Electrical & Electronic Eng eerina

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Mechatronic

Electronic with IT

Telecommunication

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SCHOOL OF ENGINEERING

PRE-UNIVERSITY PROGRAMME

Degree Foundation Programme **DIPLOMA PROGRAMMES** Diploma in Electrical & Electronic Engineering

DEGREE PROGRAMMES

B. Eng (Hons) in Electrical & Electronic Engineering B. Eng (Hons) in Electronic Engineering with a specialism in Information Technology

B. Eng (Hons) in Telecommunication Engineering B. Eng (Hons) in Mechatronic Engineering

Degrees awarded in association with Staffordshire University



ANABAD PUSABAD



APU amongst the Highest Rated Universities Rated at Tier 5 (Excellent) by Ministry of Higher Education / Malaysian Qualifications Agency under SETARA 2011 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.

Driginally 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 90 countries studying n 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.



t is APU's aim to nurture and encourage innovation through our programmes of study, with the ntention 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 Higher Education (MOHE) and Malaysian Qualifications Agency (MQA) which was announced by the Y.Bhg. Minister of Higher Education on 1st November 2012.

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 all approved by the Ministry of Higher Education of Malaysia and the qualifications are 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 organization 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, organized by the Ministry of International Trade & Industry (MITI), recognizes and rewards organizations for organizational 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 internationalization.



ABARNER IN International Content of the second seco



Staffordshire University has over 17,000 students that make up a dynamic and vibrant community at their campuses in the United Kingdom. Staffordshire University has a long and proud history of providing high quality, progressive and inclusive higher education for people from across Staffordshire, the region, the UK and the rest of the world. Staffordshire University has a reputation for producing graduates with the knowledge, skills and ability to make their mark in the world.



Some facts about Staffordshire University are:

- Staffordshire University's strong focus on employability was underlined in the UK Sunday Times newspaper's 2010 University League Tables, in which it was recognised as a leading UK university for achieving graduate employment.
- One of the first universities in the world to offer computing degrees back in the 1960s, Staffordshire maintains a strong reputation for excellence and innovation in teaching technologybased subjects.
- The University's Computing, Computer Games Design, Network Security, Mechanical, Electrical, Electronic and Automotive Engineering awards are all highly respected by employers globally.
- Staffordshire's Accounting and Finance, Business Studies, Economics, Management and Marketing degrees have all been designed to provide a truly international perspective. This is a real benefit for students wishing to pursue a career in Business or Commerce.
- The University's learning community is truly global. At any one time, in excess of 17,000 students from over 75 countries are studying in Great Britain, by distance learning, or on Staffordshire University quality-accredited courses internationally.

APU's programmes are subjected to extensively External Quality Assurance processes by Staffordshire University, who also award the Undergraduate Degrees. This ensures that our programmes are benchmarked against international standards.

In addition, our solid relationship with Staffordshire University is among the strongest and most successful foreign collaborations in Malaysia, and is particularly notable in our strong shared mission of producing highly employable graduates.

All these things combine to create a university with considerable global expertise - a university that APU is proud to partner with.

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
- Specialized 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

This approved programme is designed to meet the accreditation requirements of the Engineering Accreditation Council of the Board of Engineers Malaysia.

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

The Dual Degree Programmes (DDP)

The **Dual Degree Programmes** are offered through a unique collaborative partnership between APU and Staffordshire University, United Kingdom, through which Staffordshire accredits undergraduate programmes that are designed and delivered by APU. On completion of the programme, students will be awarded two undergraduate degree Certificates and Transcripts: one from APU and one from Staffordshire University.

The programme provides students with enhanced opportunities for further study and career development, especially since both degrees are earned from reputed and quality Institutions from two different countries. The most obvious benefit of the partnership is the opportunity for students to gain degrees from Malaysian and UK higher education institutions that are recognised locally and internationally.

The APU-Staffordshire **Dual Degree Programmes** are offered under an approved collaboration in accordance with the Code of Practice for the Assurance of Academic Quality and Standards in Higher Education as published by the United Kingdom Quality Assurance Agency's (QAA). APU's academic programmes are all approved by the Ministry of Higher Education of Malaysia and the qualifications are accredited by the Malaysian Qualifications Agency (MQA).









