; OR
- TOEFL Internet-based Test (iBT) - 64 with 13 in Reading, 12 in Listening, 18 in Speaking and 21 in Writing; OR
- Cambridge Certificate of Advanced English (CAE) / Cambridge Certificate of Proficiency in English (CPE) - Score of 169 with no less than 169 in any component

English language test scores must be less than two years old from the commencement date of the course at La Trobe University. Details of the policy and information on any other English tests accepted by the University can be found at: https://www.latrobe.edu.au/study/apply/international/requirements

International Qualifications:

https://www.psb-academy.edu.sg/intl-adm/

Course Fees

Full-time & Part Time

Course Fees	Singapore-based Students	International Students
Total Course Fee (24 Modules)	NIL	NIL
Other Mandatory Fees		
Application Fee (New Students)	NIL	NIL
Student Development and Administration Fee (New Students)	NIL	NIL

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

All fees are subject to annual revision.

Modules

Academic Year 1 Major Modules

- Big Ideas in Science: Life, the Universe and Everything
- Biology of Cell and Organism
- Chemistry 1A
- Chemistry 1B
- Human Biosciences A
- Making Sense of Data

Academic Year 1 Elective Modules

- Foundations of Biomedical Science
- Mathematical Applications in Biology
- Infections, Pandemics and Epidemics

Academic Year 2 Major Modules

- Career Options and Professional Identity
- Introduction to Biochemistry and Molecular Biology
- Metabolic Biochemistry and Cell Biology
- Molecular Genetics
- Pharmacology B

Academic Year 2 Elective Modules

- Human System Physiology A
- Pharmacology A

Academic Year 3 Major Modules

- Advanced Biochemistry and Medical Biology Laboratory Course
- Advanced Topics in Biochemistry and Cell Biology
- Applications of Biomedical Science
- Clinical Biochemistry and Haematology

- Human Pathophysiology
- Molecular Genetics and Genomics
- Molecular Genetics and Genomics Laboratory Course
- Science Project

Mode of Assessment

Assessment of this programme may include assignments, tests, projects, reports, lab work and final examinations.

Graduation Requirements

For graduation requirements, please refer here.

Annex | Module Outlines

Advanced Biochemistry and Medical Biology Laboratory Course

In this practical based module, students will gain experience in current techniques related to molecular and medical cellular biology, including functional assays of apoptosis, transfection and fluorescent microscopy, immunofluorescent microscopy and an integrated practical where students clone and express a chimeric protein.

Advanced Topics in Biochemistry and Cell Biology

Biochemistry is central to most studies in biology and life sciences and is directly related to medical and agricultural research and biotechnology. In this module, students will extend previous knowledge gained from their biochemistry modules related to gene expression, protein chemistry, bioinformatics, gene structure and function and relate them to a cellular biology context. Students will also study the molecular events of cell life and death, molecular events of cellular biogenesis, cell signalling and applications of biochemistry.

Applications of Biomedical Science

In this module, students will explore various applications of the biomedical science they have learned throughout their degree. Particular emphasis will be placed on drug development, testing and trials as well as forensic biology applications. Working in teams, students will further develop their analytical and problem-solving skills and their ability to communicate scientific findings as evidence to support a position or argument.

Big Ideas in Science: Life, The Universe and Everything

The big ideas of science are a set of cross-cutting concepts that are fundamental to the understanding of the world around and how science works. In this module, students will be introduced to these concepts, which link seemingly different phenomena via fundamental principles and laws of nature and form the basis of the major scientific disciplines. Using cutting-edge research as examples, students will see how scientific evidence is produced, and how that can lead to controversy, conflict and scientific progress.

Biology of Cell and Organism

This module introduces biology to students by discussing units of ever-increasing size and complexity. The module first begins with molecules and cells before proceeding to tissues and organs in plants and animals, followed by how these units cooperate in the whole organism. The topics covered include cell and molecular biology, structure and function of animal and plants, mendelian genetics as well as biological principles. The practical component will focus on biological observation, recording skills and data interpretation, and introduces several biological disciplines (e.g. microscopy, microbiology, biochemistry and physiology).

Career Options and Professional Identity

In this subject, students will explore the range of career options for graduates working in science and science-related professions, and learn about the future of the Science, Technology, Engineering and Mathematics (STEM) workforce locally and globally. Through a series of workshop activities and assessment tasks, students will explore the importance of ethical conduct when working as a scientifically literate professional and will create a portfolio where they reflect on their professional identity, knowledge base and skillset for a range of job types. This subject addresses La Trobe's Global Citizenship Essential which entails a deep appreciation of how we live in an interconnected world, being able to recognise the global context of concepts, act across cultures and boundaries, and work with diverse communities, now and in the future.

Chemistry 1A

This module aims to expand student knowledge in the areas of laboratory safety, stoichiometry, atomic and molecular structure, chemical equilibrium, chemical thermodynamics and kinetics and fundamentals of organic chemistry. Topics will include chemical hazards and the safe handling of chemicals such as acids and bases, stoichiometric relationships and concentrations, introduction to atomic and molecular structure, introduction to organic and functional group chemistry, chemical equilibrium for gas and solution phase reactions, acids and base reactions, chemical thermodynamics and chemical kinetics.

Chemistry 1B

In this module, students will be introduced to chemical hazards and the safe handling of inorganic and organic chemicals. Topics will include the chemistry of carbon compounds, alkanes, alkenes, alkynes, aromatic compounds, halides, phenols, ethers, nitro compounds, amines, aldehydes, ketones and carboxylic acids. Stereochemistry and its implications, reaction mechanisms of organic and systematic chemical identification of organic molecules are also introduced. The practical component will deal with the determination of alcohol content in wine, preparation of Aspirin, TLC analysis of analgesics drugs, molecular models and stereochemistry, relative rates of electrophilic aromatic substitution, the solubility and acid-base properties of organic compounds and functional group tests.

Clinical Biochemistry and Haematology

This module addresses the commonly encountered pathology tests in the two major clinical pathology areas of haematology and biochemistry. Topics include blood cell morphology in the normal physiological state and in disease; full blood examination (FBE); leukaemia, haemoglobinopathies; haemostasis; drug-induced blood dyscrasias; and introduction to blood group serology. The clinical biochemistry component encompasses serum components, enzymes, proteins, lipoproteins and other components of diagnostic interest such as bilirubin, sugars, minerals and blood gases. Numerous case studies will be examined with a view to developing the analytical skills of the student. Discipline knowledge and change management skills will be further applied in the development and proposal of novel ideas designed to bring about improvements in diagnosis, service, quality or efficiency in clinical pathology environments.

Foundations of Biomedical Science

This module introduces students to fundamental concepts for their future studies in biomedical science. These include the evidence-based and evolving nature of biomedical science and the important role of data in its evolution. Students will be encouraged to develop skills in quantitative literacy and apply those skills to solve problems. Topics covered will include the emergence of evidence-based medicine, quantitative units in a biological context, conventions in describing and presenting data and an introduction to using data to solve problems. Students will also establish an e-portfolio to encourage development of metacognition and reflection as they develop as biomedical scientists.

Human Biosciences A

This module introduces students to the anatomical organisation of the body and the basics of cell structure and function. The fundamentals of the nervous and endocrine systems will then be explored in the context of mechanisms of physiological control and homeostasis. This information will provide the foundation for the study of the major organ systems of the body which includes the respiratory, cardiovascular, renal, digestive, reproductive, skeletal muscle and immune systems. The module will conclude with the basics of nutrition and metabolism which integrates many of the topics covered throughout the subject.

Human System Physiology A

In this blended module, students will gain knowledge in systems physiology, which includes homeostasis, membrane dynamics, communication and integration, the nervous system, muscle tissue and endocrinology. The detailed online resources will be supported by interactive lectures and a comprehensive program of enquiry-based workshops.

Human Pathophysiology

In this module, students will examine disorders which may be experienced by individuals over the life-span, emphasising the basic pathological processes that underlie diseases and the risk factors and contributing causes of disorders. General pathological processes will be discussed, with emphasis on disturbed function, adaptation to injury, inflammation, tissue healing, immunological disorders, neoplasia, fluid imbalance, thrombosis, embolism and vascular disorders. In addition, specific pathological conditions of body systems such as cardiovascular, respiratory, nervous, gastrointestinal and skeletal systems along with diabetes will also be addressed. Students will consolidate and apply their knowledge of pathophysiology by communicating a disease state in authentic format to scientific peers and non-expert audiences.

Infections, Pandemics and Epidemics

Infectious diseases, both new and ancient, continue to threaten wellbeing by causing localised, epidemic or pandemic disease outbreaks. In this module, students will study into selected microorganisms which will used for description and comparison. The module will also focus on the natural habitat of the organisms (reservoirs of infection), the ways in which humans can encounter the organisms (routes of infection) and the strategies available at the individual, community and global levels to prevent disease or cure diseased for an infected patient.

Introduction to Biochemistry and Molecular Biology

Biochemistry and Molecular Biology are concerned with the function of biological systems at the molecular level. They are central to most studies in biology and life sciences and are directly related to biomedical research and biotechnology. In this module, students are introduced to gene structure and function, DNA replication, transcription and translation; techniques in molecular biology; bioenergetics; and protein structure and function. The practical work includes hands-on experience in molecular biology techniques (including PCR, analysis of recombinant DNA and techniques in expression of proteins in heterologous hosts), spectrophotometric methods and enzyme kinetics.

Making Sense of Data

This subject introduces students to modern data analytics, visualisation, and statistics. It equips students with the skills required to take advantage of powerful computing for the analysis and visualisation of complex data. These skills are used to solve problems in areas such as the biological sciences, medical sciences, agricultural sciences, nutrition, health sciences, education, and business. Students will become familiar with data visualisation and computing, descriptive statistics, statistical modelling, and data-based decision making. Using statistical computing packages is an integral part of this subject.

Mathematical Applications in Biology

In this module, students will be introduced to how mathematical models are used in biological, biophysical sciences with emphasis insight into how models may be derived from biophysical assumptions. A small but representative range of biophysical applications is investigated and the strengths and limitations of models to make predictions about ecological sustainability are explored. The module is delivered mostly online and learning resources such as lecture materials will be made available. Students meet one hour per week for a problem-solving class to work through problem sets, designed to strengthen basic mathematical skills. Considerable use will be made of spreadsheets as a tool for understanding mathematical models and performing calculations.

Metabolic Biochemistry and Cell Biology

Biochemistry is concerned with the function of biological systems at the molecular level. It is central to most studies in biology and life sciences and is directly related to biomedical research and biotechnology. In this module, students will be introduced to cell biology and cell metabolism, study the generation of energy in cells through the oxidation of carbohydrates and lipids; the formation of ATP, the energy currency of cells; lipids, cellular membranes and compartmentation; and the signalling processes that co-ordinate and regulate cellular activity. The practical exercises illustrate some basic experimental and data analysis skills and reinforce concepts in metabolism and cell biology.

Molecular Genetics

This module introduces students to concepts and methods in molecular and human genetics. The topics covered include: DNA and RNA structure, DNA replication, chromosome structure, transposable elements, transcription, translation, regulation of gene expression, recombination, DNA damage and repair, molecular biology and recombinant technologies, modes of inheritance, single and multigene diseases, epigenetic diseases, diagnosis of genetic diseases, gene therapy, personalised medicine, biotechnology, applications of genetic model organisms, bioinformatics, DNA in forensic sciences, synthetic life, human evolution and variation.

Molecular Genetics and Genomics

This module introduces students to advanced concepts in modern molecular genetics and genomics. The topics covered include the genetic regulation of embryonic development and genetic disease; stem cells and gene therapies; cancer and personalised medicine; use of model organisms for studying human genetic diseases, including mouse and fruit fly models; immuno-genetics; genomics, bioinformatics and gene therapy.

Molecular Genetics and Genomics Laboratory Course

Genetics and genome science hold the keys to understanding life on earth, human development, health and disease at the molecular level. This module introduces students to advanced methods in experimental molecular genetics. The topics covered include the molecular regulation of embryogenesis, human clinical genetics, bioinformatics, human variation, forensic science, genomics applications and ethical implications. Students will take part in an ethics debate on current genetic topics, receive advanced training in techniques essential for employment in biotechnology and medical and research laboratories. This includes safe laboratory practice, light microscopy, micro-pipetting, handling dangerous chemicals, laboratory record keeping and scientific report writing.

Pharmacology A

In this module, students will be introduced to physiological control and the body systems involved. The topics will cover receptor kinetics, nerve impulse propagation and transmission, the operation of the nervous and endocrine systems (with special emphasis on the autonomic nervous system) and the pharmacology of drugs acting at synaptic and neuromuscular sites. The practical component will introduce the use of physiological equipment, and ethical considerations for animal and human experimentation.

Pharmacology B

This module will introduce how variation in human molecular genetics may affect pharmacokinetics and pharmacodynamics of drugs. There will be examples focused on mutations associated with metabolising and excreting drugs and potential for toxicity. Immune responses from a cellular and molecular perspective will also be introduced, incorporating innate immunity, inflammation, chemical cascades, adaptive immunity and cells of the immune system. Students will also explore the capacity for clonal variations in acquired immunity-based pharmacogenetics.

Science Project

In this module, the student undertakes a semester-long research or development project related to his or her major studies under the guidance of an academic supervisor. The student will solve a given problem with creativity and imagination and will develop new ideas about an aspect of their chosen field and how to manage and communicate these. They will achieve this by applying theory, locating new knowledge and synthesising it along with their results into a project report. Many problems in science are multi-disciplinary, thus students will experience the needs and benefits of collaboration and networking across discipline boundaries and thus gain insight into the process of working as a scientist.

