

# EMBRACE THE SPIRIT OF CHALLENGE



**A . P . U**  
ASIA PACIFIC UNIVERSITY  
OF TECHNOLOGY & INNOVATION

## SCHOOL OF ENGINEERING

[www.apu.edu.my](http://www.apu.edu.my)

### ■ **PRE-UNIVERSITY PROGRAMME**

Degree Foundation Programme

### ■ **DIPLOMA PROGRAMMES**

APIIT Diploma in Electrical & Electronic Engineering

### ■ **DEGREE PROGRAMMES**

- B. Eng (Hons) in Electrical & Electronic Engineering\*
- B. Eng (Hons) in Electronic Engineering with Information Technology\*
- B. Eng (Hons) in Telecommunication Engineering\*
- B. Eng (Hons) in Mechatronic Engineering\*
- B. Eng (Hons) in Petroleum Engineering



# AN AWARD-WINNING UNIVERSITY



## APU amongst the Highest Rated Universities

Rated at Tier 5 (Excellent) by Ministry of Education / Malaysian Qualifications Agency under SETARA 2011 & 2013

## RATED NUMBER 1 IN ASIA AND MALAYSIA FOR ITS MULTICULTURAL LEARNING EXPERIENCE

- Student Barometer Wave 2014, 'Studying with people from other cultures'

The Asia Pacific University of Technology & Innovation (APU) is amongst Malaysia's Premier Private Universities, and is where a unique fusion of technology, innovation and creativity works effectively towards preparing graduates for significant roles in business and society globally. APU has earned an enviable reputation as an award-winning University through its achievements in winning a host of prestigious awards at national and international levels.

Originally established as the Asia Pacific Institute of Information Technology (APIIT) in 1993 and Asia Pacific University College of Technology & Innovation (UCTI) in 2004, APU's sound approach to nurturing school leavers into qualified professionals has resulted in our graduates being highly sought after by employers. With an international student community from more than 100 countries studying in its Malaysian campus, APU offers a truly cosmopolitan learning environment which prepares students well for the global challenges which lie ahead. APU offers a wide range of degrees with Technology as a common core.



> APU's purpose-built state-of-the-art campus in TPM - opening in 2016.

It is APU's aim to nurture and encourage innovation through our programmes of study, with the intention of producing individuals who will learn, adapt and think differently in new and better ways.

The Asia Pacific University has and always will, continue to develop and deliver its academic programmes through unique and well-established international partnerships, particularly with Staffordshire University UK but also with other partners throughout the world. This formidable combination of Malaysian homegrown programmes fortified with international benchmarking, provides our students with the assurance that the qualifications gained from APU truly meet international quality standards.

APU was announced as among the Highest Rated Universities in Malaysia, being rated at TIER 5 (EXCELLENT) under the SETARA 2011 Ratings by the Ministry of Education (MOE) and Malaysian Qualifications Agency (MQA), and has maintained this Excellent rating in the latest SETARA 2013 Ratings announced on 17th November 2014.

APU's achievements bear testimony to our commitment to excellence in higher education and training, as well as innovative research and development and commercialization. APU (via APIIT) is Malaysia's first Institution to achieve Multimedia Super Corridor (MSC) Company Status. Through our network of APIIT Education Group branch campuses established in Sri Lanka and India, APU also reaches out to young aspiring professionals in these countries, providing them with a unique opportunity of experiencing international best practices in higher education using curricula, processes, resources and systems which have been developed in Malaysia. APU's academic programmes are approved by the Ministry of Education of Malaysia and the qualifications are accredited, or provisionally accredited by the Malaysian Qualifications Agency (MQA).



**APIIT Education Group** is the proud recipient of  
**Prime Minister's Award**  
and Export Excellence Award (Services)  
for Industry Excellence Awards - March 2011

The APIIT Education Group received the prestigious Prime Minister's Industry Excellence Award from the Prime Minister of Malaysia, Dato' Seri Mohd Najib Tun Razak. Only one organisation was selected to receive the Prime Minister's Industry Excellence Award from among nearly 30 other award recipients in 8 different categories.

The Industry Excellence Awards, organised by the Ministry of International Trade & Industry (MITI), recognises and rewards organisations for organisational excellence including competitiveness, innovativeness, market presence and export performance. Winning the Prime Minister's Industry Excellence Award is a significant milestone and an honour for APU as a leader in higher education. The award truly reflects our commitment and focus on quality, innovation, graduate employability and internationalisation.

# SCHOOL OF ENGINEERING

- **APIIT Diploma in Electrical & Electronic Engineering**
- **B. Eng (Hons) in Electrical & Electronic Engineering (Accredited)**
- **B. Eng (Hons) in Electronic Engineering with Information Technology (Accredited)**
- **B. Eng (Hons) in Telecommunication Engineering (Accredited)**
- **B. Eng (Hons) in Mechatronic Engineering (Accredited)**
- **B. Eng (Hons) in Petroleum Engineering (Provisionally Accredited)**



The School of Engineering at APU is one of our fastest growing schools and is gaining popularity among school leavers. This is because all the five engineering programmes offered by the School are current in terms of technology and are market driven, and thus have great employment opportunities.

The vision of the School is to be a leading provider of Engineering and Technology based education with innovative approaches to enhancing lifelong career opportunities. This is emphasised by our mission to provide engineering education based on a theoretical, experimental, and ethical foundation and enhanced by opportunities for participation in research, internships and interdisciplinary study.

For all degrees within the School, APU links with industry help to provide internship training placements for students. Internships are compulsory for all students as per the requirement of the Board of Engineers Malaysia.

# Worldwide Recognition Under Washington Accord

## International Recognition – Engineering Degrees Accredited Under The Washington Accord

**APU Engineering Degrees are fully accredited by the Board of Engineers Malaysia (BEM) which is a signatory to the Washington Accord.**

This accreditation ensures that APU Engineering Graduates will have the following benefits in countries who are signatories of the Washington Accord:

- Opportunities to register as a Graduate Engineer with Board of Engineers Malaysia (BEM) or the relevant professional bodies in other countries who are signatories under the Washington Accord.
- Pathways to becoming a Professional or Chartered Engineer.
- Assurance that graduates are considered as having met international academic standards for engineering practice.

## International Recognition

APU Engineering Degrees are Accredited Professionally by the Board of Engineers Malaysia (BEM) and are therefore recognised internationally under the Washington Accord. Recognition under the Washington Accord allows for APU engineering programmes to be recognised by countries such as Australia, Canada, Taiwan, Hong Kong, Ireland, Japan, South Korea, Malaysia, New Zealand, Singapore, South Africa, Turkey, Russia, the United Kingdom and the United States who are all signatories of the accord.

This allows APU graduates to be recognised in these countries for career opportunities towards achieving Professional/Chartered Engineer status or for further education progression.

Furthermore, many countries which are not yet signatories to the Washington Accord also use this as a benchmark in recognising Engineering Degrees.



- B. Eng (Hons) in Electrical & Electronic Engineering
- B. Eng (Hons) in Electronic Engineering with Information Technology
- B. Eng (Hons) in Telecommunication Engineering
- B. Eng (Hons) in Mechatronic Engineering

With this achievement, recognition under the Washington Accord enables APU Engineering graduates to work in any country in the world who are also a signatory to the Accord, without the need to re-qualify.

The recognition is of utmost importance to the engineering education in Malaysia as graduates from accredited engineering degree programmes from Washington Accord signatory countries are considered as meeting the academic standard for practices in engineering at the international level.

Please refer to <http://www.bem.org.my/v3/listofaccreditedprogrammes.html>

The above benefits are applicable in the following countries, which are signatory to the Washington Accord:

**“Signatories have full rights of participation in the Accord; qualifications accredited or recognised by other signatories are recognised by each signatory as being substantially equivalent to accredited or recognised qualifications within its own jurisdiction”**

<http://www.ieagreements.org/Washington-Accord/signatories.cfm>

- |   |  |  |
|---|--|--|
| • Australia - Represented by Engineers Australia (1989)   | • Ireland - Represented by Engineers Ireland (1989)                                    | • Singapore - Represented by Institution of Engineers Singapore (2006)                     |
| • Canada - Represented by Engineers Canada (1989)   | • Japan - Represented by Japan Accreditation Board for Engineering Education (2005)    | • South Africa - Represented by Engineering Council of South Africa (1999)                 |
| • Chinese Taipei - Represented by Institute of Engineering Education Taiwan (2007)                          | • Korea - Represented by Accreditation Board for Engineering Education of Korea (2007) | • Sri Lanka - Represented by Institution of Engineers Sri Lanka (2014)                     |
| • Hong Kong China - Represented by The Hong Kong Institution of Engineers (1995)                            | • Malaysia - Represented by Board of Engineers Malaysia (2009)                         | • Turkey - Represented by MUDEK (2011)   |
| • India - Represented by National Board of Accreditation (2014)   | • New Zealand - Represented by Institution of Professional Engineers NZ (1989)         | • United Kingdom - Represented by Engineering Council UK (1989)                            |
| (Applies only to programmes accredited by NBA offered by education providers accepted by NBA institutions.) | • Russia - Represented by Association for Engineering Education of Russia (2012)       | • United States - Represented by Accreditation Board for Engineering and Technology (1989) |

**“Organisations holding provisional status have been identified as having qualification accreditation or recognition procedures that are potentially suitable for the purposes of the Accord; those organisations are further developing those procedures with the goal of achieving signatory status in due course; qualifications accredited or recognised by organisations holding provisional status are not recognised by the signatories”**

<http://www.ieagreements.org/Washington-Accord/signatories.cfm>

- |  |   |
|--|---|
| • Bangladesh - Represented by Board of Accreditation for Engineering and Technical Education | • Pakistan - Represented by Pakistan Engineering Council        |
| • China - Represented by China Association for Science and Technology                        | • Peru - Represented by ICACIT                                  |
|  | • Philippines - Represented by Philippine Technological Council |



## The aims of the Engineering Programmes are to provide:

- A broad education in the fundamentals of engineering principles and professional practices that form a strong flexible base which enables graduates to fill a variety of responsible engineering positions
- Specialised development in one area of concentration that will enable graduates to successfully perform at entry-level engineering positions. Some graduates will prefer and be capable of continuing their education in a graduate school
- A stimulating and accessible course of study necessary to understand the impact of engineering solutions in a global and social context, analysis and contemporary engineering issues which the students can develop and apply in their near future
- An opportunity for students with different abilities and different educational experiences to benefit intellectually and vocationally from their education in engineering courses
- Graduates who are able to demonstrate intelligence, ingenuity, inventiveness and independence in all areas of endeavour
- An intellectually demanding and stimulating programme of study and develop a life-long commitment to learning that develops graduates who are imaginative and innovative and who show initiative and creativity in their work

APU Engineering Degrees are accredited by the **Board of Engineers Malaysia (BEM)**.