Careers in Engineering

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:

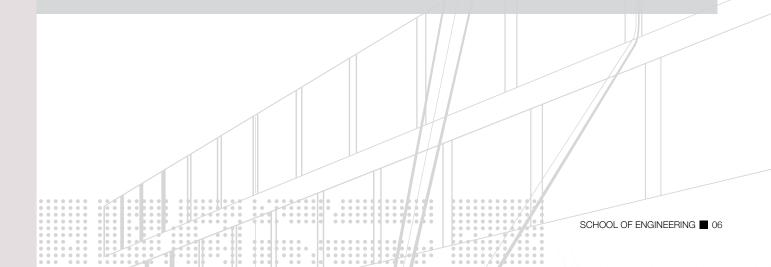
B. Eng (Hons) in Electrical and Electronic Engineering From geographical information systems that can continuously provide the location of a vehicle to giant electric power generators, electrical and electronics engineers are responsible for a wide range of technologies. A degree in Electrical & Electronics 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.

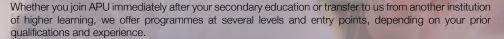
B. Eng (Hons) in Electronic Engineering with a specialism in Information Technology

B. Eng (Hons) in Telecommunication Engineering This Electronic Engineering programme with a specialisation in Information Technology endeavours to produce competent engineers who can interface computer technology with electronics for controlling and monitoring physical devices. Computer systems engineers harness the exponential growth in the capabilities of computer hardware through devices, machines, and appropriate applications. Graduates are ideally suited to jobs involving the development of hardware / software systems for communications, electronics or process control, with work in such diverse industries as telecommunications, power, defence or games technology.

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.

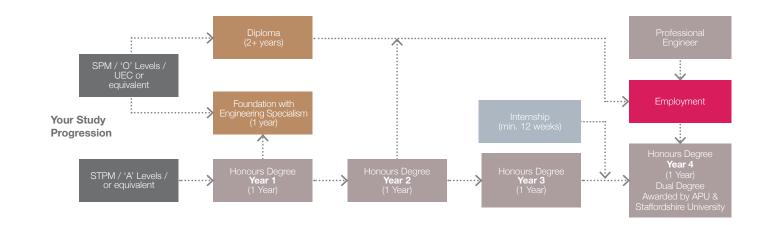
B. Eng (Hons) in Mechatronic Engineering The Mechatronic Engineering course provides the technical and creative know-how needed to achieve the best possible engineering career path. Graduates are also sought after for management positions because of their broad skill base and knowledge of state-of-the-art 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.





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.' (Ingeneiur).

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

Foundation	÷	Diploma	÷	Honours Degree
3 semesters / 1 year full-time	:	6 semesters / 2+ years full-time	÷	8 semesters / 4 years full-time
	:		:	

Admission Requirements

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 at least 5 subjects at SPM level and a minimum of a pass in Bahasa Malaysia; or 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, including Mathematics, and ONE (1) relevant science/technical/vocational subject AND a pass in English at SPM level; 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 one relevant science subject and a pass in 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: Good principal passes at STPM level in Mathematics and Physics and 4 credit passes at SPM which should include a credit in Mathematics and relevant Science subject; or Good passes at 'A' Levels in Mathematics and Physics and 4 Grade C passes at 'O' Levels / GCSE which should include a credit in Mathematics and relevant Science subject; or 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 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)	 Foundaton 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. 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

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

Flexibility of Choice

Our 12-month Foundation Programme is designed to prepare those with SPM, 'O' Levels or similar qualifications with the knowledge and skills to progress into the first year of a degree of their choice.

On completion of the Foundation Programme, you will be able to make an informed decision about your interest and pursue your degree of choice.

During the Foundation Programme, you are able to choose different routes depending on your area of interest. This will allow you to progress onto a specific degree programme at APU, related to this area or other relevant areas based on your foundation experience.



