

# ENGINEERING



**HIT THE GROUND RUNNING™**

# **VISION**

Changing lives and enriching communities for a better world.

# **MISSION**

- We deliver superior products and services that benefit society, and shape future generations of leaders and thinkers.
- We care for the safety and health of our people, and we believe in developing their talents through empowerment and enabling them to maximise their potential.
- We grow our businesses to deliver sustainable and responsible shareholder returns while ensuring that we continue to protect our environment.
- We must be bold in technological innovations to be market leaders in our core businesses.
- We will leverage on the synergies within our business ecosystem to create unique product offerings.

# **EDUCATION CHARTER**

- We inspire students and staff to lead, share and serve.
- We create a community in which learning, teaching and research are encouraged, enabled and enjoyed.
- We promote critical thinking, independent learning and creative problem solving.
- We nurture individuals to be ethical and responsible global citizens.
- We share our success with stakeholders and the community we serve.

# PARAMOUNT EDUCATION

Paramount Education is the education arm of Paramount Corporation Berhad (PCB), a public listed company with diverse interests and strong positions in property development, investment, construction and educational services.

It's a full spectrum education services provider that offers quality education from pre-school, primary and secondary, both local and international, through to undergraduate and post-graduate levels, as well as executive and professional development programmes.



# KDU IS

## AN ESTABLISHED NAME

Over 35 years of superior private tertiary education

## STUDENT-CENTRED

Good student-lecturer ratio that emphasises personal attention to spark curiosity, inspire success and promote responsibility

## AWARE OF TOMORROW'S NEEDS

Practical knowledge applied throughout the entire programme to manage and solve future challenges

## STAFFED BY EXPERTS

Highly-skilled lecturers and tutors who share decades of experience

## SYNONYMOUS WITH EMPLOYABILITY

More than 90% of KDU's graduates are employed or engaged in further study within 6 months upon graduating

## GLOBAL

Students are given exposure to international standards and practices, collaborations, culture, language and work ethics

## COMPETITIVE

KDU's students compete at local and international platforms and win awards and accolades from international icons and organisations

## KDU Penang University College | Batu Kawan Campus

### The All New Live-And-Learn Environment

Targeted for opening by 2019, the upcoming KDU Campus in Batu Kawan has a feeling of openness, with the building blocks surrounded by green planting / hardscape / spaces formed by The Piazza, The Plaza and Park Avenue. Within the buildings, Park Windows bring the green into breakout spaces centered in the learning cluster, creating an outward-looking collaborative mode.

### MAIN CENTRAL CONGREGATION SPACE

The Piazza is a large, open-to-sky, gathering space on the 2<sup>nd</sup> floor where bazaars, fund-raising events and outdoor performances can be held. It is a combination of turf and hardscape.

### BREAKOUT SPACES

On the ground floor, the Cafeteria spills out around a cooling Water Concourse and an educational Herb & Spice Garden. At the student drop-off, The Galleria exhibits students' works. An outdoor Sculpture Garden along the building displays bigger sculptural art works and installations by the students.



# KDU Penang University College | Anson Campus

## Building A Strong Foundation

Spurred by the success of the Petaling Jaya campus, the KDU board decided to expand the college beyond the Damansara Utama vicinity and plans were quickly made to make this dream a reality. From there, a decision was made to set up a branch campus in Penang with the aim of providing further education access to Penangites as well as the community in Northern Malaysia.

KDU Penang University College began its chapter when it opened its doors to its first batch of students in 1991. Since then, KDU Penang University College has grown by leaps and bounds. Now, sitting proudly in Jalan Anson, KDU Penang University College is the most popular private tertiary education provider in the northern region. It has an international alumni from more than 60 countries around the world.

KDU Penang University College's range of internationally recognised industry-driven academic programmes covers a wide level of offerings from Pre-University studies to Postgraduate programmes. All its programmes are accredited by the Malaysian Qualifications Agency and are internationally affiliated with top universities around the globe such as University of Lincoln and Northumbria University from the United Kingdom and the IMI International Management Institute Switzerland.

KDU Penang was conferred an all-round 6-star College status by the Ministry of Higher Education (MOHE) MyQuest Audit 2014/2015. It boasts of state-of-the-art facilities which include industry-standard 5-star kitchens, a Recording Studio, Art Gallery and Design Studios, VLSI engineering labs, Games and Multimedia Computing Design Labs, Business Boardrooms and Lounge, Mock Hotel Suites and many more. All this helps to ensure that every KDU student is well prepared to be gainfully employed upon graduation – an indisputable fact that has strengthened the institution's impressive graduate employment ratio record.