## Learning for Employability

Employers look for qualified people who have the technical know-how and the ability to communicate, work in teams and other personal skills.

At APU, our programmes are developed to provide you not only with interesting and stimulating modules to develop your mind, but also to enhance your knowledge and skills and increase your ability to compete for that dream job. You also need to possess the ability to learn, develop and adapt. Much of what is current knowledge will soon be out-of-date and the reality is that to succeed you need to be adaptable and innovative. We achieve this through the Five "I"s Model™:



## The Five "I"s Model™

- 1: Innovation** through the design of curriculum, the module content and the learning approaches
- 2: Integration** through developing your capabilities to interrelate knowledge and to work in multidisciplinary teams
- 3: Information** through developing your knowledge and also your abilities to communicate effectively and persuasively
- 4: Interactivity** through the use of group work to develop your teamwork skills and through the use of technology to achieve interactivity of devices and people
- 5: Imagination** in relation to new products, ideas, applications and solutions

There are many possible careers in Engineering depending not only on your degree but also on your personal skills and preferences. That is why a part of the course involves helping you to develop a career plan. Today a wide variety of organisations need more efficient, effective and competitive operations. Depending on your choice of degree your contribution to this can span many manufacturing and construction sectors as well as other sectors that need highly skilled employees. Some examples of such careers depending on your choice of APU degree are as follow:

## **B. Eng (Hons) in Electrical and Electronic Engineering**

From geographical information systems that can continuously provide the location of a vehicle to giant electric power generators, electrical and electronics engineers are responsible for a wide range of technologies. A degree in Electrical & Electronics Engineering offers challenging opportunities over a wide range of activities from research and design to operations, management and planning. Career choices are in diverse areas such as Power Systems, Electrical equipment manufacturing and testing, Biomedical Engineering and Computer Systems Engineering and also as technical experts on engineering projects in the Banking and Finance Industry.

## **B. Eng (Hons) in Electronic Engineering with Information Technology**

This Electronic Engineering programme with a specialisation in Information Technology is in essence, an integration of electronics hardware with computer software in systems design. It concerns with the design of integrated systems of embedded electronic components, networking of distributed computing environments and the development of software for communication between various entities (human to machine, or, machine to machine). A graduate in this programme can expect to be of high demand in such diverse industries as telecommunications, power, defence, oil and gas, automotive and aerospace.

## **B. Eng (Hons) in Telecommunication Engineering**

Telecommunication Engineering is the most rapidly developing and dynamic field of Engineering. Rapid growth in the telecommunication sector is evident from the deep penetration of the Internet and mobile phones in every corner of the world. Careers include design engineers of telecommunication and signal processing systems that provide essential electronic support networks for information technology industries and mobile/wireless and communication engineers. Graduates would also be employable in sectors such as broadcasting and general telecommunication services.

## **B. Eng (Hons) in Mechatronic Engineering**

The Mechatronic Engineering programme provides the technical and creative know-how needed to achieve the best possible engineering career path. Graduates are also sought after for management positions because of their broad skill base and knowledge of state-of-the-art technology. Careers span the range of fields which are normally covered by mechanical, electrical and computer engineering. Roles include designing consumer machines, industrial machines, robotics and automation for advanced manufacturing, robot control systems or aviation electronics, software and hardware development for real-time computer control systems among others.

## **B. Eng (Hons) in Petroleum Engineering**

Petroleum Engineering is the bridge connecting to the Oil & Gas Industry where engineers have a high level of technical expertise and skill, which they use to plan, design, set up, modify, optimise and monitor the processes in the Oil & Gas Industry. Petroleum Engineers are analytical engineers and creative thinkers in solving complex problems. They can practice on their own initiative but also contribute as a team member working with engineers from various disciplines.

Responsibilities of a Petroleum engineer include the following:

- Examining geologic and engineering data
- To determine sources of crude oil and gas,
- Examining the quality and quantity of the product,
- Separation of crude oil into different elements,

Typical occupations include working as a drilling engineer, reservoir engineer, production engineer, process engineers or equipment engineer to optimize oil and gas production.

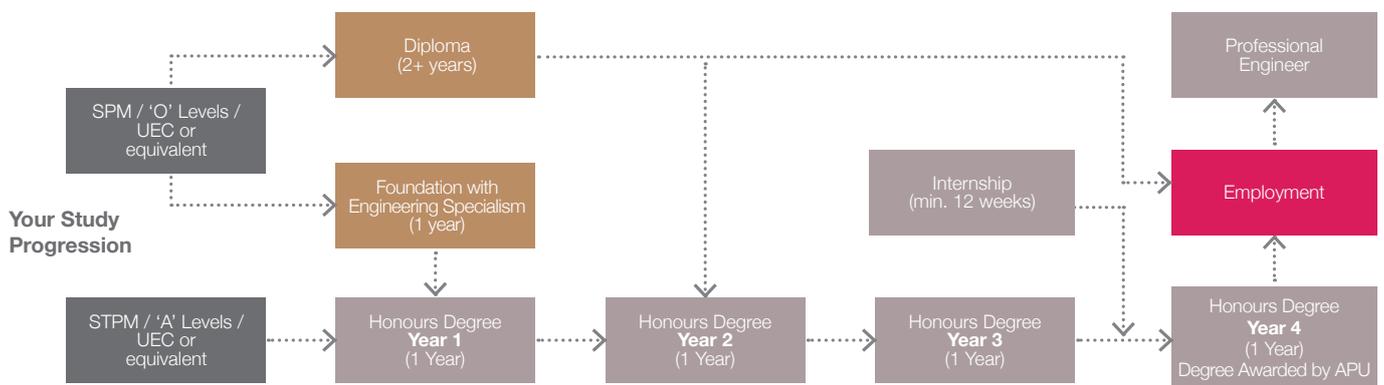
Potential employers are oil companies like Petronas, Exxon Mobil, Shell, Murphy Oil, Talisman, Petrofac, Newfield, Hess, Nippon Oil, and oil service companies like Schlumberger, Halliburton, Baker Hughes, M-I Swaco, UMW Drilling, ScomiOiltools, Dimension Bid, Geowell and Eastern Energy.

# PATHWAY @ APU

Whether you join APU immediately after your secondary education or transfer to us from another institution of higher learning, we offer programmes at several levels and entry points, depending on your prior qualifications and experience.

At APU, our Engineering programmes are designed to provide flexibility and choice. The Engineering Degree Programmes all have the same modules in the first year so that you can decide which of our Engineering degrees you would like to choose in the second year and continue in the third year and final year to graduation. On graduation with an accredited degree you will be able to register as a Graduate Member with the Board of Engineers Malaysia. After sufficient working experience and on fulfilling their requirements this will lead to becoming a Professional Engineer. This will allow you to use the title 'Ir.' (Ingenieur).

If you enter our foundation course first you will take a range of engineering modules together with other IT, business and skills modules to help you when you enter the degree and also to help you decide which of our degrees you want to select. At all times, our staff will be able to advise you on the choices available at each stage of your studies.



## Overall Programme Structure

<b>Foundation</b> 3 semesters / 1 year full-time	<b>Diploma</b> 6 semesters / 2+ years full-time	<b>Honours Degree</b> 8 semesters / 4 years full-time
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## FOUNDATION PROGRAMME

The Foundation programme gives you an opportunity to sample your future areas of study.

This helps you choose which Degree programme to pursue.

- An overall credit pass in 5 subjects at SPM level including Mathematics and Physics OR Chemistry, and a minimum of a pass in Bahasa Malaysia and Sejarah (History);
- 5 grade C passes at 'O' Level / GCSE which should include a credit in Mathematics and relevant Science subject; or
- A qualification that APU accepts as equivalent to the above.

## DIPLOMA PROGRAMMES

- An overall credit pass in 3 subjects at SPM level including Mathematics, and a minimum of a pass in any Science subject (Chemistry, Physics, Biology, Science & Technology OR General Science), Bahasa Malaysia and Sejarah (History); or
- Pass Sijil Tinggi Persekolahan Malaysia (STPM) or its equivalent with a pass in Mathematics, English and ONE (1) relevant science/technical/vocational subject at the SPM level;
- or Recognised Certificate in Engineering/Engineering Technology or its equivalent;
- or Recognised related Vocational and Technical/Skills Certificate or its equivalent with ONE (1) year of relevant work experience or a minimum of ONE (1) semester of a bridging programme.
- 3 grade C passes, including Mathematics, and a pass in any Science subject (Chemistry, Physics, Biology OR General Science) and English at 'O' Levels / GCSE; or
- a qualification that APU accepts as equivalent to the above.

## BACHELORS (HONS) DEGREE PROGRAMMES

### Direct Entry to Level 1 of the Degree:

- Pass STPM with at least principal / full pass / grade C (CGPA 2.0) in Mathematics and Physics or Chemistry and pass SPM with credit in Mathematics and one of the relevant science subjects – Physics / Chemistry / technical / vocational; or
- Pass 'A' Levels with at least a pass in Mathematics and Physics or Chemistry and pass 'O' Levels / GCSE or equivalent with Grade C in Mathematics and one of the science subjects - Physics or Chemistry; or
- Pass UEC or Senior Middle Three (SM3) with Grade B in five (5) subjects including Mathematics and one of the relevant science subjects - Physics or Chemistry and a pass in Bahasa Malaysia; or
- Pass The APU Foundation or equivalent; or
- A qualification that APU accepts as equivalent to the above.

### Direct Entry to Level 2 of the Degree:

- Students with Diploma or Higher National Diploma in Engineering from other colleges
- Successful completion of studies in another recognised institute with academic credits equivalent to Level 1 of an Honours degree  
(Subject to the approval of the APU Academic Board)

## ENGLISH REQUIREMENTS

(only applicable for International Students)

### Foundation and Diploma Programmes

- IELTS : 5.5
- TOEFL : 65 (Internet Based Test), 513 (Paper Based Test), 183 (Computer Based Test)
- Other Certification or Evidence of English Proficiency that APU accepts as equivalent to the above

Applicants who do not possess the above will be required to sit for the APU English Placement Test, and based on the outcome of the test may be required to attend the APU Intensive English Programme (IEP) prior to commencement of the Foundation/Diploma programme.