Actuarial Studies

Management Science

This programme is designed to help those with SPM, 'O' Levels or similar qualifications to develop the skills and knowledge to progress into the first year of a degree of their choice.

LEARNING OUTCOMES

You will be able to:

- Enter Level 1 of degree study
- Make an informed choice about what degree you want to study
- Demonstrate an awareness of the concepts which underpin the study of Business, Technology, Media, Accounting, Finance, Quantitative Studies, IT or Engineering
- · Communicate effectively verbally and in writing to a given audience
- Work effectively in a team
- Demonstrate English and other study skills appropriate to undergraduate learning
- Apply skills in numeracy, technology and communication
- Explain the essential elements of technology
- Use appropriate application software and the Internet

The Foundation Programme

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 Business, Accounting & Finance, Technology, Media, Information Technology or Engineering. The modules are:

• Personal Development & Study Methods (4 credits)

SEMESTER 1

• Communication Skills (4 credits) • MQA Compulsory 2

• Mathematics (3 credits)

ROUTE A

SEMESTER 2

SEMESTER 3

- Global Business Trends (3 credits)
- Academic Research Skills (4 credits)
- *You must have previously studied science based subjects to select the Electrical and Electronic Principles module

Business & Finance

• English for Academic Purposes (4 credits)

ROUTE A

- **Business & Finance** • Organisational and Social
- Environments (4 credits)
- Principles of Accounts (4 credits)
- Perspectives in Technology (4 credits)
- MQA Compulsory 3

ROUTE B

Academic Research Skills (4 credits)

• Introduction to Business (4 credits)

ROUTE B

Technology and Business & Finance

• IT Applications (4 credits)

• and choose Route A, B or C

• Further Mathematics (3 credits)

- Technology and Business & Finance • Organisational and Social Environments
- (4 credits)
- Computing & IT (4 credits)
- Perspectives in Technology (4 credits)
- MQA Compulsory 3

• Academic Research Skills (4 credits)

ROUTE C

Engineering & Technology

• Further Mathematics (3 credits)

ROUTE C Engineering & Technology

- Electrical and Electronic Principles (3 credits)
- Engineering Science (3 credits)
 Mechanical Science (3 credits)
- Engineering Mathematics (3 credits)
- MQA Compulsory 3

	: You may then proceed to LEVEL 1 of a Degre	ee of your choice in the following pathways.	
	ROUTE A Business & Finance	ROUTE B Technology and Business & Finance	ROUTE C Engineering & Technology
PROGRAMME PATHWAYS	 Business Business Management E-Business E-Procurement International Business Management Marketing Human Resource Management Tourism Management Services Management Media Marketing Technopreneurship Media Informatics Accounting & Finance Forensic Accounting Taxation Forex and Investments Banking & Finance Financial Planning Investment and Risk Management Islamic Banking & Finance 	 Information Technology Information System Security Intelligent Systems Network Computing Forensic Computing Business Information Systems Software Engineering Internet Technology Enterprise Computing Technopreneurship Computer Games Development Multimedia Technology Web Media Technology Media Informatics Business Business Business Management E-Business E-Procurement International Business Management Marketing Accounting & Finance Forensic Accounting Taxation Forex and Investments Banking & Finance Financial Planning Investment and Risk Management 	 Engineering Electronic Engineering with IT Telecommunication Engineering Mechatronic Engineering Information Technology Information Systems Security Intelligent Systems Network Computing Forensic Computing Mobile Computing Business Information Systems Software Engineering Internet Technology Enterprise Computing Computer Games Development Multimedia Technology Students may also choose the following: Actuarial Studies Management Science

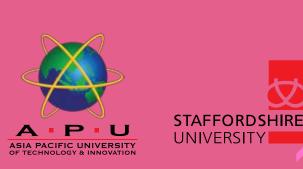
MQA COMPULSORY MODULES (only applicable for Malaysian Students) • Bahasa Melayu (Malay Language)

- Pengajian Malaysia (Malaysian Studies)
- Pendidikan Moral (Moral Studies); or Pendidikan Islam (Islamic Studies)

• MQA Compulsory 1

- Diploma in Electrical & Electronic Engineering
- The B. Eng (Hons) in Electrical & Electronic Engineering
- The B. Eng (Hons) in Electronic Engineering with a specialism in Information Technology

- The B. Eng (Hons) in Telecommunication Engineering
- The B. Eng (Hons) in Mechatronic Engineering



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 four 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.