Over a span of 25 years, our students continue to do us proud with a string of successes in various national and international competitions. In July 2013, KDU Penang was also awarded the Penang MPSP Green Industry Award for the SME Education and Awareness category. For real education in the real world – **HIT THE GROUND RUNNING™** with KDU Penang University College.



# CULTIVATING AN ENTREPRENEURIAL MINDSET



## **Best Business Project Idea 2017 Competition**

The Student Entrepreneur Programme is an initiative set up by KDU Penang University College to encourage student-run start-ups, essentially providing a platform for students to gain practical, real-life experiences in setting up and running their own businesses.

In addition to expanding their knowledge and skills, the management of their start-ups, as well as integrated project work, provides them with hands-on experience.

The initiative bridges the gap between academia and industry, bringing a business world element to the campus, and provides students with a better picture of what one might face as an entrepreneur.



## **4<sup>th</sup> International Student Conference - “Be the Innovators”**

The 4<sup>th</sup> International Student Conference (ISC) themed “Be the Innovators” organised by KDU Penang University College’s Student Council was held from 25 – 27 September 2017, and attracted more than 150 students from 11 countries – China, Hong Kong, Myanmar, Vietnam, United Kingdom, Sri Lanka, Korea, Thailand, Brunei, Turkestan and Malaysia. This 3-day conference was filled with talks by prominent speakers sharing their valuable experiences and knowledge. On the first two days, workshops and teambuilding activities were also included. The event ended with a full day tour of Penang.



## **Sharing Moment with Successful Entrepreneurs**

KDU Penang UC students were treated to an eye-opening session in 2017 as two established entrepreneurs shared their experiences and insights on having a start-up business. Clarence Leong, founder and CEO of easyParcel, was a Top 10 entrepreneur in 2016’s JCI CYEA (Creative Young Entrepreneur Award) and recently received Merit for SOBA (Star Outstanding Business Award). Leong Shir Mein, CEO of Delivereat, was Top 10 in a list of remarkable female entrepreneurs (Vulcan Post).



## **Business Start-Up Coaching Day**

The KDU Business Startup Coaching Day was held on 21 April 2017, featuring highly-experienced speakers Dr Supi Yeoh and Mr Richard Oon Hock Chye, who both have years of invaluable experience in their respective fields. Attendees were taught the fundamentals of how to achieve their dreams of running their own business, beginning from the start-up level.



## **The Business Challenge Workshop**

The Business Challenge Workshop, in collaboration with Malaysian Global Innovation & Creativity Centre (MaGIC), was held on 14 September 2017. The attendees took part in activities that challenged their innovative thinking skills, as well as their critical decision-making skills. At the end of the workshop, as a gold standard test of a balance between innovation and practicality, students pitched plans and new ideas.

# WORKING WITH & WITHIN COMMUNITIES



## **“Start Today, Save Tomorrow” Mud Ball Project**

Organised by Junior Chamber International (JCI) Batu Kawan and co-organised by KDU Penang, “Start Today, Save Tomorrow” Mud Ball Project was held at Sungai Jawi, on 14 October 2017. JCI Batu Kawan and KDU Penang spent two months preparing for this event. Lecturers and staff from KDU Penang took a week to run workshops on environmental protection and river pollution awareness at secondary schools in Seberang Perai Selatan. The preparation of mud balls involved about 600 teachers and students as well as parents. The main objective was to create environmental awareness on clean and healthy rivers among students.



## **KDU Penang Launched Christmas Donation to Charity Organisations**

Due to the overwhelming response, members of the Engineering Society of KDU Penang again held a charity event called Rudolph’s Shoebox to celebrate Christmas last year. Rudolph’s Shoebox encouraged students and staff to place gifts around the Christmas tree at the foyer. The gifts were donated to Kechara Soup Kitchen Penang and St Joseph’s Home Penang.

The Engineering Society also raised funds for both charities to help them get some extra cash for the holiday season. The Christmas tree and Snowman built with recycled plastic cups remained at the foyer until the end of the year.



## **Community Service Accompanied by Fun and Games!**

Twenty students from KDU Penang were involved in the Community Service of International Scout Exchange Program for Chung Ling High School Penang and Zhonghua Secondary School Singapore. Lead by Ms Ng Fong Chiu, senior lecturer of the Department of Computing, the event saw about 80 students participating in the project.