### Bachelors (Hons) Degree Programmes

- IELTS : 6.0
- TOEFL : 79-80 (Internet Based Test), 550 (Paper Based Test), 213 (Computer Based Test)
- Other Certification or Evidence of English Proficiency that APU accepts as equivalent to the above

Applicants who do not possess the above will be required to sit for the APU English Placement Test, and based on the outcome of the test may be required to attend the APU Intensive English Programme (IEP) prior to commencement of the Degree programme

(Note that for the programmes listed here, a pass in Bahasa Malaysia at SPM level is required for all Malaysian students).

# APU FOUNDATION PROGRAMME

Flexibility of Choice

## MODULES YOU STUDY

The modules studied help develop your study skills, introduce you to what you can expect on your degree and also allow you to discover what you can study depending on whether you choose a degree in Accounting, Banking, Finance & Quantitative Studies, Business & Management, Computing & Technology, Engineering, Design Innovation & Brand Management, Animation & Visual Effects, Creative Media Technology, International Studies & Sustainability and Journalism. The modules are:

SEMESTER 1	<b>COMMON SEMESTER 1</b>	
	<ul style="list-style-type: none"> <li>English for Academic Purpose</li> </ul>	<ul style="list-style-type: none"> <li>Communication Skills</li> </ul>
INTEREST AREAS	<b>BUSINESS &amp; FINANCE</b>	<b>COMPUTING &amp; TECHNOLOGY</b>
SEMESTER 2	<ul style="list-style-type: none"> <li>Introduction to Business</li> <li>Individual, State &amp; Society</li> <li>Global Business Trends</li> <li>Public Speaking in English</li> </ul>	<ul style="list-style-type: none"> <li>Introduction to Business</li> <li>Individual, State &amp; Society</li> <li>Computing &amp; IT</li> <li>Public Speaking in English</li> </ul>
SEMESTER 3	<ul style="list-style-type: none"> <li>Academic Research Skills</li> <li>Principles of Accounts</li> <li>Economics for Business</li> <li>Perspectives in Technology</li> <li>Co-Curricular</li> </ul>	<ul style="list-style-type: none"> <li>Academic Research Skills</li> <li>Further Mathematics</li> <li>Introduction to Multimedia Applications</li> <li>Perspectives in Technology</li> <li>Co-Curricular</li> </ul>
<p><b>You may then proceed to Level 1 of a Degree of your choice in the following pathways</b></p>		
PRIMARY PATHWAYS	<ul style="list-style-type: none"> <li>- Business &amp; Management</li> <li>- Accounting, Finance, Banking &amp; Quantitative Studies</li> <li>- Media &amp; Mass Communications</li> </ul>	<ul style="list-style-type: none"> <li>- Computing &amp; Technology</li> </ul>
SECONDARY PATHWAYS	<ul style="list-style-type: none"> <li>- Computing &amp; Technology</li> <li>- Design Innovation &amp; Brand Management</li> <li>- Animation &amp; Visual Effects</li> <li>- Creative Media Technology</li> <li>- International Studies &amp; Sustainability</li> <li>- Journalism</li> </ul> <p>Students may also choose the following:</p>	<ul style="list-style-type: none"> <li>- Business &amp; Management</li> <li>- Accounting, Finance, Banking &amp; Quantitative Studies</li> <li>- Media &amp; Mass Communications</li> <li>- Design Innovation &amp; Brand Management</li> <li>- Animation &amp; Visual Effects</li> <li>- Creative Media Technology</li> <li>- International Studies &amp; Sustainability</li> <li>- Journalism</li> </ul>

## YOUR FOUNDATION PATHWAY TO A DEGREE OF YOUR CHOICE

(Please refer to individual course brochure for details and admission requirements.)

**CREDIT / GRADE C in SPM / O-Level is required in:**

### Mathematics

Leading from APU Foundation to your Choice of Degree Studies; please note that a Credit Pass in Mathematics at SPM / O-Level is required for the following programmes:

#### Computing & Technology

- BSc (Hons) in Information Technology
- BSc (Hons) in Information Technology with a specialisms in
  - Information Systems Security
  - Database Administration
  - Network Computing
  - Mobile Technology
  - Business Information Systems
- BSc (Hons) in Enterprise Computing
- BSc (Hons) in Software Engineering
- BSc (Hons) in Computer Science
- BSc (Hons) in Intelligent System
- BSc (Hons) in Internet Technology
- BSc (Hons) in Multimedia Technology
- BSc (Hons) in Technopreneurship
- BSc (Hons) in Computer Games Development
- BSc (Hons) in Web Media Technology
- BSc (Hons) in Web Media Technology with a specialism in Education Technology

#### Computing & Business Computing\*

- BSc (Hons) Cyber Security
- BSc (Hons) Forensic Computing
- BSc (Hons) in Business Computing
- BSc (Hons) in Business Computing with a specialism in E-Commerce
- BSc (Hons) in Business Information Technology

#### Accounting, Banking, Finance & Quantitative Studies

- BA (Hons) in Accounting and Finance
- BA (Hons) in Accounting and Finance with specialism in Forensic Accounting
- BA (Hons) in Accounting and Finance with specialism in Taxation
- BA (Hons) in Accounting and Finance with specialism in Forex and investments
- BA (Hons) in Accounting and Finance with specialism in Internal Audit
- Bachelor in Banking and Finance (Hons)
- Bachelor in Banking and Finance (Hons) with a specialism in Financial Planning
- Bachelor in Banking and Finance (Hons) with specialism in Investment and Risk Management
- Bachelor in Islamic Banking and Finance (Hons)
- BSc (Hons) in Actuarial Studies
- BSc (Hons) Insurance
- BSc (Hons) in Management Science

\* UK 3+0 Degrees offered through APIIT

\*\* Commencement from 2017 onwards.

For further details, kindly refer to our Course Counselors at Student Services Office



## PATHWAYS TO STAFFORDSHIRE UNIVERSITY (UK) BACHELOR DEGREES

APU Foundation Students will also have the opportunity to pursue Bachelor Degrees at Staffordshire University in the areas of Computing & Technology, Engineering, Design, Animation & VFX, Brand Management, Creative Media, Journalism, Mass Communication, Accounting, Banking, Finance & Quantitative Studies, Business & Management and International Relations. This is providing, applicants meet the stated admission criteria and English Language Requirements, as determined by Staffordshire University, UK.

- Personal Development & Study Methods
- IT Applications
- Mathematics

ENGINEERING	DESIGN	JOURNALISM & CREATIVE MEDIA	INTERNATIONAL STUDIES
<ul style="list-style-type: none"> <li>• Introduction to Business</li> <li>• Individual, State &amp; Society</li> <li>• Engineering Mathematics</li> <li>• Public Speaking in English</li> </ul>	<ul style="list-style-type: none"> <li>• Imaging/Production Skills for Design</li> <li>• Major Project 1</li> <li>• Design Theory and Practice 1</li> <li>• Public Speaking in English</li> </ul>	<ul style="list-style-type: none"> <li>• Writing Skills for Journalists</li> <li>• Introduction to Journalism History &amp; Practice</li> <li>• Global Business Trends</li> <li>• Public Speaking in English</li> </ul>	<ul style="list-style-type: none"> <li>• Introduction to International Relations</li> <li>• Individual, State &amp; Society</li> <li>• Global Business Trends</li> <li>• Public Speaking in English</li> </ul>
<ul style="list-style-type: none"> <li>• Academic Research Skills</li> <li>• Mechanical Science</li> <li>• Engineering Science or Chemistry</li> <li>• Electrical and Electronic Principles</li> <li>• Co-Curricular</li> </ul>	<ul style="list-style-type: none"> <li>• Academic Research Skills</li> <li>• History of Design and Media</li> <li>• Major Project 2</li> <li>• Design Theory and Practice 2</li> <li>• Co-Curricular</li> </ul>	<ul style="list-style-type: none"> <li>• Academic Research Skills</li> <li>• Critical International Film Studies</li> <li>• Journalism and Society</li> <li>• English for Journalist</li> <li>• Co-Curricular</li> </ul>	<ul style="list-style-type: none"> <li>• Academic Research Skills</li> <li>• Issues in Development Studies</li> <li>• Economics for Business</li> <li>• Critical International Film Studies</li> <li>• Co-Curricular</li> </ul>
<ul style="list-style-type: none"> <li>- Engineering</li> <li>- Applied Technology</li> </ul>	<ul style="list-style-type: none"> <li>- Design Innovation &amp; Brand Management</li> <li>- Animation &amp; Visual Effects</li> </ul>	<ul style="list-style-type: none"> <li>- Journalism</li> <li>- Creative Media Technology</li> </ul>	<ul style="list-style-type: none"> <li>- International Studies and Sustainability</li> </ul>
<ul style="list-style-type: none"> <li>- Computing &amp; Technology</li> <li>- Accounting, Finance, Banking &amp; Quantitative Studies</li> <li>- Business &amp; Management</li> <li>- Media &amp; Mass Communications</li> <li>- Design Innovation &amp; Brand Management</li> <li>- Animation &amp; Visual Effects</li> <li>- Creative Media Technology</li> <li>- International Studies &amp; Sustainability</li> <li>- Journalism</li> </ul>	<ul style="list-style-type: none"> <li>- Computing &amp; Technology</li> <li>- Accounting, Finance, Banking &amp; Quantitative Studies</li> <li>- Business &amp; Management</li> <li>- Media &amp; Mass Communications</li> <li>- Creative Media Technology</li> <li>- International Studies &amp; Sustainability</li> <li>- Journalism</li> </ul>	<ul style="list-style-type: none"> <li>- Computing &amp; Technology</li> <li>- Accounting, Finance, Banking &amp; Quantitative Studies</li> <li>- Business &amp; Management</li> <li>- Media &amp; Mass Communications</li> <li>- Design Innovation &amp; Brand Management</li> <li>- Animation &amp; Visual Effects</li> <li>- International Studies &amp; Sustainability</li> </ul>	<ul style="list-style-type: none"> <li>- Computing &amp; Technology</li> <li>- Accounting, Finance, Banking &amp; Quantitative Studies</li> <li>- Business &amp; Management</li> <li>- Media &amp; Mass Communications</li> <li>- Design Innovation &amp; Brand Management</li> <li>- Animation &amp; Visual Effects</li> <li>- Creative Media Technology</li> <li>- Journalism</li> </ul>