Bachelor of Environmental and Occupational Health and Safety (Top-Up)

At a Glance

Awarding Institution	:	The University of Newcastle, Australia
Modes of Study	:	Full Time & Part Time
Duration	:	Full Time: 16 months Part Time -24 months
Commence and End Date	:	NIL

Overview

The Bachelor of Environmental and Occupational Health and Safety programme is a unique Degree combining environmental management and emerging EOHS issues effectively.

This Degree course by The University of Newcastle, Australia exposes you to the essentials in the management and practice of environmental health and safety management. Graduates can assume professional roles in the management and practice of environmental health and safety management by applying knowledge acquired in this programme. The programme is designed for students and working adults who demonstrate that they have already achieved the equivalent of the first year of study through previous tertiary education.

Professional Recognition

This programme was developed in response to a demand for professionals in Singapore who can access both areas.

- Fully accredited by the Institution of Occupational Safety and Health (IOSH), the world's largest professional health and safety organisation
- Recognised by the Ministry of Manpower (MOM) in its qualifying criteria as a requirement in applying to be a Workplace Safety & Health Officer (WSHO)
- Complimentary student IOSH membership for all new incoming students

Admission Criteria

Local Qualifications

- Diploma in Health, Science or Engineering from a local Polytechnic or other recognised institutions; OR
- Diploma in Industrial Engineering from PSB Academy; OR
- Other Diploma or equivalent qualification that would be assessed on a case by case basis.

Note that, in order to be considered for admission, all previous qualifications must have been completed within eight years prior to lodging an admission application. Applicants with qualifications that are over eight-years-old or with other relevant diploma qualifications may also apply, but will be required to submit a detailed resume outlining work experience and will be assessed on a case-by-case basis by The University.

Minimum Age: 16

English Language Requirement

- IELTS overall minimum of 6.0 with no subtest result below 6.0

Course Fees

Part-time

Course Fees	**Singapore-based Students**
Total Course Fee (Academic Year 2 Entry)	NIL
Other Mandatory Fees	
Application Fee (New Students)	NIL

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

All fees are subject to annual revision.

Modules

- Bioscience for EOHS
- Environmental Control Practice
- OHS Practice
- Occupational Health
- Hygiene and Toxicology I
- Ergonomics for OHS
- Occupational Safety
- EOHS Management I
- Environmental Impact Assessment
- Industrial Ecology for EOHS
- Epidemiology and Environmental Health
- Hygiene and Toxicology II
- Research Methods in EOHS
- International Perspectives on EOHS
- EOHS Law
- Risk Assessment and Management

Mode of Assessment

Assessment of this programme may include assignments, tests, projects and final examinations.

Graduation Requirements

For graduation requirements, please refer here.

Annex | Module Outlines

Environmental Control Practice

This module overviews sources of and control strategies for air, water, and soil pollution; waste management and waste minimisation; drainage and flood control; pests and pest control, and sanitation. Relevant legislation is referred to in context.

Environmental Impact Assessment

This module is designed to introduce students to environmental impact assessment and to provide theoretical and practical education in this field. The focus is on the rationale and methodology of integrated environmental impact assessment (EIA), including consideration of the relevant biophysical, social, cultural, economic, and human health aspects of development proposals, programmes and policies. Included are aspects of tendering for and budgeting of EIA projects.

Industrial Ecology for EOHS

This module starts by probing some of the key properties of ecosystems and then transitions to interpreting workplace and industrial settings in an ecological sense. Through lectures, case studies and group work various operations will be examined with a view to suggesting how efficiency, safety, and the economic bottom line can all be improved, and how environmental impacts can be reduced by the application of the principles of ecology.

OHS Practice

This module focuses on experiential learning and Problem-Based Learning (PBL) techniques. Students will gain knowledge on a wide variety of occupational health and safety problems through real-time industrial visits, videos of industrial visits and a range of PBL exercises covering major occupational groups and hazards.

Occupational Health

This module provides students with an understanding of the occupationally induced injuries and diseases affecting each body system. Through the study of occupational disease and the occupational effects on specific organ systems (such as respiratory disease, cancer, stress, back problems), students will gain an appreciation of the OHS problems of specific groups of workers.

Hygiene and Toxicology I

This module develops a conceptual framework for toxicology and knowledge and skills relevant to the practice of occupational and environmental hygiene in hazard identification, risk assessment and control of the environment. Topics include: toxicological terminology; toxico-kinetics and toxico-dynamics; toxicological testing methods; toxicity of specific groups of industrial chemicals; environmental and biological monitoring; setting and using hygiene standards; methods for monitoring environmental pollutants, including noise; strategies for the control of environmental pollutants; and reporting on hygiene surveys.

Ergonomics for OHS

This module introduces the student to the scope of ergonomics and the application of ergonomic principles to workplace design and work organisation. It includes physiological, anatomical, psychological, environmental and management perspectives on work capacity, workplace design and work organisation.

Occupational Safety

This module considers the fundamental principles and practice of chemical, fire and explosion, electrical, machinery and construction safety, with reference to Singapore OHS legislation.

EOHS Management I

This module considers the theories and ideas underlying management and organisational behaviour. Supporting tutorials provide exposure to the more practical aspects of work in organisations. The module is organised to give a general introduction to human behaviour and management, including an examination of individual behaviour followed by the study of groups and group processes, the organisation, management, and management practices.

Epidemiology and Environmental Health

This module introduces students to epidemiology as a way in which new knowledge in EOHS is gained and provides the tools by which the EOHS literature can be critically evaluated. It also explores the relationship between the environment and human disease and looks at specific environmental pollutants and health.

Hygiene and Toxicology II

This module enhances the knowledge and skills acquired in Hygiene & Toxicology I and relates them to the practice of occupational and environmental hygiene in the field, to the toxicological evaluation of chemicals and to hazardous substances risk assessment.

Research Methods in EOHS

This module introduces students to the nature of research and how to start conducting research. Students work in small groups to develop a research question and hypotheses in an organised and systematic format.

International Perspectives on EOHS

This module considers international perspectives on environmental and occupational health and safety. In particular, it provides an international context for examining the scope of EOHS, the impact of global economic and political climates on EOHS developments, and explores the functions and activities of international organisations, such as ILO, WHO and Greenpeace.

EOHS Law

This module provides the essential legal framework for students to understand how the law functions, both as a tool to improve the environment and health and safety, and as part of the background against which other techniques for improvements must operate. It also provides a sound knowledge of the specific discipline of law as it relates to environmental and occupational health and safety and outlines the major pieces of legislation governing environmental planning, environmental and public health, and occupational health and safety. It assists students in understanding the role of decision-making in EOHS and contributes to students' analytical, problem solving and written communication skills.

Risk Assessment and Management

This module develops knowledge and skills in risk assessment and management, as required for effective occupational health, safety & environment practice. It includes the application of adult learning principles to the development of EOHS training; accident theories in the analysis of accident causation; accident investigation techniques; inspections and audits, and practical approaches to risk assessment and risk management, including disaster and emergency planning.

Bachelor of Mechanical Engineering (Honours)

At a Glance

Awarding Institution	:	The University of Newcastle, Australia
Modes of Study	:	Full-time (International & Singapore-based Students)
Duration	:	32 months
Commencement & End Date	:	NIL

Overview

Mechanical Engineering is considered the broadest of all engineering disciplines. It is concerned with the design, manufacture, operation and maintenance of mechanical devices, equipment and systems.

Develop a sound understanding of the design, manufacture, operation & maintenance of mechanical devices, equipment & systems. The Bachelor of Mechanical Engineering Degree awarded by the University of Newcastle, Australia delivers a sound introduction to the fundamental principles of engineering science and practice. Concentration on underlying principles and development of learning ability prepare graduates for a wide range of career options where they can continue to expand their skills.

Admission Criteria

Local Qualifications

- GCE A-Levels (Minimum 3 subjects in H2 level or 2 subjects at H2 level and 2 subjects at H1 level); OR
- 3-year Diploma from local Polytechnic; OR
- PSB Academy Diploma in Mechanical Engineering Technology; OR
- Other Diploma or equivalent qualification would be assessed on a case by case basis

Entry requirements for international students can be found at https://www.newcastle.edu.au/international/study-with-us/undergraduate/undergraduate-entry-requirements

Minimum Age: 16

English Language Requirement

All Applicants must demonstrate that they meet the University's English proficiency requirement. Further information regarding English language proficiency requirements can be found at the English Language Proficiency for Admission Policy.

Applicants who do not speak English as a first language must demonstrate that they meet the University's English proficiency requirement through one of the following methods:

English Language Tests

1. **GCSE - English Language or Literature**
   IGCSE - A level English or Humanities
   Overall Score: Minimum Grade C
2. **IELTS Academic**
   Overall Score: 6.0
   Section minimums are: 6.0 R/L/S/W
3. **TOEFL IBT**
   Overall Score: 60
   Minimum Individual Skills Test: R: 13, L: 12, S: 18 and Writing: 21
4. **PTE Academic (GSE)**
   Overall Score: 50
   Section Minimum: 54
5. **PSB Academy Certificate in Academic English (CAE)**
   Students must obtain 60% or more in each of the 4 exams. Each of the 4 exams is of equal weighting.

English language test scores must be less than 2 years old at the date of application to the University of Newcastle.

The English Language Proficiency for Admission Policy will outline in detail what UON's requirements are for admission. Applicants should review the Flowchart and Requirements tables (accessible in from the Policy - Associated Information) for additional information on the variety of qualifications and/or recognised English exams will satisfy the requirements.
International Qualifications: https://www.psb-academy.edu.sg/intl-adm/

Course Fees

Full-time

Course Fees	**Singapore-based Students**	**International Students**
Total Course Fee	NIL	NIL
Other Mandatory Fees		
Application Fee	NIL	NIL
Student Development and Administration Fee (New Students)	NIL	NIL

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

All fees are subject to annual revision.

Modules

Core Modules - 280 units	Units
• Fundamentals of Engineering Mechanics	10
• Introduction to Electrical Engineering	10
• Introduction to Procedural Programming	10
• Introduction to Professional Engineering	10
• Mathematics for Engineering, Science and Technology 1	10
• Mathematics for Engineering, Science and Technology 2	10
• Introduction to Mechanical Engineering	10
• Ingineering Materials 1	10
• Engineering Risk and Uncertainty	10
• Engineering Fluid Mechanics	10
• Modelling and Control	10
• Sustainable Engineering Practice	10
• Calculus of Science and Engineering	10
• Mechanical Engineering Design 1	10
• Dynamics of Machines	10
• Mechanics of Solids 1	10
• Engineering Computations 2	10
• Managing Engineering Projects	10
• Mechanical Engineering Design 2	10
• Materials Science and Engineering 2	10
• Heat Transfer	10
• Thermodynamics	10
• Fluid Mechanics 2 and CFD	10
• Engineering Complexity	10
• Mechanics of Solids 2 and FEA	10
• Mechanical Engineering Project A	10
• Mechanical Engineering Project B	20

Elective Pathway - 40 units of the following:	Units
• Introduction to Finance	10
• Fundamentals of Engineering Mechanics	10
• Social and Interactive Media	10
• Computing Fundamentals	10
• Database and Information Management	10
• Microeconomics for Business Decisions	10
• Macroeconomics In the Global Economy	10
• Introduction to Programming	10
• Application Programming	10
• Mobile Application Programming	10
• Business Analysis	10
• Foundations of Law	10
• Introduction to Mechanical Engineering Design	10
• Foundations of Marketing	10
• Introduction to Management	10
• Systems Analysis and Design	10
• Human Computer Interaction	10
• Business Decision Making	10

Delivery of modules may not follow the above sequence and are subject to change. For more information on module exemptions, please speak to our Programme Consultant.

Mode of Assessment

Assessment of this programme may include assignments, tests, projects and final examinations.

Graduation Requirements

For graduation requirements, please refer here.

Annex | Module Outlines

Fundamentals of Engineering Mechanics

This course introduces some basic principles of engineering mechanics in as simple a manner as possible. Emphasis is placed upon students gaining a real understanding of the laws and principles of mechanics. This course provides essential foundation knowledge for all disciplines of engineering and surveying and will be assumed knowledge in many of the courses taken in later years of undergraduate programmes.

Introduction to Electrical Engineering

This course introduces students to fundamental electrical elements including voltage, current, resistance, inductance, capacitance and ideal operational amplifier. It provides students with an understanding and appreciation of techniques for analysing and designing simple dc and ac circuits including balanced 3 phase circuits. It also introduces the principles behind simple electrical machines, and provides hands on experience in using a microcomputer to control a simple electrical device.

Introduction to Procedural Programming

This course introduces students to procedural programming and problem-solving with computers through MATLAB® and C, and assumes that students have basic computer literacy but no prior exposure to computer programming.

Introduction to Professional Engineering

This course is the first in a series of professional practice courses that introduces students to professional skills that are integral to an engineering workplace. The focus of all the courses is on integrating professional skills with technical skills. The courses also incorporate academic survival skills and support, particularly in first year.

The course content is delivered by subject specialists and then students are asked to apply their theoretical learning to engineering-based assessments.

This first year professional practice course explores a number of large-scale issues that are increasingly becoming the focus of engineering across the globe. Adding to this macro picture is a more micro examination of the day to day life of an engineer. The aim of exploring both the macro and micro perspectives is for students to not only gain a realistic picture of what to expect in their future career, but also an understanding of the myriad ways engineers can be part of the solution for some of the issues the world is currently facing.

The course also focuses on developing underpinning skills such as practical problem solving, report writing, oral presentation skills, teamwork and W&HS that students will need in all years of their program. Students participate in a project of their choosing from provided options. Through the project, they demonstrate teamwork and other core skills. Each student is required to present a reflective learning journal as part of their assessment.