## **Staff Development Programme for SMJK Chung Ling**

KDU Penang’s senior lecturers from the School of Engineering, Computing and Built Environment conducted a staff development programme for 200 staff members (academic and nonacademic) from SMJK Chung Ling on the campus. Topics covered included “The Flipped Classroom and Instructional Video-Developing Using SOM” by Ms Ng Fong Chiu and Ms Tan Mei Hooi.



## **Hand-in-Hand for Penang Flood Victims**

Students and staff from KDU Penang collaborated with Universiti Sains Malaysia (USM) to help victims when massive floods hit Penang in early November 2017.

The Student Service Department (SSD) set up a donation box to collect essential items, money and cleaning accessories. Together, they cleaned KDU Penang’s lecturer Mr Saravanan Maniam’s house in Bukit Mertajam, which was inundated.

Another team of 20 KDU Penang students helped prepare food and packed essential items for victims at Dewan Besar, Sungai Dua.

# DEPARTMENT OF ENGINEERING

Engineering may not be the easiest area of study, but it is the lore that continues to be in demand, and graduates are more likely to find employment quickly and work their way up the career ladder with an engineering degree under the belt. As Malaysia strives towards a developed nation status, engineers have a key role to play in enhancing the quality of life through the advancement of science and technology. With such a pivotal role to play, qualified and skilled engineers are in escalating demand throughout the world.

Being an engineer brings prestige, a wide variety of career progression opportunities, the chance to improve the world, worldwide travel and employment opportunities, as well as career satisfaction. More importantly, it sets one up for professional success. Engineers can be Entrepreneurs; we call them “Technopreneurs”.

## **Why KDU is the preferred choice:**

### **Employability**

More than 95% employment rate within the first 6 months of graduating. On-campus career talks and walk-in interviews are regularly conducted for graduates.

### **Expert Educators That Connect Research**

Our strong faculty has an excellent combination of research and industry experience to give students the best of both worlds. The academic experts are active researchers who engage in scholarly activities to bring the latest technology innovations into the classroom. Our invited industry specialists also provide real-world insights for students in the areas of technology and industry.

### **Industry-ready**

Internships are compulsory in all our diploma and degree programmes, enabling students to apply their learning in realistic situations. There are more than 50 industrial partners for internships/graduate placements. Professional certification programmes such as MyTRIZ Level 1 Practitioner, SOLIDWORKS Certifications and Certified LabVIEW Associate Developer were set up to enhance the graduates' industry readiness. More certification programmes will be brought in.

### **A Robust Curriculum with Emphasis on Multiple Disciplines and Project-based Learning**

Our engineering curriculum emphasises the development of transferable soft skills to allow graduates to excel across different job landscapes. Students are required to complete engineering projects as part of their diploma or degree studies, equipping them with skills to solve complex real-world problems.

### **Strong Industry Linkages**

The Professors Industry Advisory Board of the Department of Engineering are made up of industry professionals, professional engineers and technopreneurs. They provide valuable current industry insights to enhance our curriculum and student learning.

# **ENGINEER YOUR FUTURE**



# STUDY ROUTE

**KDU PENANG UNIVERSITY COLLEGE**  
**DOCTOR OF PHILOSOPHY(ENGINEERING)**

**KDU PENANG UNIVERSITY COLLEGE**  
DUAL AWARD-VALIDATED BY  
NORTHUMBRIA UNIVERSITY, UK  
**MASTER OF SCIENCE IN  
ENGINEERING PROJECT  
MANAGEMENT**

**MASTER OF SCIENCE  
(ENGINEERING)**

**KDU PENANG UNIVERSITY COLLEGE**  
DUAL AWARD-VALIDATED BY  
NORTHUMBRIA UNIVERSITY, UK  
**BACHELOR OF SCIENCE (HONS)  
ELECTRICAL AND ELECTRONIC  
ENGINEERING**

**BACHELOR OF SCIENCE (HONS)  
MECHATRONICS ENGINEERING**

**KDU PENANG UNIVERSITY COLLEGE**  
**DIPLOMA IN ELECTRICAL  
AND ELECTRONIC ENGINEERING  
[MICROELECTRONICS] / [MECHATRONICS]**  
2.5 years

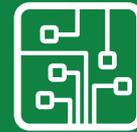
SPM / O-LEVEL OR EQUIVALENT

FOUNDATION STUDIES / STPM  
/ UEC / A-LEVEL OR EQUIVALENT

Advanced standing into Year 2

Year 1 entry

# GET THE **VLSI** ADVANTAGE USING LATEST INDUSTRY-ADOPTED DESIGN SOFTWARE



## What is VLSI in the first place?

Known as “Very Large Scale Integration”, it is a field which involves the packing of large amounts of logic devices into Integrated Circuits or technically known as ICs. These VLSI circuits are used in your everyday technological devices such as computers, cars, digital cameras, mobile and smart phones, iPad, etc.