### CREDIT / GRADE C in SPM / O-Level is required in:

- Mathematics**
- Physics OR Chemistry OR Technical Science**

Leading from APU Foundation to your Choice of Degree Studies; please note that a Credit Pass in Mathematics and Physics OR Chemistry at SPM / O-Level is required for the following programmes:

#### Engineering

- B.Eng (Hons) in Electrical & Electronic Engineering
- B.Eng (Hons) in Electronic Engineering with specialism in Information Technology
- B.Eng (Hons) in Telecommunication Engineering
- B.Eng (Hons) in Mechatronic Engineering
- B.Eng (Hons) in Petroleum Engineering

#### Applied Technology\*

- BSc (Hons) Product Design Technology\*\*
- BSc (Hons) Motorsport Technology\*\*
- BSc (Hons) Automotive Technology\*\*
- BSc (Hons) Aeronautical Technology\*\*

Leading from APU Foundation to your Choice of Degree Studies:

#### Business & Management

- BA (Hons) in Business Management
- BA (Hons) in Business Management with a specialism in E-Business
- BA (Hons) in International Business Management
- BA (Hons) in Marketing Management
- BA (Hons) in Human Resource Management
- BA (Hons) in Media Marketing
- BA (Hons) in Media Marketing with a specialism in Social Media
- BA (Hons) in Services Management
- BA (Hons) in Tourism Management

#### Media & Mass Communications

- BA (Hons) in Media Marketing
- BA (Hons) in Media Marketing with a specialism in Social Media
- BSc (Hons) in Media Informatics

#### International Studies and Sustainability\*

- BA (Hons) International Relations
- BSc (Hons) Environment and Sustainability\*\*

#### Journalism\*

[ Assessment include interview and written exercises ]

- BA (Hons) Journalism\*\*
- BA (Hons) Broadcast Journalism\*\*
- BA (Hons) Sports Journalism\*\*

#### Design Innovation and Brand Management\*

- BA (Hons) Product Design
- BA (Hons) Transport Design
- BA (Hons) Advertising and Brand Management

#### Animation & Visual Effects\*

- BA (Hons) Animation
- BA (Hons) VFX : Visual Effects and Concept Design
- BSc (Hons) Digital Film and 3D Animation Technology
- BSc (Hons) CGI and Digital Effects

#### Creative Media Technology\*

- BA (Hons) Advertising and Commercial Film Production\*\*
- BA (Hons) Media (Film) Production\*\*
- BSc (Hons) Film Production Technology\*\*
- BSc (Hons) Television Production Technology\*\*
- BA (Hons) Film, Television & Radio Studies\*\*
- BA (Hons) Radio Production\*\*

**PORTFOLIO REQUIRED**

**INTERVIEW REQUIRED**

# APIIT Diploma in Electrical & Electronic Engineering

**THIS PROGRAMME IS SPECIFICALLY DESIGNED TO PROVIDE:**

The Diploma in Electrical and Electronic Engineering programme prepares you for careers in the Electrical, Electronics, Telecommunication, and Manufacturing environments. This programme offers a broad-based study in the areas of electrical and electronic engineering.

- A full range of modules in the electrical and electronic engineering spectrum is provided.
- Other skills necessary for the workplace are also provided. These include communication skills and life-long learning skills.
- You will be equipped with the knowledge and expertise to face the challenges of business development in a wide range of electrical and electronic industries.

## PART 1

The modules offered in Part 1 of the Diploma in Electrical and Electronic Engineering programme will enable you to understand the electrical and electronic engineering fundamentals starting with the science of elementary particles called electrons. You will be able to apply theories and principles of science and mathematics to solve practical technical problems with basic knowledge and skills of the electrical elements, components and devices to construct simple electrical and electronic circuits. There are also modules that provide study skills as well as business and communication and information technology skills.

### Modules

- English for Academic Purposes
- Foundation of Engineering Mathematics
- Professional Communications
- Engineering Mechanics
- Practical IT Skills
- Business Environment
- Electrical & Electronic Principles
- Engineering Materials
- Engineering Mathematics 1
- Engineering Mathematics 2

*In addition to the above, all students are also required to successfully complete General Studies modules as stipulated by the Malaysian Qualification Agency, as well as fulfill credit requirements for Co-Curricular Activities.*

## PART 2

The modules provided in Part 2 of the Diploma in Electrical and Electronic Engineering programme provide you with knowledge of most electrical components, instruments and devices operation and behaviour such as electric and magnetic fields, analogue and digital electronics, machines and control, communication engineering, microprocessor and programming technology. This makes your job opportunities much wider.

### Modules

- Instrumentation & Measurements
- Control Systems
- Generation Transmission & Protection
- Microprocessor and Microcontroller Systems
- Electrical Machines & Drives
- Organisational Behaviour
- Problem Solving & Program Design Using C
- Analysis of Circuits
- Analogue Electronics
- Digital Electronics
- Communication Engineering Principles
- Design Principles

## FURTHER STUDIES

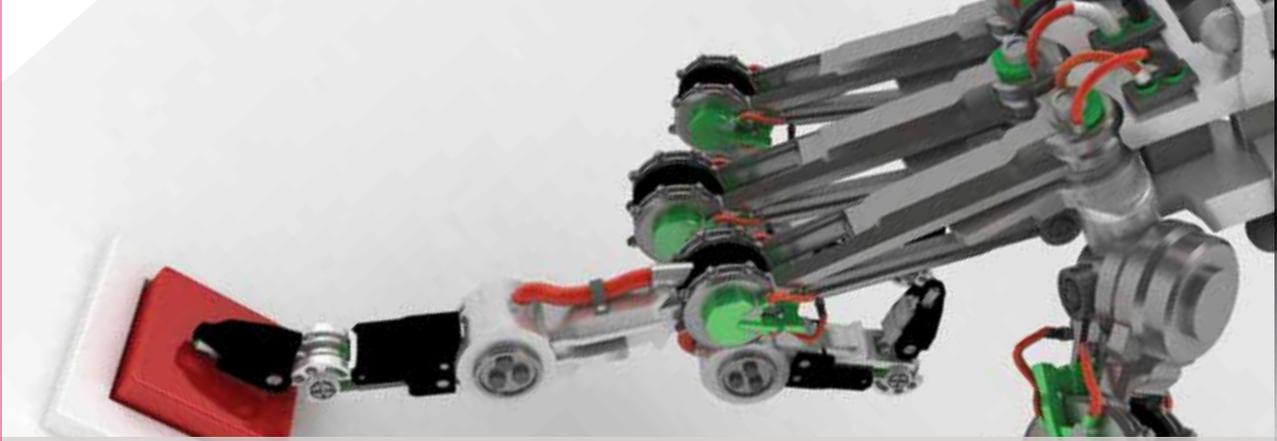
Upon successful completion of this programme, you will be eligible to progress into any of the following engineering degree programmes offered at APU:

- B. Eng (Hons) in Electrical & Electronic Engineering
- B. Eng (Hons) in Electronic Engineering with Information Technology
- B. Eng (Hons) in Telecommunication Engineering
- B. Eng (Hons) in Mechatronic Engineering

## CAREER PROSPECTS

In today's workplace, employers are looking for individuals who possess the ability to anticipate and exceed their customer's needs and deliver quality service as well as technical skills. The Diploma in Electrical and Electronic Engineering programme provides the balance required to achieve this.

The career prospects for holders of the Diploma in Electrical and Electronic Engineering include working as technicians or engineering assistants. Your career could be in industries using low power applications including radio and television, computers and telephones to high power plant construction and design, or working in manufacturing industries including aerospace, electrical equipment, personal electronics, computer electronics, medical electronics and telecommunication equipment. There is also great demand in the marketing and sales areas of technical products where you could be employed as Sales Engineers doing marketing and sales of technical products. At the same time you can work as an Assistant Engineer. At this level, you conduct standardised tests, prepare data for reports, and perform other routine engineering tasks.



## B. Eng (Hons) in Electrical & Electronic Engineering

An Electrical Engineer may be responsible for research, design, development, manufacturing and management of complex hardware and software systems and reliable, cost effective devices, many involving the use of new information and computer intensive technologies.

These include:

- Integrated electronic systems
- Renewable energy systems
- Generation, transmission and distribution of electrical power
- Instrumentation in electrical and electronic systems
- Manufacturing
- Microelectronics
- Photoelectronics

## B. Eng (Hons) in Electronic Engineering with Information Technology

A graduate of this programme is expected to be fundamentally skilled in embedded electronics systems. However, with today's advancements, hardware-software interfacing is heading towards the internetbased and wireless-based modes of operation. Thus he can no longer consider proficiency in Information Technology related fields such as Cyber Security and Cloud Computing outside of his domain. A student of this programme is therefore equipped to face environments in the following core areas:

- Embedded systems
- Machine language
- Networking
- Human-machine interaction
- Computer systems security
- Cloud infrastructure

## B. Eng (Hons) in Telecommunication Engineering

Telecommunication Engineers design, develop, test and maintain telecommunication systems. Telecommunication engineering will appeal to those who are interested in the following field:

- Satellite and mobile communication
- Signal processing
- Optical fibres and photonics
- Data networks, data coding, compression, encryption and transmission
- Real-time embedded systems
- Telecommunication Engineers design, develop, test and maintain telecommunication systems

## B. Eng (Hons) in Mechatronic Engineering

Mechatronic Engineering is concerned with the creation, design and building of intelligent machines. This new breed of engineer has to master skills in mechanical, electronic and computer engineering and work in a hybrid manner, meeting an ever-increasing need in industry where complexity of projects is rising and resources are limited. The main areas of activity are:

- Fundamental design and build - ways of embedding intelligence and interfacing to the real world
- Process control - plant condition monitoring and control
- Advance robotics and intelligent Machines
- Image Processing and collision avoidance
- Industrial system such as CIM system, CAD/CAM system
- Design and develop a Mechatronics system

## B. Eng (Hons) in Petroleum Engineering

Petroleum engineers travel to where petroleum reservoirs are known to exist. They define and develop the reservoirs, and produce oil and gas with maximum profitable recovery. Petroleum engineering allows one to specialize in several different oil & gas specialties, each with its own unique challenges and rewards. The careers and job activity areas are as a:

- Drilling engineer, working with geologists and contractors in designing and supervising drilling operations.
- Production engineer, developing processes and equipment to optimize oil and gas production.
- Reservoir engineer and help determine ideal recovery processes, estimate the number of wells that can be economically drilled, and simulate future performance using sophisticated computer models.
- Manager, an entrepreneur, economist, or environmental/safety specialist.