Modelling and Control

This course introduces students to modelling and control of engineering systems. It presents tools that are fundamental for the analysis and design of such systems. The tools presented in the course use energy as a key element to develop modelling skills that can transcend physical domains and engineering specialisations. In addition, the course provides students with an understanding of the principle of feedback along with an introduction to classical control design techniques. Topics include fundamental limitations, stability of closed loop systems, control design for time domain and frequency domain specifications.

Sustainable Engineering Practice

This course is the second in a series of professional practice courses that introduces students to professional skills that are integral to an engineering workplace. The focus of all the courses is on integrating professional skills with technical skills.

The course content is delivered by subject specialists and students are asked to apply their theoretical learning to engineering-based assessments.

The second of the professional development courses introduces students to sustainability and `Green' engineering concepts.

Students will continue their written communication skills building through several workshops and through the assignments and reflective journals submitted for this course.

Managing Engineering Projects

This course is the third in a series of professional practice courses that introduces students to professional skills that are integral to an engineering workplace. The focus of all the courses is on integrating professional skills with technical skills.

This third professional practice course strongly focuses on project management tools and techniques as defined by the Project Management Body of Knowledge (PMBOK).

The course runs in a 'flipped' classroom mode where students are required to read/watch a variety of project management resources prior to each week's lecture and tutorial.

Where possible, each lecture will include a seminar by an external senior practicing project manager on that week's topic. As these external guests are giving up their time for the benefit of the student body, and in the spirit of professionalism, 100% attendance is expected at all presentations. Due to the 'commercial in confidence' nature of some aspects presented, any recordings captured will (by necessity) be edited before release. Students who are not located at the Callaghan Campus will have access to lecture presentations via UoN Capture.

In relation to programme completion for continuing students, ENGG3500 is a direct replacement for GENG3830.

Engineering Complexity

This course is the final in a series of professional practice courses that introduces students to professional skills that are integral to an engineering workplace. The focus of all the courses is on integrating professional skills with technical skills.

Students are challenged by the special difficulties of offering engineered solutions into environments involving open-ended problems and their consequences. Engineering management and thinking tools are applied to the development process and are employed to manage complex and challenging scenarios. This course focuses on the application of sound engineering principles to the complex demands of problems involving conflicts of priority and ill-defined scopes of work, which are increasingly evident in contemporary society.

Calculus of Science and Engineering

Provides the essential mathematical techniques of Physical Science and Engineering. These are the methods of Multivariable Calculus and Differential Equations. Multivariable Calculus involves a study of the differential and integral calculus of functions of two or more variables. In particular it covers introductory material on the differential calculus of scalar and vector fields, and the integral calculus of scalar and vector functions. Differential Equations arise from mathematical models of physical processes. Also includes the study of the main analytical and numerical methods for obtaining solutions to first and second order differential equations.

Introduction to Mechanical Engineering Design

This course enables students to develop basic spatial skill through the use of a solid modelling system. Students develop skills in interpreting and visualising 3D objects in 2D format. They create and assemble solid model representation of machine components and create 2D engineering drawings from solid models. Students develop advanced technical sketching skills to aid communication in engineering design.

Mechanical Engineering Design 1

On completion of this course students will have:

- A basic familiarity and capacity in workshop methods
- An increased skillset in the conceptual design methodology
- An ability to conceive and produce a robotic device to solve deterministic problems

Materials Science and Engineering 1

This course provides students with an integrated foundation for understanding the engineering properties of materials and how these properties result from basic chemical bonding and structure.

Dynamics of Machines

This is a calculus-based course on the dynamics of mechanical systems. The course covers classical mechanics of systems involving point masses and rigid bodies in 2 and 3-dimensional space.

Mechanics of Solids 1

This course provides an introduction to the mechanics of solids and elasticity theory with a focus on stress analysis. The material is covered with a practical focus from the point of view of machine component design. This course forms a foundation for several later courses that focus more heavily on design and solid mechanics.

Engineering Computations 2

This course introduces students to the principles of engineering computations and probability/statistics. Its purpose is also to develop the student's ability to write MATLAB code to solve numerical and statistical problems of engineering interest.

Fluid Mechanics 1

This course provides an introduction to fluid mechanics covering topics such as properties of fluids; viscosity; pressure measurement; transport equations; Bernoulli's Equation and applications.

Mechanical Engineering Design 2

This second course in engineering design applies knowledge gained in earlier mechanics and design courses to advanced aspects of engineering design. A range of topics are covered including the design of mechanical connections, power transmission through gears, bearing design and selection and shaft design.

Materials Science and Engineering 2

Extends the competency of students in understanding engineering materials and their behaviour. The course is focused more on the mechanical behaviour of materials than is Materials Science & Engineering 1, although the importance of other properties is never ignored. There are four major elements to the course:

1. The required theoretical understanding of the properties of engineering materials, how they are manipulated, and how they may degrade in service is presented in a series of lectures;

2. This material is reinforced by tutorials;

3. Techniques for applying this knowledge to the selection of materials in engineering design are taught in an extensive series of tutorial exercises and;

4. A series of laboratory exercises and a related assignment encourage students to think across topic boundaries.

Heat Transfer

Students learn the fundamental principles of heat transfer and how they can use them to solve engineering problems, in particular in heat exchanger applications. The course, which nicely blends physical and mathematical concepts, provides an excellent support to the students for expanding/developing the analytical skills built on previous knowledge of mathematics and physics.

On completion, students will demonstrate sufficient skills to enable them for their future careers, and the potential for future self-directed study in this area.

Thermodynamics

This course provides a full introduction to engineering thermodynamics with a focus on engineering flow processes as used in the power generation industries. After covering the first and second laws, a number of cycles are studied in detail, i.e. ideal gas and vapour power and refrigeration cycles, as well as applications in air-conditioning. The course is complemented by lectures on how to calculate the fundamental thermodynamic properties of fluids as used in flow processes.

Fluid Mechanics 2 and CFD

This course blends together physical and mathematical concepts in a more advanced treatment of fluid mechanics. Analytical methods introduced in earlier courses are extended to compressible flows, applications in fluid machines and turbulent flows and turbulence modelling. The latter is used as a basis to provide a practical introduction to Computational Fluid Dynamics (CFD).

Mechanics of Solids 2 and FEA

This course follows on from Mechanics of Solids 1 to provide a more advanced treatment of solids mechanics and elasticity theory. This material is covered alongside a practical introduction to the Finite Element Method and instruction in a commercial software package. Comparisons between analytical and computational approaches will be drawn.

Mechanical Engineering Project A & B

Working under broad direction of a chosen academic supervisor, students undertake a substantial and open-ended engineering project that encompasses research, problem solving, and report writing. Projects vary from highly theoretical research, through to strongly applied research projects, but in all projects a high level of personal drive is required to optimise the outcome.

The 'FYP' is your 'Capstone' educational experience allowing you to draw elements from across your degree to a single point of focus, you will need to demonstrate exceptional self-management and need to clearly demonstrate you are in control and leading the project through your final written submission.

Your grade is based on your final written report, reflective of your 450 hours of productive work, though your mark is moderated by your oral presentation outcomes.

Your Part A report, reflecting the initial 150 hours of work carries a Compulsory Component such that if your Part A report does not demonstrate sufficient commitment or progress in the project, you can be excluded from the Part B component.

A comprehensive FYP Manual is available from the Blackboard site and is your first point of reference for all questions relating to your FYP.

Advanced Physics I

Physics underpins most aspects of modern engineering, technology, and medicine; developments in physics often drive social change. Knowledge of physics is therefore vital to understanding the world around us. Physics is needed to make new materials, monitor our environment, put satellites into orbit, harness energy, determine the strength of structures, take scans of the human body, develop faster computers, etc. The course is calculus based and covers topics from mechanics and kinematics, wave mechanics, electricity, particle physics, cosmology, and thermal physics.

Mathematics for Engineering, Science and Technology 1

This course covers the parts of calculus and algebra which are fundamental to all of mathematics and its applications. In algebra, students learn concepts and symbolic manipulation when calculating with large numbers of variables. In calculus, they learn concepts used when working with continuously changing variables. Both ways of thinking are essential in the mathematics met by students in the Sciences, Engineering and Commerce. These concepts will be further explored in MATH1120.

The course sequence MATH1110, MATH1120, MATH2340 is equivalent to the pair MATH1210, MATH1220. Students should bear this in mind when selecting courses due to the differences in terms of assumed knowledge, pace of presentation, and timing of achievement of assumed knowledge for subsequent mathematics courses.

Mathematics for Engineering, Science and Technology 2

This course covers the mathematics necessary to perform calculations in, and create models for, the real world of Science and Engineering. Specifically, it will demonstrate how to do mathematics in a three-dimensional world. The course describes the fundamental ideas of calculus of functions of one and two variables, differential equations and linear algebra. It continues from MATH1110 to complete a first year of Mathematics suitable for Science and Engineering students, and others for whom Mathematics is a tool.

Students who wish to proceed to further mathematics studies at second year level are recommended to complete MATH2340 after MATH1120. The course sequence MATH1110, MATH1120, MATH2340 is equivalent to the pair MATH1210, MATH1220.

Bachelor of Engineering (Honours)(Mechanical)

At a Glance

Awarding Institution	:	The University of Newcastle, Australia
Modes of Study	:	Full-time (International & Singapore-based Students)
Duration	:	36 months
Commencement & End Date	:	NIL

Overview

Mechanical Engineering is considered the broadest of all engineering disciplines. It is concerned with the design, manufacture, operation and maintenance of mechanical devices, equipment and systems.

Develop a sound understanding of the design, manufacture, operation & maintenance of mechanical devices, equipment & systems. The Bachelor of Engineering (Honours)(Mechanical) Degree awarded by the University of Newcastle, Australia delivers a sound introduction to the fundamental principles of engineering science and practice. Concentration on underlying principles and development of learning ability prepare graduates for a wide range of career options where they can continue to expand their skills.

Admission Criteria

Local Qualifications

- GCE A-Levels (Minimum 3 subjects in H2 level or 2 subjects at H2 level and 2 subjects at H1 level); OR
- 3-year Diploma from local Polytechnic; OR
- PSB Academy Diploma in Mechanical Engineering Technology; OR
- Other Diploma or equivalent qualification would be assessed on a case by case basis

Entry requirements for international students can be found at https://www.newcastle.edu.au/international/study-with-us/undergraduate/undergraduate-entry-requirements

Minimum Age: 18

English Language Requirement

- GCE'A' - C pass in General Paper English
- IELTS 6.0 (with no subbands below 6.0)

Please refer to website:
https://www.newcastle.edu.au/__data/assets/pdf_file/0005/459473/UoN-English

Course Fees

Full-time

Course Fees	**Singapore-based Students**	**International Students**
Total Course Fee	NIL	NIL
Other Mandatory Fees		
Application Fee	NIL	NIL
Student Development and Administration Fee (New Students)	NIL	NIL

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

All fees are subject to annual revision.

Modules

Core Modules - 270 units	Units
• Fundamentals of Engineering Mechanics	10
• Introduction to Electrical Engineering	10
• Introduction to Procedural Programming	10
• Introduction to Professional Engineering	10
• Mathematics for Engineering, Science and Technology 1	10
• Mathematics for Engineering, Science and Technology 2	10
• Introduction to Mechanical Engineering	10
• Engineering Materials 1	10
• Engineering Risk and Uncertainty	10
• Engineering Fluid Mechanics	10
• Modelling and Control	10
• Calculus of Science and Engineering	10
• Mechanical Engineering Design 1	10
• Dynamics of Machines	10
• Mechanics of Solids 1	10
• Engineering Computations 2	10
• Managing Engineering Projects	10
• Mechanical Engineering Design 2	10
• Materials Science and Engineering 2	10
• Heat Transfer	10
• Thermodynamics	10
• Engineering Complexity	10
• Mechanics of Solids 2 and FEA	10
• Mechanical Engineering Project A	10
• Mechanical Engineering Project B	20
• Engineering Risk and Uncertainty	10
• Machine Learning for Engineer	10
• Projected/Direct Reading	10
• Sustainable Engineering Practices	10
• Fluid Mechanics and CFD	10

Elective Pathway – 20 units of the following:	Units
• Accounting for Decision Makers	10
• Accounting Practice	10
• Business Finance	10
• Media Storytelling	10
• Media and Communication Concepts	10
• Interactive Storytelling	10
• Social and Interactive Media	10
• Database and Information Management	10
• Digital and Computer Electronics	10
• Circuits and Signals	10
• Managing International Business Risk	10
• Introduction to Programming	10
• Mobile Application Programming	10
• ICT Business Analysis	10
• Foundations of Law	10
• Law of Business Organisations	10
• Foundations of Marketing	10
• Introduction to Entrepreneurship and Innovation	10
• Leadership and Ethics	10
• Systems Analysis and Design	10
• Human-Computer Interaction	10
• Engineeering Statistics	10

Delivery of modules may not follow the above sequence and are subject to change. For more information on module exemptions, please speak to our Programme Consultant.

Mode of Assessment

Assessment of this programme may include assignments, tests, projects and final examinations.

Graduation Requirements

For graduation requirements, please refer here.

Annex | Module Outlines

Fundamentals of Engineering Mechanics

This course introduces some basic principles of engineering mechanics in as simple a manner as possible. Emphasis is placed upon students gaining a real understanding of the laws and principles of mechanics. This course provides essential foundation knowledge for all disciplines of engineering and surveying and will be assumed knowledge in many of the courses taken in later years of undergraduate programmes.

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Students are challenged by the special difficulties of offering engineered solutions into environments involving open-ended problems and their consequences. Engineering management and thinking tools are applied to the development process and are employed to manage complex and challenging scenarios. This course focuses on the application of sound engineering principles to the complex demands of problems involving conflicts of priority and ill-defined scopes of work, which are increasingly evident in contemporary society.