Engineering Study Pathways

DEGREE PROGRAMMES

(DUAL Degrees awarded by APU & Staffordshire University, United Kingdom)

COMMON LEVEL 1	PROGRAMMES	
Common Level 1	• B. Eng (Hons) in Electrical & Electronic Engineering	
	B. Eng (Hons) in Electronic Engineering with a specialism in Information Technology	
	• B. Eng (Hons) in Telecommunication Engineering	
	B. Eng (Hons) in Mechatronic Engineering	

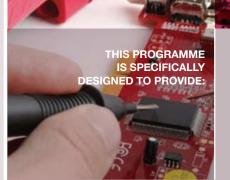
Internship

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.



Diploma in Electrical & Electronic Engineering

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

- Practical English
- Foundation of Engineering Mathematics
- Professional Communications
- Applied Mechanics
- Practical IT Skills
- Business Environment
- Electrical & Electronic Principles
- Engineering Materials
- Engineering Mathematics 1
- Engineering Mathematics 2
- Compulsory MQA modules

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 & Automation
- Generation Transmission & Protection
- Microprocessor 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 a specialism in 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.



ANNE

The 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 such as solar power, wind power, tidal power, vibration and etc
- Generation, transmission and distribution of electric power
- · Instruments and applications in electrical and electronic systems

The B. Eng (Hons) in Electronic Engineering with a specialism in Information Technology

As computer technology is applied to an ever-widening range of electronic engineering applications, it is becoming increasingly important to have engineers who understand both hardware and software, and their interaction, to build the next generation of computer-based electronic systems. The major areas of electronic engineering with information technology include:

- Database design and implementation
- Operating system maintenance
- Implementing embedded systems
- Electronic control systems
- Fundamental and applied research

The 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

The 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 Electrical & Electronic Engineering

- · 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

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, Analogue and Digital Electronics, Engineering Materials, Engineering Statics and Dynamics and Design Principles.

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.

YEAR 2

Here, you start specialising in modules that develop the necessary underlying knowledge and skills in Electrical and Electronics Engineering. Further, in-depth Electrical and Electronic skills are developed here with modules such as Electromagnetic Field Theory, Engineering Software and Applications, Analogue Electronics, Digital Electronics, Signals and Linear Systems, Electrical Machines 1& 2 and Electrical Power Utilisation. Engineering Mathematics is provided for the better understanding of the engineering modules. A common theme that underlines all the awards is the development of innovative thinking with the Creativity & Innovation module. Independent learning continues in all modules.

YEAR 3

Specialised knowledge and skills in the areas of Control Engineering, Communication Engineering Principles, Multimedia Applications, Computer Architecture, Microprocessor Systems and Embedded Software, Numerical Methods, Power Electronic and Drives, Power System Analysis and Generation, Transmission and Distribution of Electrical Power 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 but is a particular focus and requirement in the Engineering Research Methods module.

INTERNSHIP

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

Common Modules

- Analysis of Circuits
- Engineering Materials
- Introduction to Management
- Engineering Statics and Dynamics
- Engineering Mathematics 1
- Introduction to Analogue & Digital Electronics
- Introduction to C Programming
- Engineering Mathematics 2
- Instrumentation and Measurement
- Design Principles

Plus three (3) MQA modules, applicable only to Malaysian students

Common Modules

- Analogue Electronics
- Creativity and Innovation
- 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

Common Modules

- Control Engineering
- Communication Engineering Principles
- Multimedia Applications
- Computer Architecture • Engineering Research Methods
- Numerical Methods
- Generation, Transmission and Distribution of Electrical Powe

Specialised Modules

- Power System Analysis
- Microprocessor Systems and Embedded Software
- Power Electronics and Drives

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, VLSI Design, Analogue Integrated Circuits and Systems, and High Voltage Engineering. 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 Electrical and Electronics Engineering and Innovation Management & New Product Development will enable students to take on R&D with commercialisation. The Electrical and Electronics 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
- Innovation Management & New Product Development

Specialised Modules

- High Voltage Engineering
- VLSI Design
- Analogue Integrated Circuits and Systems

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

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

- 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, Analogue and Digital Electronics, Engineering Materials, Engineering Statics and Dynamics and Design Principles.