## Programme Educational Objectives

PEO	ELECTRICAL AND ELECTRONIC ENGINEERING (EEE)	ELECTRONIC ENGINEERING WITH INFORMATION TECHNOLOGY (EIT)	MECHATRONIC ENGINEERING (ME)	TELECOM-MUNICATION ENGINEERING (TE)	PETROLEUM ENGINEERING (PE)
PEO1	Be a practicing engineer contributing to the development of Electrical or Electronic Engineering while demonstrating professionalism.	Be a practicing engineer contributing to the development of Electronic Engineering with Information Technology while demonstrating professionalism.	Be a practicing engineer contributing to the development of Mechatronic Engineering while demonstrating professionalism.	Be a practicing engineer contributing to the development of Telecommunication or Electronic Engineering while demonstrating professionalism.	Be a practicing engineer contributing to the development of Petroleum Engineering while demonstrating professionalism.
PEO2	Pursue engineering innovation via career advancement opportunities and/or advanced studies in Electrical or Electronic Engineering.	Pursue engineering innovation via career advancement opportunities and/or advanced studies in Electronic Engineering with Information Technology.	Pursue engineering innovation via career advancement opportunities and/or advanced studies in Mechatronic Engineering.	Pursue engineering innovation via career advancement opportunities and/or advanced studies in Telecommunication or Electronic Engineering.	Pursue engineering innovation via career advancement opportunities and/or advanced studies in Petroleum Engineering.

## Programme Outcomes

The students, upon completion of their study, should attain the following outcomes:

- PO1 - Ability to gain and apply principles of Mathematics, Science and Engineering.
- PO2 - Ability to identify engineering problems and apply engineering principles to solve them.
- PO3 - Ability to recognize and apply suitable tools and techniques for engineering practical applications.
- PO4 - Ability to investigate complex engineering problems using research techniques.
- PO5 - Ability to design innovative solutions for complex engineering problems.
- PO6 - Ability to communicate effectively and professionally.
- PO7 - Ability to comprehend and demonstrate current good practices of engineering for sustainable development and environmental considerations.
- PO8 - Ability to practice safety, health, social, cultural and legal responsibilities as an engineer.
- PO9 - Ability to execute the responsibilities of an Engineer professionally and ethically.
- PO10 - Ability to function effectively as a team leader or a member in a team.
- PO11 - Ability to recognize the need for, and be able to engage in independent and life-long learning towards continuous professional development.
- PO12 - Ability to demonstrate and apply the knowledge and understanding of engineering management and finance.

## B. Eng (Hons) in Electrical & Electronic Engineering

THIS PROGRAMME IS SPECIFICALLY DESIGNED TO PROVIDE:

- High-quality undergraduate engineering education by providing students with a curriculum that is firmly grounded in electrical & electronic engineering fundamentals.
- A study in both the areas of electronics fundamentals as well as electrical power systems including the areas of generation, transmission and distribution of electrical energy.
- The technical skills required for the application in the fields of communication and the IT industry through a well balanced curriculum which includes the study of signals and computing.

### YEAR 1

These modules provide an appropriate platform for an Engineering Professional to understand the basic principles of engineering in the areas of Circuit Analysis, Engineering Materials, Engineering Statics & Dynamics and Engineering Design.

In addition, a thorough grounding in principles of IT and management are provided by the Programming and Management modules. Modules such as Engineering Mathematics and Introduction to Management provide the basic academic skills required to meet the demands of employers. Important and relevant skills for managing activities and for your own independent learning are also introduced.

#### Common Modules

- Analysis of Circuits
- Engineering Materials
- Introduction to Management
- Engineering Mathematics 1
- Introduction to C Programming
- Engineering Mathematics 2
- Instrumentation & Measurement
- Engineering Design

#### Specialised Modules

- Engineering Statics & Dynamics

*In addition to the above, all students are also required to successfully complete General Studies modules as stipulated by the Malaysian Qualification Agency, as well as fulfill credit requirements for Co-Curricular Activities.*

### YEAR 2

Here, you start specialising in modules that develop the necessary underlying knowledge and skills in Electrical & Electronic Engineering. Further, in-depth Electrical & Electronic skills are developed here with modules such as Electromagnetic Field Theory, Engineering Software & Applications, Analogue Electronics, Digital Electronics, Signals & Linear Systems, Electrical Machines 1 & 2 and Electrical Power Utilisation. Engineering Mathematics is provided for the better understanding of the engineering modules.

#### Common Modules

- Analogue Electronics
- Engineering Mathematics 3
- Electromagnetic Field Theory
- Digital Electronics
- Engineering Software Applications
- Signals and Linear Systems

#### Specialised Modules

- Electrical Machines 1
- Electrical Power Utilization
- Electrical Machines 2

### YEAR 3

Specialised knowledge and skills in the areas of Control Engineering, Communication Engineering Principles, Multimedia Applications, Computer Architecture, Microprocessor Systems & Embedded Software, Numerical Methods and Statistics, Generation, Transmission and Distribution of Electrical Power, Power Electronics & Drives and Power System Analysis are the critical focus of this level. Students are also allowed select from a list of two modules to be studied as an elective at this level. There is further development of the ability to apply relevant engineering skills with strong critical thinking and analysis. Independent learning continues in all modules.

#### Common Modules

- Control Engineering
- Communication Engineering Principles
- Multimedia Applications
- Computer Architecture
- Numerical Methods & Statistics
- Microprocessor Systems & Embedded Software

#### Specialised Modules

- Generation, Transmission & Distribution of Electrical Power
- Power Electronics & Drives
- Power System Analysis

#### Electives (Choose One)

- Digital Signal Processing
- Product Creation Technology

### INTERSHIP

Industry placement with a suitable organisation for a minimum period of 12 weeks.

#### INTERSHIP

*(After completing Year 3 and before the commencement of Year 4)*

### YEAR 4

The final year Engineering modules provide the necessary industry application and technological skills which become very useful for employment upon graduation. These modules include, Analogue Intergrated Circuits and Systems and High Voltage Engineering. Again, students are also allowed select from a list of two modules to be studied as an elective at this level. Your personal and professional development is enhanced by the modules Engineer in Society and Engineering Project Management. You will enhance your technical capability and understand how to innovate, generate and manage the creation of new ideas. Additionally, you will be involved in a Group Engineering Design Project based on capstone design. This will provide you with a foretaste of real world engineering projects which are invariably inter-disciplinary in nature. The Project Phase I (Investigation) in Electrical & Electronic Engineering will enable students to take on R&D with commercialization. The Electrical & Electronic Engineering Project Phase II (Implementation) also develops the academic and practical aspects of your chosen areas of study and reinforces your independent learning skills. This is where you will demonstrate higher level critical thinking, analysis and solutions development skills which will enhance your employability.

#### Common Modules

- Engineering Project Management
- Project Phase I (Investigation)
- Project Phase II (Implementation)
- Group Engineering Design Project
- Engineer in Society

#### Specialised Modules

- Analogue Integrated Circuits and Systems
- High Voltage Engineering

#### Electives (Choose One)

- Optical Communication and Networks
- VLSI Design

## B. Eng (Hons) in Electronic Engineering with Information Technology

THIS PROGRAMME IS SPECIFICALLY DESIGNED TO PROVIDE:

- High-quality undergraduate engineering education by providing students with a curriculum that is firmly grounded electronics engineering and IT fundamentals.
- A study in the areas of electronics coupled with computing, thus enabling students to excel in the development and design of real life software for electronic engineering applications.
- The technical skills to cover the ever demanding expertise in the communication industry, by the inclusion of the study of signals and digital systems.

### YEAR 1

These modules provide an appropriate platform for an Engineering Professional to understand the basic principles of engineering in the areas of Circuit Analysis, Engineering Materials, Engineering Statics & Dynamics and Engineering Design.

In addition, a thorough grounding in principles of IT are provided by the Programming and Networking modules. Modules such as Engineering Mathematics and Introduction to Management provide the basic academic skills required to meet the demands of employers. Important and relevant skills for managing activities and for your own independent learning are also introduced.

#### Common Modules

- Analysis of Circuits
- Engineering Materials
- Introduction to Management
- Engineering Mathematics 1
- Introduction to C Programming
- Engineering Mathematics 2
- Instrumentation & Measurement
- Engineering Design

#### Specialised Modules

- Engineering Statics & Dynamics
- Introduction to Networking

*In addition to the above, all students are also required to successfully complete General Studies modules as stipulated by the Malaysian Qualification Agency, as well as fulfill credit requirements for Co-Curricular Activities.*

### YEAR 2

Here, you start specialising in modules that develop the necessary underlying knowledge and skills in Electronic Engineering with IT. Further in-depth Electronics and IT skills are developed here with modules such as Electromagnetic Field Theory, Engineering Software & Applications, Analogue Electronics, Digital Electronics, Signals & Linear Systems, Introduction to Electrical Systems, System Programming & Computer Control, Programming Concepts in C++ and Human Computer Interaction. Engineering Mathematics is provided for the better understanding of the engineering modules.

#### Common Modules

- Analogue Electronics
- Engineering Mathematics 3
- Electromagnetic Field Theory
- Digital Electronics
- Engineering Software & Applications
- Signals & Linear Systems

#### Specialised Modules

- Introduction to Electrical Systems
- Object Oriented Development with Java
- Human Computer Interaction
- Programming Concepts in C++

### YEAR 3

Specialised knowledge and skills in the areas of Control Engineering, Communication Engineering Principles, Multimedia Applications, Computer Architecture, Microprocessor Systems & Embedded Software, Digital Signal Processing, Numerical Methods and Statistics, Data Structures & Algorithms are the critical focus of this level. Students are also allowed select from a list of four IT based modules to be studied as an elective at this level. There is further development of the ability to apply relevant engineering skills with strong critical thinking and analysis. Independent learning continues in all modules.