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On completion of this course students will have:

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This course provides an introduction to the mechanics of solids and elasticity theory with a focus on stress analysis. The material is covered with a practical focus from the point of view of machine component design. This course forms a foundation for several later courses that focus more heavily on design and solid mechanics.

Engineering Computations 2

This course introduces students to the principles of engineering computations and probability/statistics. Its purpose is also to develop the student's ability to write MATLAB code to solve numerical and statistical problems of engineering interest.

Fluid Mechanics 1

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Mechanical Engineering Design 2

This second course in engineering design applies knowledge gained in earlier mechanics and design courses to advanced aspects of engineering design. A range of topics are covered including the design of mechanical connections, power transmission through gears, bearing design and selection and shaft design.

Materials Science and Engineering 2

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2. This material is reinforced by tutorials;

3. Techniques for applying this knowledge to the selection of materials in engineering design are taught in an extensive series of tutorial exercises and;

4. A series of laboratory exercises and a related assignment encourage students to think across topic boundaries.

Heat Transfer

Students learn the fundamental principles of heat transfer and how they can use them to solve engineering problems, in particular in heat exchanger applications. The course, which nicely blends physical and mathematical concepts, provides an excellent support to the students for expanding/developing the analytical skills built on previous knowledge of mathematics and physics.

On completion, students will demonstrate sufficient skills to enable them for their future careers, and the potential for future self-directed study in this area.

Thermodynamics

This course provides a full introduction to engineering thermodynamics with a focus on engineering flow processes as used in the power generation industries. After covering the first and second laws, a number of cycles are studied in detail, i.e. ideal gas and vapour power and refrigeration cycles, as well as applications in air-conditioning. The course is complemented by lectures on how to calculate the fundamental thermodynamic properties of fluids as used in flow processes.

Fluid Mechanics 2 and CFD

This course blends together physical and mathematical concepts in a more advanced treatment of fluid mechanics. Analytical methods introduced in earlier courses are extended to compressible flows, applications in fluid machines and turbulent flows and turbulence modelling. The latter is used as a basis to provide a practical introduction to Computational Fluid Dynamics (CFD).

Mechanics of Solids 2 and FEA

This course follows on from Mechanics of Solids 1 to provide a more advanced treatment of solids mechanics and elasticity theory. This material is covered alongside a practical introduction to the Finite Element Method and instruction in a commercial software package. Comparisons between analytical and computational approaches will be drawn.

Mechanical Engineering Project A & B

Working under broad direction of a chosen academic supervisor, students undertake a substantial and open-ended engineering project that encompasses research, problem solving, and report writing. Projects vary from highly theoretical research, through to strongly applied research projects, but in all projects a high level of personal drive is required to optimise the outcome.

The 'FYP' is your 'Capstone' educational experience allowing you to draw elements from across your degree to a single point of focus, you will need to demonstrate exceptional self-management and need to clearly demonstrate you are in control and leading the project through your final written submission.

Your grade is based on your final written report, reflective of your 450 hours of productive work, though your mark is moderated by your oral presentation outcomes.

Your Part A report, reflecting the initial 150 hours of work carries a Compulsory Component such that if your Part A report does not demonstrate sufficient commitment or progress in the project, you can be excluded from the Part B component.

A comprehensive FYP Manual is available from the Blackboard site and is your first point of reference for all questions relating to your FYP.

Advanced Physics I

Physics underpins most aspects of modern engineering, technology, and medicine; developments in physics often drive social change. Knowledge of physics is therefore vital to understanding the world around us. Physics is needed to make new materials, monitor our environment, put satellites into orbit, harness energy, determine the strength of structures, take scans of the human body, develop faster computers, etc. The course is calculus based and covers topics from mechanics and kinematics, wave mechanics, electricity, particle physics, cosmology, and thermal physics.

Mathematics for Engineering, Science and Technology 1

This course covers the parts of calculus and algebra which are fundamental to all of mathematics and its applications. In algebra, students learn concepts and symbolic manipulation when calculating with large numbers of variables. In calculus, they learn concepts used when working with continuously changing variables. Both ways of thinking are essential in the mathematics met by students in the Sciences, Engineering and Commerce. These concepts will be further explored in MATH1120.

The course sequence MATH1110, MATH1120, MATH2340 is equivalent to the pair MATH1210, MATH1220. Students should bear this in mind when selecting courses due to the differences in terms of assumed knowledge, pace of presentation, and timing of achievement of assumed knowledge for subsequent mathematics courses.

Mathematics for Engineering, Science and Technology 2

This course covers the mathematics necessary to perform calculations in, and create models for, the real world of Science and Engineering. Specifically, it will demonstrate how to do mathematics in a three-dimensional world. The course describes the fundamental ideas of calculus of functions of one and two variables, differential equations and linear algebra. It continues from MATH1110 to complete a first year of Mathematics suitable for Science and Engineering students, and others for whom Mathematics is a tool.

Students who wish to proceed to further mathematics studies at second year level are recommended to complete MATH2340 after MATH1120. The course sequence MATH1110, MATH1120, MATH2340 is equivalent to the pair MATH1210, MATH1220.

Bachelor of Electrical and Electronic Engineering (Honours)

At a Glance

Awarding Institution	:	The University of Newcastle, Australia
Modes of Study	:	Full-time (International & Singapore-based Students)
Duration	:	32 months
Commencement and End Dates	:	NIL

Overview

Master the study of mathematics, science, technology and the construct of electrical products and services with an Electrical Engineering degree. You will get to work in exciting fields such as robotics and renewable energy!

Electrical Engineering is a wide-ranging discipline as it includes the study of control and automation, power generation and distribution, telecommunication equipment, signal processing, and analogue and digital electronics. As an electrical engineer, you will combine mathematics, science, technology and problem-solving skills to design, construct and maintain electrical products and services.

Admission Criteria

Local Qualifications

- GCE A-Levels (Minimum 3 subjects in H2 level or 2 subjects at H2 level and 2 subjects at H1 level); OR
- 3-year Diploma from local Polytechnic; OR
- PSB Academy Diploma in Electrical Engineering Technology; OR
- Other Diploma or equivalent qualification would be assessed on a case by case basis

Entry requirements for international students can be found at https://www.newcastle.edu.au/international/study-with-us/undergraduate/undergraduate-entry-requirements

Minimum Age: 16

English Language Requirement

All Applicants must demonstrate that they meet the University's English proficiency requirement. Further information regarding English language proficiency requirements can be found at the English Language Proficiency for Admission Policy.

Applicants who do not speak English as a first language must demonstrate that they meet the University's English proficiency requirement through one of the following methods:

English Language Tests

1. **GCSE - English Language or Literature**
   IGCSE - A level English or Humanities
   Overall Score: Minimum Grade C
2. **IELTS Academic**
   Overall Score: 6.0
   Section minimums are: 6.0 R/L/S/W
3. **TOEFL IBT**
   Overall Score: 60
   Minimum Individual Skills Test: R: 13, L: 12, S: 18 and Writing: 21
4. **PTE Academic (GSE)**
   Overall Score: 50
   Section Minimum: 54
5. **PSB Academy Certificate in Academic English (CAE)**
   Students must obtain 60% or more in each of the 4 exams. Each of the 4 exams is of equal weighting.

English language test scores must be less than 2 years old at the date of application to the University of Newcastle.

The English Language Proficiency for Admission Policy will outline in detail what UON's requirements are for admission. Applicants should review the Flowchart and Requirements tables (accessible in from the Policy - Associated Information) for additional information on the variety of qualifications and/or recognised English exams will satisfy the requirements.
International Qualifications: https://www.psb-academy.edu.sg/intl-adm/

Course Fees

Full-time

Course Fees	Singapore-based Students	International Students
Total Course Fee (Academic Year 1 Entry)	NIL	NIL
Other Mandatory Fees		
Application Fee	NIL	NIL
Student Development and Administration Fee (New Students)	NIL	NIL

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

All fees are subject to annual revision.

Modules

Core Modules - 250 units	Units
• Introduction to Electrical Engineering	10
• Digital and Computer Electronics 1	10
• Introduction to Procedural Programming	10
• Introduction to Professional Engineering	10
• Mathematics for Engineering, Science and Technology 1	10
• Mathematics for Engineering, Science and Technology 2	10
• Advanced Physics I	10
• Advanced Physics II	10
• Electric Energy Systems	10
• Electrical and Electronic Circuits	10
• Circuits and Signals	10
• Introduction to Embedded Computing	10
• Modelling and Control	10
• Sustainable Engineering Practice	10
• Calculus of Science and Engineering	10
• Engineering Statistics	10
• Electric Machines and Power Systems	10
• Analog Electronics	10
• Control System Design	10
• Analog and Digital Communications	10
• Managing Engineering Projects	10
• Final Year Engineering Project Part A	10
• Final Year Engineering Project Part B	20
• Engineering Complexity	10

Electrical and Electronic Directed Modules - 30 units of the following:	Units
• Signal Processing	10
• Electrical Systems	10
• Electronic Design	10
• Programmable Logic Design	10

Elective Pathway - 40 units of the following:	Units
• Introduction to Finance	10
• Fundamentals of Engineering Mechanics	10
• Social and Interactive Media	10
• Computing Fundamentals	10
• Database and Information Management	10
• Microeconomics for Business Decisions	10
• Macroeconomics In the Global Economy	10
• Introduction to Programming	10
• Application Programming	10
• Mobile Application Programming	10
• Business Analysis	10
• Foundations of Law	10
• Introduction to Mechanical Engineering Design	10
• Foundations of Marketing	10
• Introduction to Management	10
• Systems Analysis and Design	10
• Human Computer Interaction	10
• Business Decision Making	10

Delivery of modules may not follow the above sequence and are subject to change. For more information on module exemptions, please speak to our Programme Consultant.

Mode of Assessment

Assessment of this programme may include assignments, tests, projects and final examinations.

Graduation Requirements

For graduation requirements, please refer here.

Annex | Module Outlines

Introduction to Electrical Engineering

This course introduces students to fundamental electrical elements including voltage, current, resistance, inductance, capacitance and ideal operational amplifier. It provides students with an understanding and appreciation of techniques for analysing and designing simple DC and AC circuits including balanced 3 phase circuits. It also introduces the principles behind simple electrical machines, and provides hands on experience in using a microcomputer to control a simple electrical device.

Digital and Computer Electronics 1

This course introduces students to the principles of digital computer design, particularly the fundamentals of modern digital logic design including logic gates, Boolean algebra, Karnaugh maps, flip-flops, and state-machines. It examines the binary number system, hexadecimal notation and computer arithmetic. This exploration of "low level" computing is complemented by an introduction to the basic elements of a modern computer, its organisation and architecture. In addition, students are introduced to assembly and machine language programming.

Electric Energy Systems

This course introduces the theory of magnetic circuits, transformers and electromagnetic energy conversion and applies these fundamental principles to systems which rely on them. Topics considered may include three phase circuits, magnetic circuits, transformers, electromechanical energy conversion, transmission lines, introductory electric machines and power systems.

Electrical and Electronic Circuits

This course explores the fundamental concepts of electrical circuits. Content includes mesh/loop analysis (with super meshes), nodal analysis (with super nodes), Thevenin, Norton and maximum power transfer and superposition theorem applied to circuits, circuits based on ideal operational amplifiers, simple non-linear circuits employing diodes and transistors. These include basic amplifiers, buffers and switching circuits.

Circuits and Signals

This course starts from the frequency dependent behaviour of alternating current circuits and filters, and shows how Fourier series and Fourier Transform can be used to analyse a circuit's response. Subsequently, differential models and linear system interpretation of linear circuits are discussed, and the first ad second order transient behaviour of circuits is analysed using Laplace transforms. Some fundamental concepts of system theory such as transfer functions, impulse response and convolution are introduced. The course also covers the basic building blocks of a digital system including sampling, frequency domain analysis and elementary filters.

Introduction to Embedded Computing

Students in ELEC2720 will learn about microcontrollers, their low level architecture, and the techniques of programming a microcontroller using the C programming language. Students will develop a practical product by programming a microcontroller with C and will learn to use modern peripheral devices used in embedded systems, including interrupt controllers, direct memory access, communication devices such as SPI, I2C and USB, and display devices.

The assessments for this course are broken into a number of progressive practical assignments contributing towards a final demonstrable product. There will also be a final exam component to examine the basic concepts presented during the course. Students are encouraged to familiarise themselves with the materials available online. The lectorials and supervised laboratory sessions are interactive sessions for the students to discuss their questions with the instructors. The hardware required to complete the practical components of this course is readily available at low cost enabling inclined students to complete many of the activities off campus. All materials for this course will be available online prior to face-to-face sessions.

Electric Machines and Power Systems

Analyses the steady state of performance of DC and AC (single and polyphase) machines in the context of their application. Space vector theory is introduced. Fundamental power system topics are introduced including transmission line parameters and steady state operation and power system representation.

Analog Electronics

This course deals with transistor amplifier circuits, multi-stage transistor amplifiers, differential amplifiers, power amplifiers, operational amplifiers, feedback amplifiers, and non-linear analogue circuits. The above areas along with analogue-to-digital and digital-to-analogue conversion are developed with view to interfacing sensors to computer equipment. Practical issues when implementing high-performance analogue electronic systems are also discussed.

Analog and Digital Communications

This course provides a thorough introduction to the basic principles and techniques used in analog and digital communications. The course will introduce analog and digital modulation techniques, communication receiver and transmitter design, baseband and bandpass communication techniques, line coding techniques, noise analysis, and multiplexing techniques. The course also introduces analytical techniques to evaluate the performance of communication systems.