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.

YEAR 2

Here, you start specialising in modules that develop the necessary underlying knowledge and skills in Electronics with specialism in Information Technology. Further, in-depth Electronic and Computing skills are developed here with modules such as Electromagnetic Field Theory, Engineering Software and Applications, Analogue Electronics, Digital Electronics, Signals and Linear Systems, Electrical Machines and Power Systems, System Programming and Computer Control, and Programming Concepts in C++. Engineering Mathematics is provided for the better understanding of the engineering modules. A common theme that underlines all the awards is the development of innovative thinking with the Creativity & Innovation module. Independent learning continues in all modules.

YEAR 3

This specialism develops skills and applications required for you to function as a professional in the field of Electronics with Information Technology via suitable modules such as Adavanced Programming Concepts, Computer System Low Level Technique, Control Engineering, Multimedia Applications, Computer Architecture, Microprocessor Systems and Embedded Software, Numerical Methods, and Power Electronics and Drives.

There is further development of the ability to apply relevant engineering skills with strong critical thinking and analysis.

Independent learning continues in all modules but is a particular focus and requirement in the Engineering Research Methods module.

INTERNSHIP

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

Common Modules

- Analysis of Circuits
- Engineering Materials
- Introduction to Management
- Engineering Statics and Dynamics
- Engineering Mathematics 1
- Introduction to Analogue & Digital Electronics
- Introduction to C Programming
- Engineering Mathematics 2
- Instrumentation and Measurement
- Design Principles

Plus three (3) MQA modules, applicable only to Malaysian students

Common Modules

- Analogue Electronics
- Creativity and Innovation
- Engineering Mathematics 3
- Electromagnetic Field Theory
- Digital Electronics
- Engineering Software Applications
- Signals and Linear Systems
 Electrical Machines and Power Systems
- Specialised Modules
- System Programming and Computer Control
- Programming Concepts in C++

Common Modules

- Control Engineering
- Communication Engineering Principles
- Multimedia Applications
- Computer Architecture
- Engineering Research Methods
- Microprocessor Systems and Embedded Software
- Numerical Methods
- Power Electronics and Drives

Specialised Modules

- Computer System Low Level TechniqueAdvanced Programming Language Concepts

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, VLSI Design, Analogue Integrated Circuits and Systems, and Advanced Multimedia. 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 Electronics with specialism in Information Technology and Innovation Management & New Product Development will enable students to take on R&D with commercialisation. The Electronics with specialism in 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.

Note: The specialism will appear only in the academic transcript.

Common Modules

- Engineering Project Management
- Project Phase I (Investigation)
- VLSI Design
- Analogue Integrated Circuits and Systems
- Project Phase II (Implementation)
- Engineer in Society
- Innovation Management & New Product Development
- **Specialised Modules**
- Advanced Multimedia



B. Eng (Hons) in Telecommunication Engineering

- · 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, Analogue and Digital Electronics, Engineering Materials, Engineering Statics and Dynamics and Design Principles.

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.

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 and Applications, Analogue Electronics, Digital Electronics, Analogue Communication, Digital communication, Signals and Linear Systems and Electrical Machines and Power Systems. Engineering Mathematics is provided for the better understanding of the engineering modules. A common theme that underlines all the awards is the development of innovative thinking with the Creativity & Innovation module. Independent learning continues in all modules.

YEAR 3

Specialised knowledge and skills in the areas of, Control Engineering, Multimedia Applications, Computer Architecture, Microprocessor Systems and Embedded Software, Digital Signal Processing, Numerical Methods, Antenna and Propagation, and Modern Communication Systems, 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 but is a particular focus and requirement in the Engineering Research Methods module.