#### Common Modules

- Control Engineering
- Communication Engineering Principles
- Multimedia Applications
- Computer Architecture
- Numerical Methods & Statistics
- Microprocessor Systems & Embedded Software
- Digital Signal Processing

#### Specialised Modules

- Data Structures & Algorithms

#### Electives (Choose One)

- HCI and Usability
- Distributed Computer Systems

### INTERNSHIP

Industry placement with a suitable organisation for a minimum period of 12 weeks.

#### INTERNSHIP

*(After completing Year 3 and before the commencement of Year 4)*

### YEAR 4

The final year Engineering modules provide the necessary industry application and technological skills which become very useful for employment upon graduation. These modules include, Analogue Intergrated Circuits and Systems and another IT-based module, selected from the list of electives. Your personal and professional development is enhanced by the modules Engineer in Society and Engineering Project Management. You will enhance your technical capability and understand how to innovate, generate and manage the creation of new ideas. Additionally, you will be involved in a Group Engineering Design Project based on capstone design. This will provide you with a foretaste real world engineering projects which are invariably inter-disciplinary in nature.

The Project Phase I (Investigation) in Electronic Engineering with Information Technology will enable students to take on R&D with commercialisation. The Electronic Engineering with Information Technology Project Phase II (Implementation) also develops the academic and practical aspects of your chosen areas of study and reinforces your independent learning skills. This is where you will demonstrate higher level critical thinking, analysis and solutions development skills which will enhance your employability.

#### Common Modules

- Engineering Project Management
- Project Phase I (Investigation)
- Project Phase II (Implementation)
- Group Engineering Design Project
- Engineer in Society

#### Specialised Modules

- Analogue Integrated Circuits and Systems

#### Electives (Choose One)

- Computer Systems Security
- Cloud Infrastructure & Services

## B. Eng (Hons) in Telecommunication Engineering

THIS PROGRAMME IS SPECIFICALLY DESIGNED TO PROVIDE:

- High-quality undergraduate engineering education by providing students with a curriculum that is firmly grounded in telecommunication engineering fundamentals.
- A study in the areas of telecommunication engineering which covers the structure of mobile computing systems, telecommunication systems & networks, and software systems.
- The technical skills to cover the ever demanding expertise in the fields of microwave and optical Transmission, satellite communications and RF communications.

### YEAR 1

These modules provide an appropriate platform for an Engineering Professional to understand the basic principles of engineering in the areas of Circuit Analysis, Engineering Materials, Instrumentation & Measurement and Engineering Design.

In addition, a thorough grounding in principles of IT and management are provided by the Programming and Management modules. Modules such as Engineering Mathematics and Introduction to Management provide the basic academic skills required to meet the demands of employers. Important and relevant skills for managing activities and for your own independent learning are also introduced.

#### Common Modules

- Analysis of Circuits
- Engineering Materials
- Introduction to Management
- Engineering Mathematics 1
- Introduction to C Programming
- Engineering Mathematics 2
- Instrumentation & Measurement
- Engineering Design

*In addition to the above, all students are also required to successfully complete General Studies modules as stipulated by the Malaysian Qualification Agency, as well as fulfill credit requirements for Co-Curricular Activities.*

### YEAR 2

Here, you start specialising in modules that develop the necessary underlying knowledge and skills in Telecommunication Engineering. Further, in-depth Electronic and Telecommunication skills are developed here with modules such as Electromagnetic Field Theory, Engineering Software & Applications, Analogue Electronics, Digital Electronics, Analogue Communication, Digital Communication, Signals & Linear Systems and Introduction to Electrical Systems. Engineering Mathematics is provided for the better understanding of the engineering modules.

#### Common Modules

- Analogue Electronics
- Engineering Mathematics 3
- Electromagnetic Field Theory
- Digital Electronics
- Engineering Software & Applications
- Signals & Linear Systems
- Introduction to Electrical Systems

#### Specialised Modules

- Analogue Communication
- Digital Communication

### YEAR 3

Specialised knowledge and skills in the areas of, Control Engineering, Multimedia Applications, Computer Architecture, Microprocessor Systems & Embedded Software, Digital Signal Processing, Numerical Methods & Statistics, Antenna & Propagation, Modern Communication Systems, and Optical Communication & Networks are a critical focus of this level. There is further development of the ability to apply relevant engineering skills with strong critical thinking and analysis.

Independent learning continues in all modules.

#### Common Modules

- Control Engineering
- Multimedia Applications
- Computer Architecture
- Microprocessor Systems & Embedded Software
- Numerical Methods & Statistics
- Digital Signal Processing

#### Specialised Modules

- Antenna & Propagation
- Modern Communication System
- Optical Communication & Networks

### INTERNSHIP

Industry placement with a suitable organisation for a minimum period of 12 weeks.

#### INTERNSHIP

*(After completing Year 3 and before the commencement of Year 4)*

### YEAR 4

The final year Engineering modules provide the necessary industry application technological skills which will become very useful for employment upon graduation. These modules include, Analogue Integrated Circuits & Systems, Microwave & RF Communication and Satellite & Mobile Communication. Your personal and professional development is enhanced by the module in Engineer in Society, Group Engineering Design Project and Engineering Project Management.

You will enhance your technical capability and understand how to innovate, generate and manage the creation of new ideas.

The Project Phase I (Investigation) in Telecommunication Engineering will enable students to take on R&D with commercialisation. The Telecommunication Engineering Project Phase II (Implementation) also develops the academic and practical aspects of your chosen areas of study and reinforces your independent learning skills. This is where you will demonstrate higher level critical thinking, analysis and solutions development skills which will enhance your employability.

#### Common Modules

- Engineering Project Management
- Group Engineering Design Project
- Project Phase 1 (Investigation)
- Project Phase 2 (Implementation)
- Engineer in Society

#### Specialised Modules

- Microwave & RF Communication

#### Electives

##### Option 1 - Electives

- Analogue Integrated Circuits and Systems
- Satellite and Mobile Communication

##### Option 2 - Electives

- VLSI Design
- Design of Corporate Communication Systems



**THIS PROGRAMME  
IS SPECIFICALLY  
DESIGNED TO PROVIDE:**

## B. Eng (Hons) in Mechatronic Engineering

- High-quality undergraduate engineering education by providing students with a curriculum that is firmly grounded in Mechatronic engineering fundamentals.
- A study of basic engineering sciences and fundamentals of mechanical, electrical, electronics and computing engineering. Students will be to integrate these four diverse.
- The technical skills to design, analyse and test “intelligent” products or processes that incorporate suitable controller, sensor and mechatronic devices for robotics and automation.

### YEAR 1

These modules provide an appropriate platform for an Engineering Professional to understand the basic principles of engineering in the areas of Circuit Analysis, Engineering Materials, Instrumentation & Measurement, Engineering Statics & Dynamics and Engineering Design.

In addition, a thorough grounding in principles of IT and management are provided by the Programming and Management modules. Modules such as Engineering Mathematics and Introduction to Management provide the basic academic skills required to meet the demands of employers. Important and relevant skills for managing activities and for your own independent learning are also introduced.

#### Common Modules

- Analysis of Circuits
- Engineering Materials
- Introduction to Management
- Engineering Mathematics 1
- Introduction to C Programming
- Engineering Mathematics 2
- Instrumentation & Measurement
- Engineering Design

#### Specialised Modules

- Engineering Statics & Dynamics

*In addition to the above, all students are also required to successfully complete General Studies modules as stipulated by the Malaysian Qualification Agency, as well as fulfill credit requirements for Co-Curricular Activities.*

### YEAR 2

Here, you start specialising in modules that develop the necessary underlying knowledge and skills in Mechatronic Engineering. Further, in-depth Electronic and Mechanical skills are developed here with modules such as Electromagnetic Field Theory, Engineering Software & Applications, Analogue Electronics, Digital Electronics, Sensor & Actuators, Introduction to Power System, Signals & Linear Systems and Strength of Materials. Engineering Mathematics and Intermediate Robotics are provided for the better understanding of the engineering modules.

#### Common Modules

- Analogue Electronics
- Introduction to Power System
- Engineering Mathematics 3
- Electromagnetic Field Theory
- Digital Electronics
- Engineering Software & Applications
- Signals & Linear Systems

#### Specialised Modules

- Strength of Material
- Sensor & Actuators
- Intermediate Robotics

### YEAR 3

Specialised knowledge and skills in the areas of Machine Design, CAD/CAM,

Control Engineering, Communication Engineering Principle, Fluid Mechanics, PLC & Pneumatic System, Microprocessor Systems & Embedded Software, Power Electronic & Drives and Numerical Methods & Statistics, are a critical focus of this level. Students are also allowed to select from a list of two modules to be studied as an elective at this level. There is further development of the ability to apply relevant engineering skills with strong critical thinking and analysis.

#### Common Modules

- Control Engineering
- Communication Engineering Principles
- Microprocessor Systems & Embedded Software
- Numerical Methods & Statistics

#### Specialised Modules

- Advanced Robotics
- CAD/CAM
- Machine Design
- PLC & Pneumatic System

#### Electives (Choose One)

- Digital Signal Processing
- Power Electronics & Drives

### INTERNSHIP

Industry placement with a suitable organisation for a minimum period of 12 weeks.

#### INTERNSHIP

*(After completing Year 3 and before the commencement of Year 4)*

### YEAR 4

The final year Engineering modules provide the necessary industry application technological skills which will become very useful for employment upon graduation. These modules include, Product Creation Technology, Mechatronic Design, and Thermodynamics and Heat Transfer.

Your personal and professional development is enhanced by the module in Engineer in Society and Engineering Project Management. You will enhance your technical capability and understand how to innovate, generate and manage the creation of new ideas.

The Project Phase I (Investigation) in Mechatronic Engineering will enable students to take on R&D with commercialisation. The Mechatronic Engineering Project Phase II (Implementation) also develops the academic and practical aspects of your chosen areas of study and reinforces your independent learning skills. This is where you will demonstrate higher level critical thinking, analysis and solutions development skills which will enhance your employability.