Electrical Engineering Design and Practice

This course is orientated around a number of major projects where students work in teams to design and develop a specified product, device or system.

Each project itself involves both management and engineering components. It requires students to utilise knowledge from a range of disciplines including some or all of: Electrical, Electronics, Communications, Computing, Software, Signal Processing, Control and Mechanical systems.

Final Year Engineering Project Part A

Final Year Projects represent the culmination of study towards the Bachelor of Engineering degree. Projects offer the opportunity to apply and extend material learned throughout the programme. Assessment is by means of a seminar presentation, submission of a thesis, and a public demonstration of work undertaken.

In contrast to the majority of courses studied elsewhere in the programme, projects are undertaken individually or in small groups. This necessarily introduces the dimension of workload management into the program to enable completion of a large, relatively unstructured "assignment" over the course of the year.

The projects undertaken span a diverse range of topics, including theoretical, simulation and experimental studies, and vary from year to year. The emphasis is necessarily on facilitating student learning in technical, project management and presentation spheres.

Final Year Engineering Project Part B

Final Year Projects represent the culmination of study towards the Bachelor of Engineering Degree. Projects offer the opportunity to apply and extend material learned throughout the programme. Assessment is by means of a seminar presentation, submission of a thesis, and a public presentation of work undertaken.

In contrast to the majority of courses studied elsewhere in the program, projects are undertaken individually or in small groups. This necessarily introduces the dimension of workload management into the program to enable completion of a large, relatively unstructured "assignment" over the course of the year.

The projects undertaken span a diverse range of topics, including theoretical, simulation and experimental studies, and vary from year to year. The emphasis is necessarily on facilitating student learning in technical, project management and presentation spheres.

Introduction to Procedural Programming

This course introduces students to procedural programming and problem-solving with computers through MATLAB® and C, and assumes that students have basic computer literacy but no prior exposure to computer programming.

Introduction to Professional Engineering

This course is the first in a series of professional practice courses that introduces students to professional skills that are integral to an engineering workplace. The focus of all the courses is on integrating professional skills with technical skills. The courses also incorporate academic survival skills and support, particularly in first year.

The course content is delivered by subject specialists and then students are asked to apply their theoretical learning to engineering-based assessments.

This first year professional practice course explores a number of large-scale issues that are increasingly becoming the focus of engineering across the globe. Adding to this macro picture is a more micro examination of the day to day life of an engineer. The aim of exploring both the macro and micro perspectives is for students to not only gain a realistic picture of what to expect in their future career, but also an understanding of the myriad ways engineers can be part of the solution for some of the issues the world is currently facing.

The course also focuses on developing underpinning skills such as practical problem solving, report writing, oral presentation skills, teamwork and W&HS that students will need in all years of their program. Students participate in a project of their choosing from provided options. Through the project, they demonstrate teamwork and other core skills. Each student is required to present a reflective learning journal as part of their assessment.

Modelling and Control

This course introduces students to modelling and control of engineering systems. It presents tools that are fundamental for the analysis and design of such systems. The tools presented in the course use energy as a key element to develop modelling skills that can transcend physical domains and engineering specialisations. In addition, the course provides students with an understanding of the principle of feedback along with an introduction to classical control design techniques. Topics include fundamental limitations, stability of closed loop systems, control design for time domain and frequency domain specifications.

Sustainable Engineering Practice

This course is the second in a series of professional practice courses that introduces students to professional skills that are integral to an engineering workplace. The focus of all the courses is on integrating professional skills with technical skills.

The course content is delivered by subject specialists and students are asked to apply their theoretical learning to engineering-based assessments.

The second of the professional development courses introduces students to sustainability and `Green' engineering concepts.

Students will continue their written communication skills building through several workshops and through the assignments and reflective journal submitted for this course.

Linear Control and Estimation

This course introduces students to optimisation-based state feedback control concepts as well as the linear observers needed to design such controllers. It also covers linear quadratic control design, and introduces the noise models, principles of minimum mean squared error estimation, and Kalman filters for optimal state estimation. These concepts are used to introduce linear quadratic Gaussian control and model predictive control.

Managing Engineering Projects

This course is the third in a series of professional practice courses that introduces students to professional skills that are integral to an engineering workplace. The focus of all the courses is on integrating professional skills with technical skills.

This third professional practice course strongly focuses on project management tools and techniques as defined by the Project Management Body of Knowledge (PMBOK).

The course runs in a 'flipped' classroom mode where students are required to read/watch a variety of project management resources prior to each week's lecture and tutorial.

Where possible, each lecture will include a seminar by an external senior practicing project manager on that week's topic. As these external guests are giving up their time for the benefit of the student body, and in the spirit of professionalism, 100% attendance is expected at all presentations. Due to the 'commercial in confidence' nature of some aspects presented, any recordings captured will (by necessity) be edited before release. Students who are not located at the Callaghan Campus will have access to lecture presentations via UoN Capture.

In relation to programme completion for continuing students, ENGG3500 is a direct replacement for GENG3830.

Engineering Complexity

This course is the final in a series of professional practice courses that introduces students to professional skills that are integral to an engineering workplace. The focus of all the courses is on integrating professional skills with technical skills.

Students are challenged by the special difficulties of offering engineered solutions into environments involving open-ended problems and their consequences. Engineering management and thinking tools are applied to the development process and are employed to manage complex and challenging scenarios. This course focuses on the application of sound engineering principles to the complex demands of problems involving conflicts of priority and ill-defined scopes of work, which are increasingly evident in contemporary society.

Calculus of Science and Engineering

This module provides the essential mathematical techniques of Physical Science and Engineering. These are the methods of Multivariable Calculus and Differential Equations. Multivariable Calculus involves a study of the differential and integral calculus of functions of two or more variables. In particular, it covers introductory material on the differential calculus of scalar and vector fields, and the integral calculus of scalar and vector functions. Differential Equations arise from mathematical models of physical processes. This module also includes the study of the main analytical and numerical methods for obtaining solutions to first and second order differential equations.

Advanced Physics I

Physics underpins most aspects of modern engineering, technology, and medicine; developments in physics often drive social change. Knowledge of physics is therefore vital to understanding the world around us. Physics is needed to make new materials, monitor our environment, put satellites into orbit, harness energy, determine the strength of structures, take scans of the human body, develop faster computers, etc. The course is calculus-based and covers topics from mechanics and kinematics, wave mechanics, electricity, particle physics, cosmology, and thermal physics.

Advanced Physics II

Physics underpins most aspects of modern engineering, technology, and medicine. For example, about 25% of the world's economy is tied to the quantum mechanics of silicon, and many of the most important practical advances in chemistry and biology can be traced to the precise understanding of the behaviour of atoms and molecules provided by quantum mechanics. Knowledge of physics is therefore vital to understanding the world around us. This calculus-based course continues on from PHYS1210 and covers the topics of mathematical tools, electromagnetism, optics and physics of matter.

Engineering Statistics

Statistics provides us with a quantitative framework to utilise data for describing, summarising, and modelling the world around us. Engineering statistics combines engineering and statistics using scientific methods for analysing data. This course introduces students to the fundamental concepts of probability, random variables and their distributions, and shows how these ideas provide the theoretical foundation for data analysis through statistical modelling, estimation and hypothesis testing with a major emphasis on applications in electrical engineering and computer systems. On completion of this course, students will be able to apply statistical theory to make informed decisions and predictions relevant to engineering.

Bachelor of Engineering (Honours)(Electrical)

At a Glance

Awarding Institution	:	The University of Newcastle, Australia
Modes of Study	:	Full-time (International & Singapore-based Students)
Duration	:	36 months
Commencement and End Dates	:	NIL

Overview

Master the study of mathematics, science, technology and the construct of electrical products and services with an Electrical Engineering degree. You will get to work in exciting fields such as robotics and renewable energy!

Electrical Engineering is a wide-ranging discipline as it includes the study of control and automation, power generation and distribution, telecommunication equipment, signal processing, and analogue and digital electronics. As an electrical engineer, you will combine mathematics, science, technology and problem-solving skills to design, construct and maintain electrical products and services.

Admission Criteria

Local Qualifications

- GCE A-Levels (minimum 3 subjects); OR
- A 3-year Diploma from a local Polytechnic or equivalent; OR
- Completion of the Diploma in Electrical Engineering Technology from PSB Academy;
- OR
- Other Diploma or equivalent qualification would be assessed on a case by case basis

Entry requirements for international students can be found at https://www.newcastle.edu.au/international/study-with-us/undergraduate/undergraduate-entry-requirements

Minimum Age: 18

English Language Requirement

All Applicants must demonstrate that they meet the University's English proficiency requirement. Further information regarding English language proficiency requirements can be found at the English Language Proficiency for Admission Policy.

Applicants who do not speak English as a first language must demonstrate that they meet the University's English proficiency requirement through one of the following methods:

English Language Tests

- GCE'A' - C pass in General Paper English
- IELTS 6.0 (with no subbands below 6.0)

Please refer to website:
https://www.newcastle.edu.au/__data/assets/pdf_file/0005/459473/UoN-EnglishRequirements-TABLES.PDF

Course Fees

Full-time

Course Fees	Singapore-based Students	International Students
Total Course Fee (Academic Year 1 Entry)	NIL	NIL
Other Mandatory Fees		
Application Fee	NIL	NIL
Student Development and Administration Fee (New Students)	NIL	NIL

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

All fees are subject to annual revision.

Modules

Core Modules - 230 units	Units
• Introduction to Electrical Engineering	10
• Digital and Computer Electronics 1	10
• Introduction to Procedural Programming	10
• Introduction to Professional Engineering	10
• Mathematics for Engineering, Science and Technology 1	10
• Mathematics for Engineering, Science and Technology 2	10
• Advanced Physics I	10
• Advanced Physics II	10
• Electric Energy Systems	10
• Electrical and Electronic Circuits	10
• Circuits and Signals	10
• Introduction to Embedded Computing	10
• Modelling and Control	10
• Sustainable Engineering Practice	10
• Calculus of Science and Engineering	10
• Quantum Mechanics and Semiconductor Physics	10
• Engineering Statistics	10
• Electric Machines and Power Systems	10
• Analog Electronics	10
• Managing Engineering Projects	10
• Final Year Engineering Project Part A	10
• Final Year Engineering Project Part B	20
• Engineering Complexity	10

Electrical and Electronic Directed Modules - 70 units of the following:	Units
• Control System Design	10
• Analog and Digital Communications	10
• Signal Processing	10
• Electrical Systems	10
• Electronic Design	10
• Programmable Logic Design	10
• Telecommunication Networks	10
• Machine Learning for Engineers	10

Elective Pathway – 20 units of the following:	Units
• Accounting for Decision Makers	10
• Accounting Practice	10
• Business Finance	10
• Fundamentals of Engineering Mechanics	10
• Media Storytelling	10
• Media and Communication Concepts	10
• Interactive Storytelling	10
• Social and Interactive Media	10
• Database and Information Management	10
• Digital and Computer Electronics	10
• Project/Directed Reading	10
• Managing International Business Risk	10
• Introduction to Programming	10
• Mobile Application Programming	10
• Microeconomics for Business Decisions	10
• Macroeconomics In the Global Economy	10
• Introduction to Programming	10
• ICT Business Analysis	10
• Project Management	10
• Foundations of Law	10
• Law of Business Organisations	10
• Introduction to Mechanical Engineering Design	10
• Foundations of Marketing	10
• Introduction to Entrepreneurship and Innovation	10
• Leadership and Ethics	10
• Systems Analysis and Design	10
• Human-Computer Interaction	10

Mode of Assessment

Assessment of this programme may include assignments, tests, projects and final examinations.

Graduation Requirements

For graduation requirements, please refer here.

Annex | Module Outlines

Introduction to Electrical Engineering

This course introduces students to fundamental electrical elements including voltage, current, resistance, inductance, capacitance and ideal operational amplifier. It provides students with an understanding and appreciation of techniques for analysing and designing simple DC and AC circuits including balanced 3 phase circuits. It also introduces the principles behind simple electrical machines, and provides hands on experience in using a microcomputer to control a simple electrical device.

Digital and Computer Electronics 1

This course introduces students to the principles of digital computer design, particularly the fundamentals of modern digital logic design including logic gates, Boolean algebra, Karnaugh maps, flip-flops, and state-machines. It examines the binary number system, hexadecimal notation and computer arithmetic. This exploration of "low level" computing is complemented by an introduction to the basic elements of a modern computer, its organisation and architecture. In addition, students are introduced to assembly and machine language programming.

Electric Energy Systems

This course introduces the theory of magnetic circuits, transformers and electromagnetic energy conversion and applies these fundamental principles to systems which rely on them. Topics considered may include three phase circuits, magnetic circuits, transformers, electromechanical energy conversion, transmission lines, introductory electric machines and power systems.

Electrical and Electronic Circuits

This course explores the fundamental concepts of electrical circuits. Content includes mesh/loop analysis (with super meshes), nodal analysis (with super nodes), Thevenin, Norton and maximum power transfer and superposition theorem applied to circuits, circuits based on ideal operational amplifiers, simple non-linear circuits employing diodes and transistors. These include basic amplifiers, buffers and switching circuits.

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This course starts from the frequency dependent behaviour of alternating current circuits and filters, and shows how Fourier series and Fourier Transform can be used to analyse a circuit's response. Subsequently, differential models and linear system interpretation of linear circuits are discussed, and the first ad second order transient behaviour of circuits is analysed using Laplace transforms. Some fundamental concepts of system theory such as transfer functions, impulse response and convolution are introduced. The course also covers the basic building blocks of a digital system including sampling, frequency domain analysis and elementary filters.