INTERNSHIP

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

Common Modules

- Analysis of Circuits
- Engineering Materials
- Introduction to Management
- Engineering Statics and Dynamics
- Engineering Mathematics 1
- Introduction to Analogue & Digital Electronics
- Introduction to C Programming
- Engineering Mathematics 2
- Instrumentation and Measurement
- Design Principles

Plus three (3) MQA modules, applicable only to Malaysian students

Common Modules

- Analogue Electronics
- Creativity and Innovation
- Engineering Mathematics 3
- Electromagnetic Field Theory
- Digital Electronics
- Engineering Software Applications
- Signals and Linear Systems
- Electrical Machines and Power Systems
- **Specialised Modules**
- Analogue Communication
- Digital Communication

Common Modules

- Control Engineering
- Multimedia Applications
- Computer Architecture
- Engineering Research Methods
- Microprocessor Systems and Embedded Software
- Numerical Methods
- Digital Signal Processing
- **Specialised Modules**

Antenna and Propagation

Modern Communication System

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, VLSI Design, Analogue Integrated Circuits and Systems, Optical Communication and Networks, Microwave and RF Communication and Satellite and Mobile Communication. 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 Telecommunication Engineering and Innovation Management & New Product Development 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
- Project Phase I (Investigation)
- VLSI Design
- Analogue Integrated Circuits and Systems • Project Phase II (Implementation)
- Engineer in Society
- Innovation Management & New Product Development

Specialised Modules

- Optical Communication and Networks
- Microwave and RF Communication
- Satellite and Mobile Communication



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, electonics 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, Analogue and Digital Electronics, Engineering Materials, Engineering Statics and Dynamics and Design Principles.

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.

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 and Applications, Analogue Electronics, Digital Electronics, Sensor and Actuators, Electrical Machines and Drives, Signals and Linear Systems and Strength of Materials. Engineering Mathematics is provided for the better understanding of the engineering modules. A common theme that underlines all the awards is the development of innovative thinking with the Creativity & Innovation module. Independent learning continues in all modules.

YEAR 3

Specialised knowledge and skills in the areas of Mechanical Principles, CAD/CAM, Intermediate Robotics, Control Engineering, Communication Engineering Principle, Fundamental of Thermodynamics and Heat Transfer, Digital Signal Processing, and Numerical Methods, 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 but is a particular focus and requirement in the Engineering Research Methods module.

INTERNSHIP

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

Common Modules

- Analysis of Circuits
- Engineering Materials
- Introduction to Management
- Engineering Statics and Dynamics
- Engineering Mathematics 1
- Introduction to Analogue & Digital Electronics
- Introduction to C Programming
- Engineering Mathematics 2
- Instrumentation and Measurement
- Design Principles

Plus three (3) MQA modules, applicable only to Malaysian students

Common Modules

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

Specialised Modules

- Strength of Material
- Electrical Machines and Drives
- Sensor and Actuators

Common Modules

- Control Engineering
- Communication Engineering Principles
- Engineering Research Methods
- Microprocessor Systems and Embedded Software
- Numerical Methods
- Digital Signal processing
- Specialised Modules
- Intermediate Robotics
- Mechanical Principle
- CAD/CAM
- Fundamental of Thermodynamics and Heat Transfer

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, PLC and Pneumatic System, Advance Robotics and Fluid Mechanics. 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 and Innovation Management & New Product Development 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

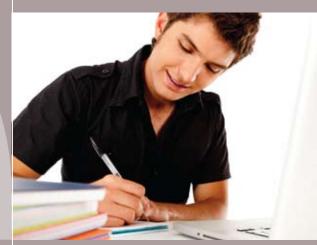
- Engineering Project Management
- Project Phase I (Investigation)
- Project Phase II (Implementation)
- Engineer in Society
- Innovation Management & New Product Development

Specialised Modules

- Mechatronics Design
- Advance Robotics
- PLC and Pneumatic System
- Fluid Mechanics
- Product creation and Technology

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:



- Embedded Systems & RFID
- Biometrics
- Games Engine
- 3D Graphics and Virtual Reality
- Security
- New Media Technologies
- Knowledge Management
- Mobile Learning
- Detecting Pornographic Imag
- Adding Facial Expressions to Talking Head Models
- Marketing Professional Services

- Two and Three Dimension Audio-Visual Speech Synthesis
- Handwritten Signature Verification Using a Single Master Signature
- Customer Care
- E-Learning
- Entrepreneurial Business
- Various Aspects of Accounting
- International Marketing
- Generation of Business Idea
- Organisational Culture Change
- Strategic Diversification Evaluation



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Industry Excellence Awards 2011 2011 - Winner of Prime Minister's Industry Excellence Award
2011 - Winner of Export Excellence Award (Services)
Asia Pacific ICT Awards (APICTA) Malaysia (Multimedia Development Corporation) 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 Smart Learning Applications' 2001 - Merit Award for 'Best of Smart Learning Applications' 2000 - Merit Award for 'Best of Smart Learning Applications' 2000 - Merit Award for 'Best of Student Project' 1999 - Merit Award for 'Best of Student Project'
International Asia Pacific ICT Awards (APICTA) 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'
Malaysia Greentech Awards 2012 (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



Stanford University's Global Innovation Tournament 2009 2009 - Winner for Global Innovation Tournament Global Challenge 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

2004 - Only Malaysian Finalist Prime Minister's Golden Hands Award (Ministry of Works, Malaysia) 2004 - Top Award in Network and PC Maintenance category PIKOM - Computimes ICT Awards 2004 (Association of Computer Industry in Malaysia) 2005 - Product of the Year Award for 'URL Checker' 2004 - Product of the Year Award for 'Screenshield Suite' 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)

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 winner worldwide for a Java-based e-mail client application for Nokia devices using J2ME

Microsoft Imagine Cup (Microsoft Inc.)
2012 - Champion of Microsoft Imagine Cup (Malaysia)
2012 - MDeC Special Innovation Award
2012 - Consolation Prize
2011 - Champion of Microsoft Imagine Cup (Malaysia)
2011 - 1st Runner-up of Microsoft Imagine Cup (Malaysia)
2011 - 2nd Runner-up of Microsoft Imagine Cup (Malaysia)
2011 - MDeC Special Innovation Award
2011 - Presentation Superstars Award

The BrandLaureate – SMEs Best Brands Awards 2012 - Winner of Corporate Branding Award in Educa

- 2011 Presentation Superstars Award
 2010 Champion 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
 Malaysia Cyber Security Awards
 2012 Award for 'Information Security Training Provider of the Year'
 2009 Award for 'Information Security Training Provider of the Year'
 2010 Malaysia Inprovation Tournament (IMIT) 2010

- 1Malaysia Innovation Tournament (1MIT) 2010 2010 Winner for 'Best Animated Award' 2010 Winner for 'Most Scariest Video Award'

Hack In The Box (HITB) International Competition 2010 2010 - 2nd Prize for 'Weapon of Mass Destruction'

And Frize for Weapon of Mass Destruction'
 Malaysia Frost & Sullivan Technology Innovation Award 2010
 (Won by UCTI Graduates)
 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 2009 Awards - Won by UCTI Graduates (International Invention, Innovation & Technology Exhibition) 2009 - Gold Award for 'Best Invention - SmartSurface' 2009 - Special Award for Corporate Invention 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'
 2003 - 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'
 2004 - Gold Award for 'Software Program Design and Development'
 2004 - Gold Award for 'Universal Wireless Charging' solution
 2004 - Judges Award for 'Security Transmitter & Detector' device
 2002 - Silver Award for 'Business Edutainment Access Medium'
 MSC-IHL Business Plan Competition
 (Institutions of Higher Learning Business Plan Competition by
 Multimedia Development Corporation)
 2012 - Merit prize for Business Idea Category
 2005 - Merit prize for Business Plan Category e-Genting Programming Competition (R&D Division, eGenting)



Asia Pacific University of Technology & Innovation Formerly known as UCTI - Asia Pacific University College of Technology & Innovation (A Member of the APIIT Education Group) Company nc. 572203-A

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