#### Common Modules

- Engineering Project Management
- Project Phase I (Investigation)
- Project Phase II (Implementation)
- Engineer in Society

#### Specialised Modules

- Mechatronics Design
- Product Creation Technology
- Thermodynamics and Heat Transfer

## B. Eng (Hons) in Petroleum Engineering

THIS PROGRAMME IS SPECIFICALLY DESIGNED TO PROVIDE:

Petroleum Engineering is a unique programme that combines petroleum, gas and exploration engineering to cater for the ever-demanding oil and gas industry. Our programme prepares individuals to apply engineering principles to the design, development and operation of systems for locating, extracting, processing and refining crude petroleum and natural gas, including mining and drilling systems, processing and refining systems and facilities, storage facilities, transportation systems, and related environmental and safety systems. Students' understanding on theoretical component is further enhanced with hands on sessions in our laboratory and we also prepare students with psychomotor skills, critical thinking skills and good communication skills.

### YEAR 1

These modules provide an appropriate platform for a practicing engineer to understand the basic principles of engineering in the areas of Fundamental of Petroleum Engineering, Petroleum Geology, Engineering Materials, Engineering Statics and Dynamics and Engineering Design.

In addition, a thorough grounding in principles of IT and management are provided by the C Programming for Engineers and Management modules. Modules such as Engineering Mathematics and Introduction to Management provide the basic academic skills required to meet the demands of employers. Important and relevant skills for managing activities and for your own independent learning are also introduced.

#### Common Modules

- Engineering Materials
- Engineering Statics and Dynamics
- Engineering Design
- Engineering Mathematics 1
- Engineering Mathematics 2
- Introduction to C programming
- Introduction to Management

#### Specialised Modules

- Fundamental of Petroleum Engineering
- Petroleum Geology

*In addition to the above, all students are also required to successfully complete General Studies modules as stipulated by the Malaysian Qualification Agency, as well as fulfill credit requirements for Co-Curricular Activities.*

### YEAR 2

Here, you start specialising in modules that develop the necessary underlying knowledge and skills in Petroleum Engineering. Further, in-depth Electronic and Mechanical skills are developed here with modules such as Introduction to Electrical System, Strength of Materials, Fluid Mechanics and Thermodynamic & Heat Transfer. Engineering Mathematics is provided for the better understanding of the engineering modules. Specialize Petroleum Engineering modules such as Element of reservoir Rock and Fluid Properties, Formation Evaluation & Well Logging, Reservoir Engineering and Safety in Oil & Gas Engineering are introduced to develop skills necessary for Petroleum engineers. Independent learning continues in all modules.

#### Common Modules

- Introduction to Electrical System
- Strength of Materials
- Engineering Mathematics 3

#### Specialised Modules

- Fluid Mechanics
- Thermodynamic & Heat Transfer
- Element of Reservoir Rock and Fluid Properties
- Formation Evaluation & Well Logging
- Reservoir Engineering
- Safety in Oil & Gas Engineering

### YEAR 3

Specialised knowledge and skills in the areas of Drilling Engineering, Reservoir Engineering, Well Design & Completion, Sustainable Development, Production Engineering, Well Testing, Reservoir Simulation and Numerical Methods & Statistic are a critical focus of this level. There is further development of the ability to apply relevant engineering skills with strong critical thinking and analysis. Independent learning continues in all modules.

#### Common Modules

- Numerical Methods & Statistic

#### Specialised Modules

- Drilling Engineering
- Reservoir Engineering
- Well Design & Completion
- Sustainable Development
- Production Engineering
- Well Testing
- Reservoir Simulation

### INTERNSHIP

Industry placement with a suitable organisation for a minimum period of 12 weeks.

#### INTERNSHIP

*(After completing Year 3 and before the commencement of Year 4)*

### YEAR 4

The final year Petroleum Engineering modules provide the necessary industry application technological skills which will become very useful for employment upon graduation. These modules include, Field Development Project, Advance Drilling Engineering and Advance Well Testing for off shore and Gas Engineering and Enhanced Oil Recovery for on shore. Your personal and professional development is enhanced by the module in Engineering Project Management and Engineers in Society. You will enhance your technical capability and understand how to innovate, generate and manage the creation of new ideas.

The Investigation module (Project Phase I) and Implementation module (Project Phase II) develops the academic and practical aspects of your chosen areas of study and reinforces your independent learning skills. This is where you will demonstrate higher level critical thinking, analysis and solutions development skills which will enhance your employability.

#### Common Modules

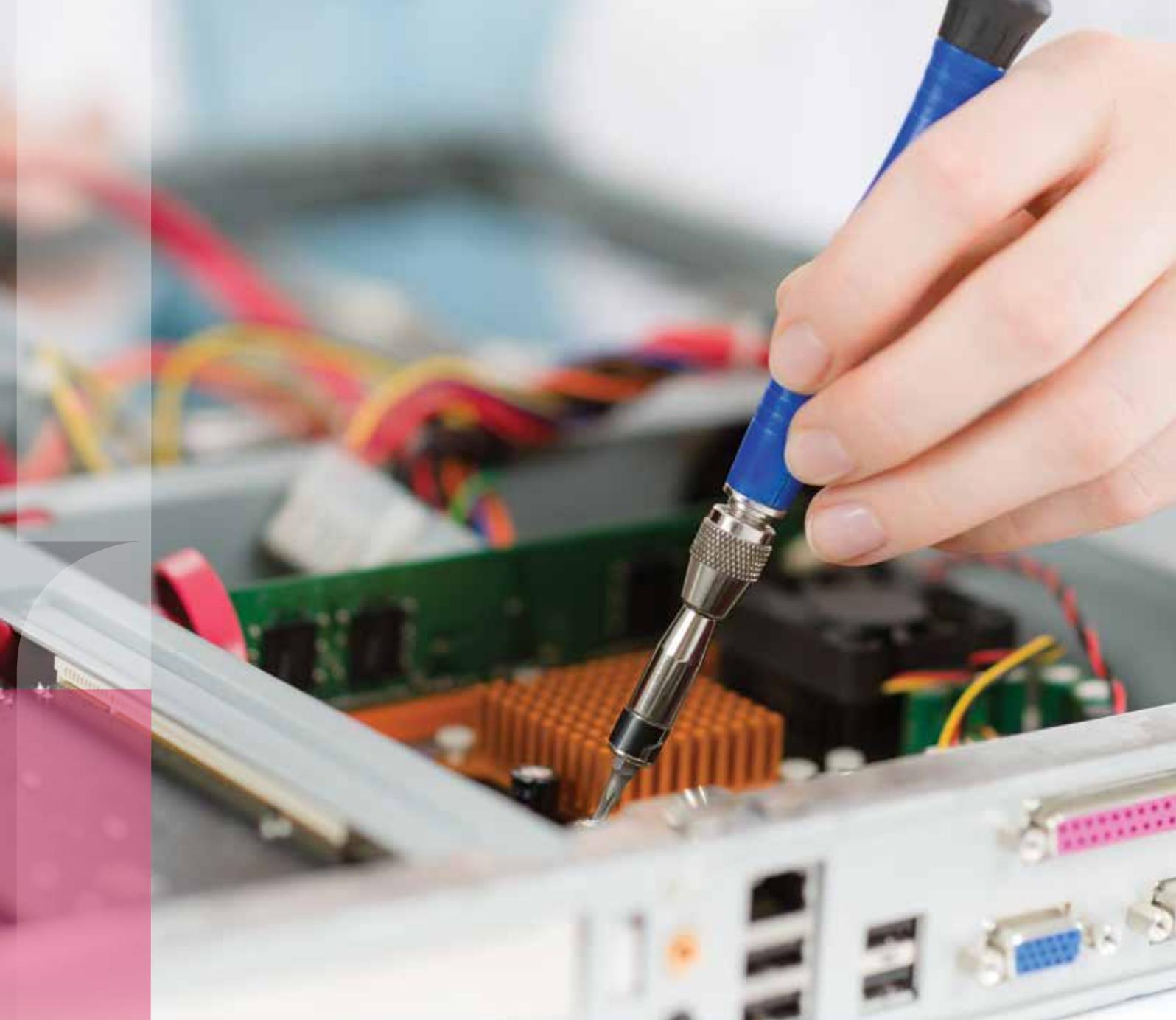
- Engineering Project Management
- Engineers in Society
- Project Phase I (Investigation)
- Project Phase II (Implementation)

#### Specialized Modules

- Field Development Project

#### Elective

- Option 1 - Electives
- Advance Drilling Engineering
  - Advance Well Completion
- Option 2 - Electives
- Gas Engineering
  - Enhanced Oil Recovery



## Internship

To meet the requirements of accreditation by the Engineering Accreditation Council of the Board of Engineers Malaysia and also to complement the theory and practical study at APU, a well structured internship programme in collaboration with industry has been incorporated into the curriculum. The main aims and objectives of the internship programme are to provide:

- **Enhanced Employability**
- **Interpersonal and Social Skills**
- **Interrelationships of Theory and Practice**
- **Career Preparation**
- **Insight into the World of Work**
- **Personal Development**
- **Technical Development**

This Internship programme will further enhance your employability. In many cases the same company at which you had internship training will offer you employment as soon as you graduate. In all cases you will gain an invaluable insight into the world of work as an Engineer and be better equipped to position yourself for the career you seek.

Awards received by the university and our students at local, regional and international competitions are a testimony to their knowledge, skills and professional attributes.