Introduction to Embedded Computing

Students in ELEC2720 will learn about microcontrollers, their low level architecture, and the techniques of programming a microcontroller using the C programming language. Students will develop a practical product by programming a microcontroller with C and will learn to use modern peripheral devices used in embedded systems, including interrupt controllers, direct memory access, communication devices such as SPI, I2C and USB, and display devices.

The assessments for this course are broken into a number of progressive practical assignments contributing towards a final demonstrable product. There will also be a final exam component to examine the basic concepts presented during the course. Students are encouraged to familiarise themselves with the materials available online. The lectorials and supervised laboratory sessions are interactive sessions for the students to discuss their questions with the instructors. The hardware required to complete the practical components of this course is readily available at low cost enabling inclined students to complete many of the activities off campus. All materials for this course will be available online prior to face-to-face sessions.

Electric Machines and Power Systems

Analyses the steady state of performance of DC and AC (single and polyphase) machines in the context of their application. Space vector theory is introduced. Fundamental power system topics are introduced including transmission line parameters and steady state operation and power system representation.

Analog Electronics

This course deals with transistor amplifier circuits, multi-stage transistor amplifiers, differential amplifiers, power amplifiers, operational amplifiers, feedback amplifiers, and non-linear analogue circuits. The above areas along with analogue-to-digital and digital-to-analogue conversion are developed with view to interfacing sensors to computer equipment. Practical issues when implementing high-performance analogue electronic systems are also discussed.

Analog and Digital Communications

This course provides a thorough introduction to the basic principles and techniques used in analog and digital communications. The course will introduce analog and digital modulation techniques, communication receiver and transmitter design, baseband and bandpass communication techniques, line coding techniques, noise analysis, and multiplexing techniques. The course also introduces analytical techniques to evaluate the performance of communication systems.

Electrical Engineering Design and Practice

This course is orientated around a number of major projects where students work in teams to design and develop a specified product, device or system.

Each project itself involves both management and engineering components. It requires students to utilise knowledge from a range of disciplines including some or all of: Electrical, Electronics, Communications, Computing, Software, Signal Processing, Control and Mechanical systems.

Final Year Engineering Project Part A

Final Year Projects represent the culmination of study towards the Bachelor of Engineering degree. Projects offer the opportunity to apply and extend material learned throughout the programme. Assessment is by means of a seminar presentation, submission of a thesis, and a public demonstration of work undertaken.

In contrast to the majority of courses studied elsewhere in the programme, projects are undertaken individually or in small groups. This necessarily introduces the dimension of workload management into the program to enable completion of a large, relatively unstructured "assignment" over the course of the year.

The projects undertaken span a diverse range of topics, including theoretical, simulation and experimental studies, and vary from year to year. The emphasis is necessarily on facilitating student learning in technical, project management and presentation spheres.

Final Year Engineering Project Part B

Final Year Projects represent the culmination of study towards the Bachelor of Engineering Degree. Projects offer the opportunity to apply and extend material learned throughout the programme. Assessment is by means of a seminar presentation, submission of a thesis, and a public presentation of work undertaken.

In contrast to the majority of courses studied elsewhere in the program, projects are undertaken individually or in small groups. This necessarily introduces the dimension of workload management into the program to enable completion of a large, relatively unstructured "assignment" over the course of the year.

The projects undertaken span a diverse range of topics, including theoretical, simulation and experimental studies, and vary from year to year. The emphasis is necessarily on facilitating student learning in technical, project management and presentation spheres.

Introduction to Procedural Programming

This course introduces students to procedural programming and problem-solving with computers through MATLAB® and C, and assumes that students have basic computer literacy but no prior exposure to computer programming.

Introduction to Professional Engineering

This course is the first in a series of professional practice courses that introduces students to professional skills that are integral to an engineering workplace. The focus of all the courses is on integrating professional skills with technical skills. The courses also incorporate academic survival skills and support, particularly in first year.

The course content is delivered by subject specialists and then students are asked to apply their theoretical learning to engineering-based assessments.

This first year professional practice course explores a number of large-scale issues that are increasingly becoming the focus of engineering across the globe. Adding to this macro picture is a more micro examination of the day to day life of an engineer. The aim of exploring both the macro and micro perspectives is for students to not only gain a realistic picture of what to expect in their future career, but also an understanding of the myriad ways engineers can be part of the solution for some of the issues the world is currently facing.

The course also focuses on developing underpinning skills such as practical problem solving, report writing, oral presentation skills, teamwork and W&HS that students will need in all years of their program. Students participate in a project of their choosing from provided options. Through the project, they demonstrate teamwork and other core skills. Each student is required to present a reflective learning journal as part of their assessment.

Modelling and Control

This course introduces students to modelling and control of engineering systems. It presents tools that are fundamental for the analysis and design of such systems. The tools presented in the course use energy as a key element to develop modelling skills that can transcend physical domains and engineering specialisations. In addition, the course provides students with an understanding of the principle of feedback along with an introduction to classical control design techniques. Topics include fundamental limitations, stability of closed loop systems, control design for time domain and frequency domain specifications.

Sustainable Engineering Practice

This course is the second in a series of professional practice courses that introduces students to professional skills that are integral to an engineering workplace. The focus of all the courses is on integrating professional skills with technical skills.

The course content is delivered by subject specialists and students are asked to apply their theoretical learning to engineering-based assessments.

The second of the professional development courses introduces students to sustainability and `Green' engineering concepts.

Students will continue their written communication skills building through several workshops and through the assignments and reflective journal submitted for this course.

Linear Control and Estimation

This course introduces students to optimisation-based state feedback control concepts as well as the linear observers needed to design such controllers. It also covers linear quadratic control design, and introduces the noise models, principles of minimum mean squared error estimation, and Kalman filters for optimal state estimation. These concepts are used to introduce linear quadratic Gaussian control and model predictive control.

Managing Engineering Projects

This course is the third in a series of professional practice courses that introduces students to professional skills that are integral to an engineering workplace. The focus of all the courses is on integrating professional skills with technical skills.

This third professional practice course strongly focuses on project management tools and techniques as defined by the Project Management Body of Knowledge (PMBOK).

The course runs in a 'flipped' classroom mode where students are required to read/watch a variety of project management resources prior to each week's lecture and tutorial.

Where possible, each lecture will include a seminar by an external senior practicing project manager on that week's topic. As these external guests are giving up their time for the benefit of the student body, and in the spirit of professionalism, 100% attendance is expected at all presentations. Due to the 'commercial in confidence' nature of some aspects presented, any recordings captured will (by necessity) be edited before release. Students who are not located at the Callaghan Campus will have access to lecture presentations via UoN Capture.

In relation to programme completion for continuing students, ENGG3500 is a direct replacement for GENG3830.

Engineering Complexity

This course is the final in a series of professional practice courses that introduces students to professional skills that are integral to an engineering workplace. The focus of all the courses is on integrating professional skills with technical skills.

Students are challenged by the special difficulties of offering engineered solutions into environments involving open-ended problems and their consequences. Engineering management and thinking tools are applied to the development process and are employed to manage complex and challenging scenarios. This course focuses on the application of sound engineering principles to the complex demands of problems involving conflicts of priority and ill-defined scopes of work, which are increasingly evident in contemporary society.

Calculus of Science and Engineering

This module provides the essential mathematical techniques of Physical Science and Engineering. These are the methods of Multivariable Calculus and Differential Equations. Multivariable Calculus involves a study of the differential and integral calculus of functions of two or more variables. In particular, it covers introductory material on the differential calculus of scalar and vector fields, and the integral calculus of scalar and vector functions. Differential Equations arise from mathematical models of physical processes. This module also includes the study of the main analytical and numerical methods for obtaining solutions to first and second order differential equations.

Advanced Physics I

Physics underpins most aspects of modern engineering, technology, and medicine; developments in physics often drive social change. Knowledge of physics is therefore vital to understanding the world around us. Physics is needed to make new materials, monitor our environment, put satellites into orbit, harness energy, determine the strength of structures, take scans of the human body, develop faster computers, etc. The course is calculus-based and covers topics from mechanics and kinematics, wave mechanics, electricity, particle physics, cosmology, and thermal physics.

Advanced Physics II

Physics underpins most aspects of modern engineering, technology, and medicine. For example, about 25% of the world's economy is tied to the quantum mechanics of silicon, and many of the most important practical advances in chemistry and biology can be traced to the precise understanding of the behaviour of atoms and molecules provided by quantum mechanics. Knowledge of physics is therefore vital to understanding the world around us. This calculus-based course continues on from PHYS1210 and covers the topics of mathematical tools, electromagnetism, optics and physics of matter.

Engineering Statistics

Statistics provides us with a quantitative framework to utilise data for describing, summarising, and modelling the world around us. Engineering statistics combines engineering and statistics using scientific methods for analysing data. This course introduces students to the fundamental concepts of probability, random variables and their distributions, and shows how these ideas provide the theoretical foundation for data analysis through statistical modelling, estimation and hypothesis testing with a major emphasis on applications in electrical engineering and computer systems. On completion of this course, students will be able to apply statistical theory to make informed decisions and predictions relevant to engineering.

Master of Business

At a Glance

Awarding Institution	:	The University of Newcastle, Australia
Modes of Study	:	Full Time
Duration	:	12 Months
Commence and End Date	:	NIL

Overview

The Master of Business offers grounding in fundamental business areas such as accounting, finance, organisational behaviour, economics, marketing and management. Analytic and problem solving skills are emphasised through an applied understanding of the theoretical framework within which today's managers must operate, as well as the acquisition of practical skills in teamwork, writing, presentation and time-management. The ability to cope with rapid organisational and technological change is developed through and understanding of organisational behaviour, information systems and organisational change and development.

Admission Criteria

Local Qualifications

An undergraduate degree, or equivalent, from an approved institution (minimum GPA of 4.5 out of 7.0).

Minimum Age: 21

English Language Requirement

TOEFL score of 550 or IELTS (Academic) score of 6.5, with no sub-test score less than 6.0

Course Fees

Part-time

Course Fees	**Singapore-based Students**
Total Course Fee (Academic Year 2 Entry)	NIL
Other Mandatory Fees	
Application Fee (New Students)	NIL

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

All fees are subject to annual revision.

Modules

Accounting and Financial Management
Organisational Behaviour and Design
Entrepreneurship and Innovation
Foundations of Business Analysis
Globalisation
Human Resource Management
Managing Under Uncertainty
Marketing Management and Planning
Strategic Management

Mode of Assessment

Assessment of this programme may include assignments, tests, projects and final examinations.

Graduation Requirements

For graduation requirements, please refer here.

Annex | Module Outlines

Accounting and Financial Management
This module introduces financial and management accounting to non-accountants. It aims to provide an understanding of the main accounting concepts and the practical use of accounting and financial information for decision making and the achievement of business goals.

Organisational Behaviour and Design
This module explores issues related to organisational structural form, human behaviour and the management of people in organisations. It allows students to examine different perspectives on managing people and designing organisations, and to understand the determinants of interpersonal and team interactions in organisational environments. Attention focuses on the major theoretical, conceptual and empirical contributions relevant to designing organisations, and understanding and managing human behaviour within organisations. Case studies are used to assist students to relate content material to practical management.

Entrepreneurship and Innovation
The module provides a framework for understanding the process of creating and managing innovative organisations. This will enable students to deal successfully with dynamic demands from markets and customers, that are becoming even more sophisticated and knowledgeable.

Foundations of Business Analysis
Intelligent business decisions rely upon timely and accurate analysis of information. This module introduces students to the concepts, knowledge and techniques required to identify business needs and solve business problems. Within the module, students develop the ability to collect data from stakeholders, and convert this data into actionable information that can assist in business decision-making. The skills developed throughout this module can be applied to new insights and understanding across all functional areas of business.

Globalisation
This module analyses the challenges and opportunities presented by the globalisation of markets and production for both domestic and multinational firms. The environment for global business is divided into three aspects; social and cultural; government and political; economic and technological. The module develops analytical frameworks encompassing economic and management theories; government policies; national differences in political, economic, legal and cultural systems to assess the challenges and opportunities presented by an increasingly integrated and interdependent global economy. Topics include the comparative economic, political, social environment of developed, emerging and transitional economies; cross-cultural management; managing geopolitics and international risk; assessing nongovernmental organisations and the regulation of the international economy such as the WTO and IMF; the costs-benefits of foreign investment; critiques of globalisation.

Human Resource Management
This module provides an introduction to human resource management (HRM), and to frameworks explaining the core functions of HRM i.e. planning, recruitment, development, reward, voice and exit. Students will consider how responsibility for people management is distributed inside and outside the organisation. The module takes a very practical view of HRM, using many examples, exercises, and cases. Students are encouraged to think about what HRM means - how it differs according to the nature of work, by organisation, by industry sector, and in different regions and countries - and to consider what constitutes ethical human resource management.

Managing Under Uncertainty

Managing Under Uncertainty (MUU) develops introductory skills concerning managerial decision making. Students will develop an understanding of decision making processes with a focus on critical judgment, analytical logical reasoning and creative problem solving. Students will also be introduced to decision-making challenges and contexts under incomplete information.

Marketing Management and Planning

Marketing plays a vital role in creating sustainable competitive advantage for organisations with limited resources, and that operate in dynamic competitive environments. In doing so marketing provides the focus for creating and maintaining value for customers and organisational profit. Drawing from a preliminary review of basic marketing concepts and processes, Marketing Management develops a set of key analytical tools to enhance managers' understanding of, and the ability to, manage key strategic issues and decisions. Marketing Management and Planning is designed as a beneficial stand-alone unit for all managers and provides a strong foundation for further marketing studies.

Strategic Management

Strategic Management informs students of issues and perspectives in strategic management and corporate policy. This module also tests knowledge and skills through a range of relevant challenges such as debates, case studies and participation in a corporate policy game or a management consultancy in addition to an exam.

Master of Analytics

At a Glance

Awarding Institution	:	Massey University, New Zealand
Modes of Study	:	Full-time (International & Singapore-based Students) Part-time (Singapore-based Students)
Duration	:	12 months (Full-time) 24 months (Part-time)
Commencement & End Date	:	NIL

Overview

The Master of Analytics programme will equip candidates with both the technical abilities and competence in devising data-driven solutions. These are the skills needed to transform massive amounts of data into intelligence that is useful for crucial organisation decisions.

The course will cover the fundamental theoretical concepts in analytics as well as the latest and cutting-edge technological applications in the industry such as Python and R programming, together with SQL (Structured Query Language). Students will then learn how these tools are applied in the specialisation of their choice.

In the last phase of the programme, students will need to complete an applied analytics project, where the knowledge and skills they learnt will be put into practice.

Career Opportunities

- Business Analyst
- Investment Specialist
- Customer Insights Officer
- Database Analyst
- Business Insight Executive
- Supply Management Specialist
- Business Intelligence Specialist
- Machine Learning Specialist

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Admission Criteria

Local Qualifications

- Have sufficient background in statistical analysis tools to satisfy the Academic Board that they have the capacity to undertake the programme; and
- Have been awarded or qualified for a Bachelor's degree in a relevant subject, with a B-grade average across the higher level courses, or equivalent; or
- Have been awarded or qualified for a Bachelor's degree, and have completed at least two years' experience in a relevant field of work or professional activity, or equivalent

English Language Proficiency

The requirement is a minimum IELTS score of 6.5 with no component below 6.0 (or an equivalent English language test).

Minimum Age Requirement: 21 years old

International Qualifications

https://www.psb-academy.edu.sg/intl-adm/

Course Fees

Full-time

Course Fees	**Singapore-based Students**	**International Students**
Total Course Fee	NIL	NIL
Other Mandatory Fees		
Application Fee (New Students)	NIL	NIL
Student Development and Administration Fee (New Students)	NIL	NIL

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

All fees are subject to annual revision.

Modules

The programme consists of 4 core modules, 2 elective modules (Marketing or Finance Track), and a final project.

Core Modules

- Applied Econometric Methods
- Data Mastery: Scripting,
- Databases and Data Privacy
- Multivariate Analysis for Big Data
- Practical Data Mining

Marketing Track Modules

- Customer Insights
- Return on Marketing Investment

Finance Track Modules

- Big Data in Finance and Banking
- Managerial Finance

Final Project

- Applied Analytics Project

Mode of Assessment

Assessment methods include written examinations, assignments, and projects.

Graduation Requirements

For graduation requirements, please refer here.

Annex | Module Outlines

Applied Analytics Project

Under the supervision of academic staff, students will work with an external organisation on the application of computer-based analytics tools to a project in the domain of business analytics, healthcare system analytics, or public policy analytics. Special attention is given to privacy and ethical considerations, and to the (visual) communication of results. Students will learn to work effectively and efficiently to identify an analytic problem, assess and compile data sources through computerized scripts, analyse the data through computer programming and statistical packages and formulate ways to address the problem. The result of the analysis will be communicated to enable the client organisation to gain new insights into the problem or opportunity.

Applied Econometric Methods

This module covers the specification, estimation and validation of econometric models for analysis and forecasting, incorporating in-depth discussions regarding the treatment of common problems encountered in data analysis. Students will learn to evaluate the use of data models and their implications for data analysis., specify, estimate, and validate econometric models for analysis and forecasting, undertake empirical studies using statistical software to interpret the resulting computer outputs and finally identify and resolve common problems encountered in data analysis.

Big Data in Finance and Banking

This modules covers the study of big data application in finance and banking through a combination of theory and practice. Students will learn to use relevant theory to critically evaluate the applications of big data and data analytics and critically assess the future direction of innovation, and the challenges related to big data application in finance and banking. Students will also learn to apply a range of analytics to selected banking and financial data and draw practical conclusions from the data and analyse complex data and present the results of the analysis using appropriate media.

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Customer Insights

This modules covers a range of analytical techniques that is implemented using real-world data. Emphasis is also given to effective presentation of insights to a non-technical audience. Students will learn to obtain customer insights from the quantitative analysis of internal company and external market data, undertake customer base analysis to determine the loyalty and lifetime value of existing customers, analyse product preference and brand competition to identify opportunities to recruit new customers and effectively communicate data-driven insights and business intelligence to a non-technical audience.

Data Mastery: Scripting, Databases and Data Privacy

This module covers an introduction to the field of analytics, including the process of identifying an analytics problem in context, identifying sources and acquiring data, preparing data for analysis to address the problem. Emphasis is placed on developing programming skills relevant for data processing and data retrieval from databases. Special attention is given to privacy, security and ethical considerations surrounding data, and to communication of results.

Managerial Finance

This module covers the theory of finance with an emphasis on managerial decision making. Students will learn to apply the theories of finance to managerial goals and decision making, in the local and global environment. Students will also learn to value financial assets incorporating the principles of time value of money and risk and return, analyse short and long-term decisions using accepted financial management techniques and evaluate firm financing, capital structure, and dividend decisions using financial theory.

Multivariate Analysis for Big Data

This module covers the research methods suitable for the analysis of big datasets containing many variables. Students will learn the fundamentals of data visualisation, customer segmentation, factor analysis and latent class analysis with examples taken from business and health fields. Emphasis will be placed on achieving a conceptual understanding of the methods in order to implement and interpret the outcomes of multivariate analyses.

Practical Data Mining

This module covers the practical approach to data mining with large volumes of complex data. Students will learn to prepare, cleanse and explore data; subjects such as supervised and unsupervised modelling with association rules and market basket analysis, decision trees, multi-layer neural networks, k-nearest neighbours, k-means clustering and self-organising maps, ensemble and bundling techniques, text mining and the use of leading software tools coupled with business examples and research literature.

Return on Marketing Investment

The module covers the development of computer skills for the empirical analysis of the return of marketing investments on sales and profits, for the purpose of supporting marketing decision making. The coverage includes a wide variety of econometric methods, statistical programming approaches, types of marketing investments, and the reporting of the results.

Master of Management

At a Glance

Awarding Institution	:	Massey University, New Zealand
Modes of Study	:	Full-time (International & Singapore-based Students) Part-time (Singapore-based Students)
Duration	:	12 months (Full-time & Part-time)
Commencement & End Date	:	NIL

Overview

The Master of Management is a professional, relevant and contemporary qualification. Management involves both being able to work independently and making management decisions. Students will need to be able to work with and direct teams of people.

The Master of Management will help students develop the skills needed for effective management of people within your organisation and externally.

The core course offers an introduction to business management in Aotearoa New Zealand, and the skills, tools and techniques needed for success in professional business practice.. The degree also provide a broad range of business management specialisations to suit student interest to enable them to upskill in the core fundamentals of their chosen area

Admission Criteria

Local Qualifications

- Have been awarded or qualified for a Bachelor's degree in a relevant subject, with a B- grade average across the higher level courses, or equivalent

For progression to Part 2:

- The course is divided into 2 parts: Part One is 120 credits, and Part Two is 60 Credits. Students must complete the 120 credits of Part One with a minimum grade B- before proceeding to Part Two.

English Language Proficiency

The requirement is a minimum IELTS score of 6.5 with no component below 6.0 (or an equivalent English language test).

Minimum Age Requirement: 21 years old

International Qualifications

https://www.psb-academy.edu.sg/intl-adm/

Course Fees

Full-time

Course Fees	**Singapore-based Students**	**International Students**
Total Course Fee	NIL	NIL
Other Mandatory Fees		
Application Fee (New Students)	NIL	NIL
Student Development and Administration Fee (New Students)	NIL	NIL

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

All fees are subject to annual revision.

Modules

The programme consists of 4 core modules, 2 elective modules (Marketing or Finance Track), and a final project.

Part One

Core Module
- Examining Business Dilemmas

Choose 1 Specialism
Human Resource Management Specialism
- Human Resource Management and Workplace Relations
- Competitive Advantage and HRM Strategy
- International Human Resource Management

Marketing Specialism
- Essentials of Marketing
- Digital Marketing
- Marketing Strategy

Sustainability Specialism
- Business and Sustainability
- Corporate Citizenship and Responsibility
- Advanced Contemporary Issues in Sustainability

Part Two

Core Module
Professional Pracitce

Mode of Assessment

Assessment methods include written examinations, assignments, and projects.

Graduation Requirements

For graduation requirements, please refer here.

Annex | Module Outlines

Advanced Contemporary Issues in Sustainability
Students will critique the business case for sustainability and develop holistic sustainability strategies to address contemporary economic, ethical, environmental, and social concerns for business, including those relating to sustainable supply chain management, sustainable operations management, the UN Sustainable Development Goals, and ethical trade.

Business and Sustainability
This module ntroduces an analysis of the relationships between the business community, the natural environment, and social and environmental sustainability. The module also examines global debates on social and environmental issues, introduces theories of sustainability, and considers the implications of sustainability for business policy and management.

Competitive Advantage and HRM Strategy
This module provides an examination of how strategic human resource management theory and practice contributes to competitive advantage in business enterprises. Particular reference is made to the environmental factors that influence talent management in New Zealand and globally.

Corporate Citizenship and Responsibility
This module provides an advanced critique of the concepts of corporate social responsibility (CSR), business ethics, stakeholder management, and their implications for the management of business organisations.

Digital Marketing
This module examines the theoretical assumptions underlying digital marketing practices. Students will learn to critically evaluate how digital marketing tools are effectively utilised in an organisation's overall marketing effort, analyse ethical and legal issues associated with the use of digital marketing tools and develop a digital marketing strategy.

Essentials of Marketing
This module explain marketing concepts, examine the application of marketing concepts to traditional and non-traditional markets and practice an evidence based approach to the formulation of marketing strategy.

Examining Business Dilemmas
This module delivers a comprehensive examination of business dilemmas. It connects theory around globalisation, governance, strategy, and performance to practice, in order to conduct rigorous applied investigations and solve problems.

Human Resource Management and Workplace Relations
This module introduces the area of Human Resource Management and Workplace Relations. Specifically, the focus of the module is on the principles and practices associated with organisational behaviour, employment relations, human resources management and development.

International Human Resource Management
This module provides an examination of the management of employees from an international perspective, including comparative HRM, the practice of HRM in multinational firm, and developments in the emerging field of Strategic International Human Resource Management (SIHRM).

Marketing Strategy

This modules applies theories of marketing strategy to business problem, critically evaluate how marketing strategy differs across marketing contexts. Students will learn to develop a marketing strategy based on a sustainable competitive advantage.

Professional Pracitce

In this module, students will undertake a professional action investigation within the subject area in which the Master of Management is being completed. Investigations may be conducted either individually or in groups and assessment of the outcome of the investigation may be in a variety of ways including written and oral presentations.

Bachelor of Computer Science (Software Engineering)

At a Glance

Awarding Institution	:	La Trobe University, Australia
Modes of Study	:	Full-time (International & Singapore-based Students) Part-time (Singapore-based Students)
Duration	:	Nil Nil
Intakes	:	Nil

Overview

The Bachelor of Computer Science (Software Engineering) provides a comprehensive foundation in modern software development, grounded in core software engineering principles and practices.

Students will develop competencies in algorithms and data structures, full-stack web development, and user interface design, alongside an understanding of software measurement and testing methodologies, as well as cloud-based web and mobile application development.

This programme covers key areas including object-oriented programming, mobile application development, professional software development practices, and programming environments. Through a combination of theoretical knowledge and practical application, students will be equipped to design, develop, and evaluate robust, scalable, and industry-relevant software systems.

Career Opportunities

- Nil

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Admission Criteria

Minimum age requirement: 16 years old

Local Qualifications

Entry to Year 1

- GCE A-Level (Minimum 3 subjects in H2 level or 2 subjects at H2 level and up to 2 subjects at H1 level); OR
- Other equivalent qualifications would be assessed on a case-by-case basis.

Entry to Year 2

- Applicants should have relevant polytechnic diplomas or other diplomas approved by La Trobe University.
- Successful completion of the following PSB Academy's Diploma programmes may be eligible for direct entry into Year 2
    - Diploma in Cyber Security
    - Diploma in InfoComm Technology (E-Learning)
    - Diploma in InfoComm Technology
- All other qualifications not listed will be considered by La Trobe University on a case-by-case basis.

International Qualifications:

Please refer to https://www.psb-academy.edu.sg/intl-adm/

English Language Requirement

- GCE O-Level English Grade C or above; or
- IELTS score of 6.0 with no band less than 6.0 (or equivalent)

English language test scores must be no older than two years old at the date of application to La Trobe University. Details of the policy and information on any other English tests accepted by the University can be found at: https://www.latrobe.edu.au/study/apply/international/requirements

Course Fees

Full-time

Course Fees	**Singapore-based Students**	**International Students**
Total Course Fee (24 Modules)	Nil	Nil
Total Course Fee (16 Modules)^	Nil	Nil
Total Course Fee (14 Modules)^	Nil	Nil
Total Course Fee (12 Modules)^	Nil	Nil
Progressing Student Fee (16 Modules)	Nil	Nil
Other Mandatory Fees		
Application Fee (New Students)	S$160.00	S$490.00
Student Development and Administration Fee (New Students)	S$430.00	S$1,280.00
Student Development and Administration Fee (Progressing Students)	S$430.00	S$580.00

Part-time

Course Fees	**Singapore-based Students**
Total Course Fee (24 Modules)	Nil
Total Course Fee (16 Modules)^	Nil
Total Course Fee (14 Modules)^	Nil
Total Course Fee (12 Modules)^	Nil
Progressing Student Fee (16 Modules)	Nil
Other Mandatory Fees	
Application Fee (New Students)	S$160.00

Miscellaneous Fees: https://www.psb-academy.edu.sg/apply-now/

All fees are subject to annual revision.