#### Industry Excellence Awards 2011

- 2011 - Winner of Prime Minister's Industry Excellence Award
- 2011 - Winner of 'Special Jury Award' by the Prime Minister

#### Asia Pacific ICT Awards (APICTA) Malaysia (Multimedia Development Corporation)

- 2013 - Top Award for 'Best of Tertiary Student Project'
- 2012 - Top Award for 'Best of Tertiary Student Project'
- 2011 - Winner of 'Special Jury Award'
- 2011 - Top Award for 'Best of Tertiary Student Project'
- 2011 - 2 Merit Awards for 'Best of Tertiary Student Project'
- 2010 - Top Award for 'Best of Tertiary Student Project'
- 2008 - Top Award for 'Best of e-Inclusion & e-Community'
- 2005 - Top Award for 'Best of Applications & Infrastructure Tools'
- 2004 - Top Award for 'Best of Education & Training'
- 2004 - Top Award for 'Best of Applications & Infrastructure Tools'
- 2004 - Merit Award for 'Best of Research & Development'
- 2003 - Merit Award for 'Best of Research & Development'
- 2002 - Merit Award for 'Best of Smart Learning Applications'
- 2001 - Merit Award for 'Best of Smart Learning Applications'
- 2000 - Merit Award for 'Best of Smart Learning Applications'
- 2000 - Top Award for 'Best of Student Project'
- 1999 - Merit Award for 'Best of Student Project'

#### International Asia Pacific ICT Awards (APICTA)

- 2012 - Merit Award for 'Best of Tertiary Student Project'
- 2011 - Merit Award for 'Best of Tertiary Student Project'
- 2010 - Merit Award for 'Best of Tertiary Student Project'
- 2004 - Merit Award for 'Best of Education & Training'
- 2004 - Merit Award for 'Best of Applications & Infrastructure Tools'

#### Malaysian Greentech Awards (Ministry of Energy, Green Technology & Water)

- 2012 - Silver Award for 'GreenTech University'

#### NAPEI Awards

- (National Association of Private Education Institutions, Malaysia)
- 2011 - Award for Educational Excellence
- 2007 - Award for Educational Excellence
- 2004 - Award for Educational Excellence

#### Stanford University's Global Innovation Tournament 2009

- 2009 - Winner for Global Innovation Tournament Global Challenge

#### Microsoft Imagine Cup (Microsoft Inc.)

- 2012 - Winner of Microsoft Imagine Cup (Malaysia)
- 2012 - Top Award for 'MDeC Special Innovation'
- 2011 - Winner of Microsoft Imagine Cup (Malaysia)
- 2011 - 1st Runner-up of Microsoft Imagine Cup (Malaysia)
- 2011 - 2nd Runner-up of Microsoft Imagine Cup (Malaysia)
- 2011 - Top Award for 'MDeC Special Innovation'
- 2011 - Top Award for 'Presentation Superstars'
- 2010 - Winner of Microsoft Imagine Cup (Malaysia)
- 2010 - Top 6 finalists at World Championship in Poland
- 2010 - Top Award for 'Best Presentation Team'
- 2010 - Top Award for 'Best Implementation of Multipoint'
- 2004 - 3rd Prize Award for 'System Government Elections Software'

#### HEP-IPTS Debate Competition (Ministry of Higher Education Malaysia)

- 2012 - Champion of HEP- IPTS Debate Competition
- 2012 - Best Speaker Award
- 2011 - Champion of HEP- IPTS Debate Competition

#### i-Hack Competition 2013 - by Malaysian Communications and Multimedia Commission (MCMC)

- 2013 - Champion for Forensic Challenge

#### Hack In The Box (HITB) International Competition 2010

- 2010 - 2nd Prize for 'Weapon of Mass Destruction'

#### Malaysia Frost & Sullivan Technology Innovation Award 2010

- 2010 - Award for 'Emerging Human Computer Interface Technologies'

#### World University Debates Championship 2010

- 2010 - Runner-up in the Grand Final

#### MSC Malaysia Creative Industry Awards 2009 (Games Category - Student)

- 2009 - Award for 'Best Game Design'
- 2009 - Award for 'Best Technical'

#### ITEX Awards (International Invention, Innovation & Technology Exhibition)

- 2014 - Gold and Bronze Medals for the Invention, Innovation and Technology category
- 2013 - 2 Silver Medals for the Invention, Innovation and Technology category
- 2013 - 2 Gold medals for the innovator category
- 2009 - Gold Award for 'Best Invention - SmartSurface'
- 2009 - Special Award for Corporate Invention

# ACCOLADES FOR APU



#### Malaysia Cybersecurity Awards (Cybersecurity Malaysia)

- 2013 - Award for 'Cyber Security Education and Training Provider of the Year'
- 2012 - Award for 'Information Security Training Provider of the Year'
- 2009 - Award for 'Information Security Training Provider of the Year'

#### Ministry of Higher Education Malaysia Awards

- 2008 - Top Award for 'Best Website Design'

#### Asian Innovation Awards (Far Eastern Economic Review, Singapore)

- 2004 - Only Malaysian Finalist

#### Prime Minister's Golden Hands Award (Ministry of Works, Malaysia)

- 2004 - Top Award in Network and PC Maintenance category

#### Ministry of Education Excellence Awards (Ministry of Education, Malaysia)

- 2003 - Award of Excellence in Research & Development
- 2003 - Award of Excellence for Development of Overseas Centres

#### Enterprise 50 Award (Accenture & SMI Devt Corp)

- 1998, 1999, 2000 - 3rd position in 2000 among top 50 Malaysian organisations

#### Asia Student .NET Awards (Microsoft Inc.)

- 2003 - 3rd Prize Award for 'Automobile Manufacture Service' software application
- 2003 - 5th Prize Award for 'i-Mall' software application

#### Forum Nokia Mobile Challenge Java Competition (Nokia Inc.)

- 2002 - Top 3 winners worldwide for a Java-based e-mail client application for Nokia devices using J2ME (Java 2 Micro Edition)

#### The BrandLaureate - SMEs Best Brands Awards

- 2012 - Winner of Corporate Branding Award in Education

#### 1Malaysia Innovation Tournament (1MIT) 2010

- 2010 - Winner for 'Best Animated Award'
- 2010 - Winner for 'Most Scariest Video Award'

#### DKSH-CSSC Award

- 2006 - First Prize for DKSH-CSSC Media Challenge 2006

#### Kopitiam Ekonomi Debate Challenge

- 2013 - Champions

#### Hackathon Competitions

- 2013 - Winner for Water Drone Challenge
- 2013 - Winner for Creativity and Awesomeness Challenge

#### Makeweekend Robotics Challenge

- 2013 - Winner of Water Drone Competition
- 2013 - Winner of Awesomeness Challenge

#### Innoserve International ICT Innovative Services Contest

- 2013 - Second Prize of Innoserve International ICT Innovative Services Contest
- 2013 - Best Innovation Award

#### Deloitte Inter-University Tax Competition

- 2013 - First Runner Up
- 2012 - First Runner Up (Individual Category)
- 2012 - 6th Place (Individual Category)

#### Business Excellence Award 2006 (Malaysia Canada Business Council)

- 2006 - Bronze award for Industry Excellence for Education

#### e-Genting Programming Competition (R&D Division, eGenting)

- 2006 - First Prize for 'Software Program Design and Development'
- 2004 - First Prize for 'Software Program Design and Development'
- 2003 - First Prize for 'Software Program Design and Development'
- 2002 - Merit Award for 'Software Program Design and Development'

#### HSBC Young IT Entrepreneur Awards (Hong Kong Bank)

- 2004 - Gold Award for 'Universal Wireless Charging' solution
- 2004 - Judges Award for 'Security Transmitter & Detector' device
- 2002 - Silver Award for 'Business Edutainment Access Medium' Business Plan

#### MSC-IHL Business Plan Competition (Institutions of Higher Learning Business Plan Competition by Multimedia Development Corporation)

- 2012 - Merit prize for Business Idea Category
- 2005 - Grand prize for Business Idea Category
- 2005 - Merit prize for Business Plan Category

# APU WORLD CLASS R&D AND INNOVATION

## Academic Research

For our staff, learning is a continuous journey where we keep abreast with the latest knowledge in a variety of fields. Our academic staff publish papers and present them at conferences worldwide. Some of the areas of research include:

- Regenerative Power
- Renewable/Green Energy
- Sustainable Development
- Rapid Prototyping
- Material Science
- Modeling of Quantum Dot Systems
- Silicon-based Microdosimeter Applications
- Active RFID System in Multi-Hop Wireless Sensor Network
- Automatic Object Retrieval Systems Based on Speech Dictation Technology
- Humanoid Robot development
- Robotics Haptic and Tactile Sensor development
- Robotics Vision development
- Biomedical Robotics



(APCoRE)



(CASE)



(IASS)



The Engineering Centres and Focus Groups are as follows:

### APU Centre of Robotics Engineering (APCoRE)

APCoRE's objective is to develop robotics engineering and research in various areas of robotics especially Humanoid Robot Development, Robotic Sensors, Robotic Vision and Biomedical Robotics. The centre also involves industrial experts feeding into outcome based research and engineering. The centre is also a meeting point for students and lecturers to share ideas and assess their research work.

### Centre for Awareness on Sustainability and the Environment (CASE)

CASE's objective is to engage academic staff and students in studies/research on sustainable development with specific reference to Climate Change, Energy Demands, Carbon Emissions, Government Legislations, Resource Management, Green computing, Green accounting and Sustainable Tourism.

### APU Motorsports Club

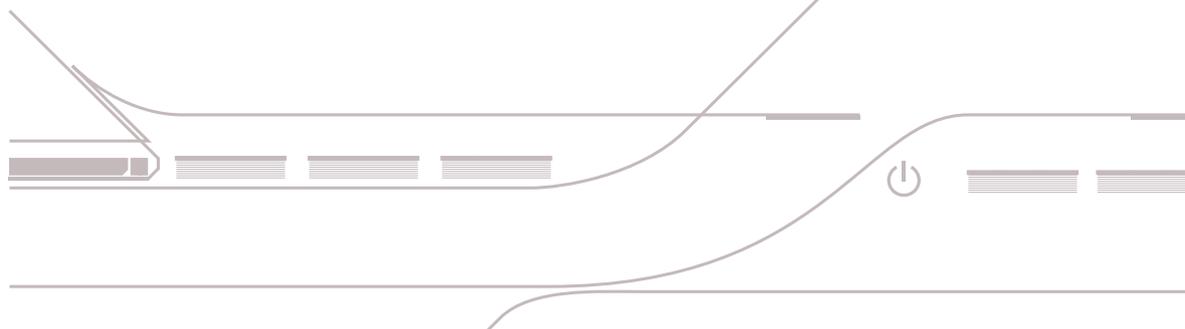
The Club focuses on performance and eco-friendly competitions. The academic staff and students work on constructing efficient cars based on materials study, structural engineering, engine optimum performance and control mechanisms for local races such as EIMA, GT 128, IPMA and Formula Y.

### IEM-APU Student Chapter (IASS)

This is an official student chapter as approved by the Institute of Engineers Malaysia (IEM). The chapter manages all student engineering activities such as industrial talks by engineering experts, competitions, activities and industrial visits.



## World Class Facilities



**A . P . U**  
ASIA PACIFIC UNIVERSITY  
OF TECHNOLOGY & INNOVATION



**A . P . I . I . T**  
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OF INFORMATION TECHNOLOGY

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## APIIT EDUCATION GROUP

Asia Pacific University of Technology & Innovation (APU) Company no. 672203-A  
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