^ Relevant Polytechnic Diploma holders can enjoy 8 to 12 module exemptions, subject to university entry requirements.

Modules

Academic Year 1 Modules

- Cryptography and Security
- Database Fundamentals
- Inside Information Technology
- Introduction to Artificial Intelligence
- Introduction to Cybersecurity
- Network Engineering Fundamentals
- Object-Oriented Programming Fundamentals
- Programming Environment

Academic Year 2 Modules

- Algorithms and Data Structures
- Intermediate Object-Oriented Programming
- Industry Project
- Professional Practices and Entrepreneurship in Information Technology
- Software Development, Security and Operations
- System Analysis and Design
- User Interface Design

Academic Year 3 Modules

- Capstone Project
- Cloud-Based Web Application
- Mobile Application Development
- Professional Software Development
- Project Management
- Software Measurement and Testing

Elective Modules (Choose 3 of the following)

- Artificial Intelligence Fundamentals
- Computational Intelligence for Data Analytics
- Data Security and Information Assurance
- Deep Learning
- Image Processing
- Introduction to Penetration Testing

Mode of Assessment

Assessment of this programme may include assignments, tests, projects, reports, lab work and final examinations.

Annex | Module Outlines

Algorithms and Data Structures

In this module, students will learn to explain the overall objectives of the field of Algorithms and Data Structures. They will learn to identify and implement a range of data structures and searching and sorting algorithms in the context of computing and Java. Through the comparison and analysis of these different data structures and algorithms, they will apply a suitable one to solve a problem. Finally, students will design a solution for a problem, implement it in Java and evaluate its performance using an appropriate measure.

Artificial Intelligence Fundamentals

This module provides students with an introduction to core concepts and methodologies in artificial intelligence and knowledge representation. Students will examine appropriate representations for state space search and game-playing problems to address practical computational challenges. The module also explores knowledge representation techniques, including semantic networks, scripts, frames and logic-based mechanisms, alongside the development of simple Prolog programmes to support automated reasoning. In addition, students will construct basic expert systems to address real-world problems and analyse as well as design foundational machine learning algorithms to model a practical case.

Capstone Project

In this module, students will be able to apply advanced project management skills to the implementation phases of a substantive development project. Students will design and implement industry-standard technical solutions within the domains of software development or cybersecurity practice. The module also focuses on the effective communication of project outcomes to both technical and non-technical audiences and reflection on feedback. They will then construct professional system documentation and advanced technical reports to meet the requirements of software or cybersecurity industrial standards.

Cloud-Based Web Application

This module examines the principles and practices of modern web application development. Students will evaluate JavaScript based front end designs in relation to specified web application requirements. They will be able to design and develop backend web servers to support functional and scalable web applications. The module also explores the use of cloud infrastructure and web services for the deployment of web applications. In addition, students will apply contemporary software engineering tools to develop robust and scalable code for web systems. Finally, the module requires students to compare and critically evaluate appropriate storage technologies to support effective website design.

Computational Intelligence for Data Analytics

This module introduces students to the technologies and applications of computational intelligence systems. Students will examine the major components and key considerations involved in developing computational intelligence systems, including regression and classification models using machine learning and neural networks. The module also explores learning technologies in intelligent systems and the relationship between computational intelligence and knowledge engineering. In addition, students will develop practical skills by implementing neural network models for data forecasting and predictive analysis.

Cryptography and Security

This module introduces students to the basic mathematical principles and constructions underlying cryptographic methods and employ these to solve simple problems. They will be able to identify and summarise a range of cryptographic techniques, including private key systems such as AES (Advanced Encryption System), and public key systems such as RSA (Rivest, Shamir, Adleman). This module also explores the different contexts of application of cryptographic mechanisms in various communication and cybersecurity contexts, such as authentication and secure transmission.

Database Fundamentals

This module introduces the fundamental principles and practices of database design and management. Students will apply database modelling techniques using Entity Relationship and Enhanced Entity Relationship diagrams, and perform the transformation of these modules into relational database designs. Building on this foundation, the module explores normalisation techniques to support the development of efficient and well-structured database systems. Students will then implement database solutions using SQL, while applying key concepts in database management and administration. In addition, the module examines the relational model through the use of relational algebra to describe database operations. Finally, students will evaluate potential risks, as well as the ethical and social considerations associated with database system design.

Data Security and Information Assurance

This module examines the principles and practices of securing computer systems through effective access control mechanisms. Students will develop well-developed knowledge and skills to safeguard data, systems and networks against unauthorised access and cyber threats. The module also introduces the use of simulation tools to analyse data security threats. Data privacy and cryptography controls will be examined, allowing students to critically examine methods used to protect sensitive information and maintain data integrity within modern computing systems.

Deep Learning

This module introduces the fundamental principles and applications of deep learning, a central machine learning method fueling the artificial intelligence revolution. It starts with fundamental concepts before progressing to practical implementations of deep learning algorithms. Students will explore how deep learning techniques can be applied to real-world problems in computer vision and natural language processing. They will be introduced to the popular deep learning programming framework of PyTorch and popular model architectures such as convolutional, recurrent and transformer neural networks. Through practical applications, students will develop the skills required to design and implement scalable deep learning systems for real-world and large-scale deployment.

Image Processing

This module introduces the students to the principles and techniques of image processing and computer vision for real-world applications. Students will develop the ability to write Python code to implement image classification tasks and address design issues. The module also explores the implementation of object detection models for real-time image recognition. In addition, students will evaluate the performance and robustness of different image processing techniques in practical contexts. They will analyse a real-world problem and investigate different image processing techniques for classification, object detection, segmentation and image retrieval.

Industry Project

In this module, students will learn to apply discipline knowledge and skills from a STEM discipline to a relevant industry-based project. They will critically evaluate their transferable employability skills, knowledge, and personal attributes, and develop a structured learning and professional development plan. Students will demonstrate the ability to work effectively within a team to collaboratively and creatively address real-world problems, while applying project management principles and practices to achieve defined project milestones and outcomes. By the end of the module, students will be able to reflect crticially on the industry experience, evaluate their skills development and strengths as a member of a professional team and develop strategies to support their ongoing professional growth and career progression.

Intermediate Object-Oriented Programming

This module examines advanced programming concepts and paradigms used in modern software development. Students will explore the use of interfaces and abstract classes, and evaluate their roles in promoting modularity, flexibility and code reuse. The module also compares and contrasts procedural, functional and object-oriented programming paradigms to highlight their design philosophies and applications. In addition, students will apply functional programming concepts such as lambda expressions in programme development. The module further introduces concurrent programming using threads, with an emphasis on designing deadlock-free programmes. Finally, students will investigate parallel data processing techniques and apply the MapReduce paradigm to address large-scale data processing problems.

Introduction to Artificial Intelligence

This module introduces the core concepts and key terminology associated with artificial intelligence. Students will examine how artificial intelligence can be applied in modern systems and learn to identify appropriate AI methods to address a wide range of problems. The module also explores potential AI solutions that support business innovation and technological transformation. In addition, students will critically examine the challenges, limitations and ethical considerations associated with the development and deployment of artificial intelligence systems.

Introduction to Cybersecurity

This module explores emerging practices, regulations and standards in cybersecurity and examines their implications for digital security. Students will develop foundational skills in identifying malware and implementing measures to secure applications, systems and networks. The module also focuses on the application and comparison of different approaches to cyber risk management in addressing real-world digital security challenges. In addition, students will collaborate in teams to investigate and propose solutions such as cryptographic techniques, web security measures and digital forensic methods to enhance data protection and defend against cyber threats.

Introduction to Penetration Testing

Penetration Testing encompasses the evaluation of organisational vulnerabilities by conducting thorough security testing. Students will learn to review and compare different concepts and approaches to penetration testing, while gaining an understanding of established methodologies and techniques used to assess system security. The module also focuses on the identification and exploitation of common security vulnerabilities, alongside the development of appropriate recommendations for security controls. In addition, students will learn to prepare and present professional client reports that clearly communicate key findings to both technical and non-technical audiences.

Inside Information Technology

This module introduces students to the fundamental concepts of information technology and how computer systems process and deliver data and information to users. Students will be able to interpret the roles of key IT components, including computer systems, computer networks and the World Wide Web, in supporting the global exchange of information. The module also explores the principles of web development and their application in the design and construction of basic web systems. In addition, students will apply foundational IT knowledge, including HTML and computer networking concepts, to address typical real-world information technology challenges.

Mobile Application Development

This module examines the fundamental principles of mobile computing and mobile application development, and compares these with applications developed for other computing platforms. Students will explore mobile user interface abstractions and usability considerations, and apply this understanding to the design and development of mobile applications for at least one mobile platform. The module also introduces the concept of context-aware computing, where students will design and develop applications that incorporate sensors and location-based services. In addition, they will apply appropriate software development methodologies to collaboratively design, develop and enhance modern mobile applications within a team-based environment.

Network Engineering Fundamentals

In this module, students are introduced to the foundational concepts of computer networking. The module covers the overall Open Systems Interconnection (OSI) model and its associated protocols and analyse how its layers interact with adjacent layers to facilitate network communication. Students will learn the functions of each OSI layer and apply this knowledge to the design and construction of basic network systems. In addition, they will study the evolution of Local Area Network (LAN) technologies, with particular emphasis on Ethernet, and evaluate appropriate physical network standards for different networking scenarios. At the end of the module, students will be able to describe TCP/IP-based network protocol suite and compare with OSI model.

Object-Oriented Programming Fundamentals

This module introduces the principles and practices of Object-Oriented (OO) analysis, design and implementation in software development. Students will examine the differences between traditional approaches to system development and OO methodologies, where the fundamental construct is the object that integrates both data structures and behaviour. The module also explores the principles of abstract data types and their role in localising changes and minimising the impact of system modifications through OO design. In addition, students will evaluate how OO techniques support code sharing and reuse, thereby improving development efficiency. Finally, students will apply OO methods to design and implement computer programmes that address real-world problems.

Professional Practices and Entrepreneurship in Information Technology

This module examines key considerations in entrepreneurship and professional practice within the context of information technology. Students will evaluate diverse funding options that support entrepreneurial ventures while considering the essential stages of business development. The module also focuses on the critical analysis of IT business ventures in relation to social, legal and ethical issues, while examining the responsibilities of IT professionals to employers, clients and society. In addition, students will reflect on their personal perspectives regarding relationship management and individual entrepreneurial capability, and develop the ability to articulate professional reflections that support career readiness. The module further explores the application of ethical theories to analyse ethical dilemmas in IT and business contexts through critical discussion and debate.

Professional Software Development

Upon successful completion of this module, students will be able to critically evaluate design patterns and their applications within object-oriented software design. They will develop the capability to engineer object-oriented software solutions through the effective application of established design patterns, and implement these solutions using the C++ programming language. In addition, students will be able to analyse emerging trends in software development and assess their potential evolution and impact on future software engineering practices.

Programming Environment

This module introduces fundamental principles of computational problem-solving and programming. Students will develop the ability to analyse simple data processing problems to identify relevant data and high-level processing involved, through the application of the three basic programming constructs: sequence, selection, and iteration, to design computational solutions. They will also explore the use of basic data structures, including lists and dictionaries, to address batch data processing tasks. Through practical exercises, students will implement executable solutions using the Python programming language, developing foundational programming skills applicable to a range of computational contexts.

Project Management

This module focuses on the principles and practices of professional project design and management within software and cybersecurity contexts. Students will develop project design documentation that aligns with recognised industry standards in software development and cybersecurity. The module also explores the application of team dynamics to support effective collaboration and the facilitation of productive project team meetings. In addition, students will design an information technology project management framework that integrates security analysis and risk mitigation throughout the project lifecycle. Finally, students will critically analyse, refine and document system requirements to address real world problems in software or cybersecurity systems.

Software Development, Security and Operations

This module introduces students to the principles and practices underlying modern DevOps-based software development and their impact on software delivery and operations. The module also focuses on the design and implementation of continuous integration, continuous development and continuous testing (CI/CD/CT) pipelines to facilitate the accelerated delivery of high-quality software. In addition, students will apply branching version control strategies, dependency management and containerisation to manage software development projects effectively. They will learn to apply DevOps practices to infrastructure as code and pipeline as code to support automated and scalable software development environments.

Software Measurement and Testing

This module examines the principles and practices of software testing and quality assurance within the software development lifecycle. Students will analyse software and system requirements to identify requirement issues, quality risks, and inputs for test cases, plans and strategies. Students will also design and execute both manual and automated test cases using structured test design techniques and relevant tools. The module further focuses on the analysis and interpretation of quality metrics to evaluate program quality, complexity and test progress. In addition, students will explore the various industry based roles and processes involved in modern software testing and their integration within the broader software development lifecycle.

System Analysis and Design

This module introduces students to system analysis and design with Object-Oriented (OO) modelling techniques for software system engineering. Major topics include introduction to software development process, requirements modelling, domain modelling, behavioural modelling, structural modelling and dynamic modelling. Students will gain practical experience in documenting system analysis and design using Unified Modelling Language (UML), enabling them to clearly communicate system structures and processes within professional development environments.

User Interface Design

This module introduces the principles and practices of user interface design and evaluation within a collaborative environment. Students will work effectively in teams to analyse and identify user interface design issues based on established design principles. Building on this, they will apply wireframing tools to develop both low fidelity and high fidelity prototypes. The module also focuses on conducting user interface evaluations using methofs such as cognitive walkthroughs and heuristics evaluation. In addition, students will employ statistical methods to interpret and evaluate usability testing results, supporting data driven improvements to interface design.