## How is it important?

It is an essential tool for budding engineers who are looking to get ahead in the technology race. In fact, majority of the semiconductor makers have placed it as an employment requirement which candidates must pass during job interviews.



## Why do we have the edge in VLSI training?

Our Diploma in Electrical & Electronic Engineering (Microelectronics) and 3+0 B.Eng. (Hons) Electrical & Electronic Engineering programmes include intensive training in the operation of the Mentor Graphic Electronic Design Automation (EDA) tools. These tools provide complete solutions for IC Design to help engineers overcome design challenges in the increasingly complex world of IC and board design.



## How is it applied in the world of semiconductor manufacturing?

It's integral in the design of microprocessors and what it does is that it integrates all the sub systems in a microprocessor into a single ICs with higher performance output and lower power consumption.

## How is this software special for KDU Penang Engineering graduates?

Mentor Graphics founded the education programme which provides colleges and universities with leading edge design tools for classroom instruction and academic research. Hence, our graduates will enter into the industry with proficiency in the state-of-the-art tools and techniques. Mentor Graphics EDA software is a Tier-1 EDA software widely used by industries, which include but are not limited to MIMOS Design Centre, Intel, Altera, Motorola, Silterra, Agilent, Avago, X-Fab and Spansion. This means that our graduates will have an advantage in securing engineering positions with established semiconductor R&D and manufacturing companies all over Malaysia and the world.

# DIPLOMA IN ELECTRICAL AND ELECTRONIC ENGINEERING [MICROELECTRONICS]

R/523/4/0231 12/19 (A9865)

This course introduces you to the concepts of Physical Electronics, VLSI Technology, design and fabrication of miniaturised electronic devices and systems designed for the generation, transmission and distribution of electricity. Specifically designed to integrate two major areas, this comprehensive programme provides you with more flexibility in choosing or tailoring your career path.

**Duration** 2.5 years  
**Course mode** Full-time  
**Intakes** January, April and August  
**Course location** KDU Penang University College



# PROGRAMME STRUCTURE

## YEAR 1

- Analogue Electronics
- Electric Circuits I & II
- Engineering Mathematics I & II
- Fundamentals of Computer Systems
- Semiconductor Devices & Applications
- Basic Programming
- Microcontroller System Design & Applications
- Digital Electronics
- Personal Development & Leadership Skills

## YEAR 2

- Engineering Mathematics III
- Very Large Scale Integration
- Technopreneurship
- Electric Machines
- Power Electronics
- Advanced Computer Programming
- Electric Power Systems Fundamentals
- Introduction to Inventive Problem Solving in Engineering
- Industrial Training

## YEAR 3

- Wafer Fabrication and IC Packaging
- Project Lab

## MPU SUBJECTS

### Local

- Pengajian Malaysia 2
- Bahasa Kebangsaan A / Oral Communication 2
- Ethics and Moral 2
- Holistic Personal Development

### Foreign

- Bahasa Melayu Komunikasi 1
- Oral Communication 2
- Ethics and Moral 2
- Holistic Personal Development

## CAREER OPPORTUNITIES

- Test
- Manufacturing
- Process
- Quality Control
- IC Design & Packaging
- R&D
- Technical Training Executive

# DIPLOMA IN ELECTRICAL AND ELECTRONIC ENGINEERING [MECHATRONICS]

R/523/4/0014 04/21 (FA0284)

This programme is broad-based and specifically designed to integrate three major areas – electrical, electronics and mechanical engineering - into one stream. These courses give students a theoretical and practical introduction to a career in electrical, electronics & mechanical engineering. This comprehensive, organised and focused programme provides the students with more flexibility in choosing or tailoring their career paths and endeavours.

**Duration** 2.5 years  
**Course mode** Full-time  
**Intakes** January, April and August  
**Course location** KDU Penang University College



# PROGRAMME STRUCTURE

## YEAR 1

- Analogue Electronics
- Electric Circuits I & II
- Engineering Mathematics I & II
- Fundamentals of Computer Systems
- Semiconductor Devices & Applications
- Basic Programming
- Microcontroller System Design & Applications
- Digital Electronics
- Personal Development & Leadership Skills

## YEAR 2

- Engineering Mathematics III
- Technopreneurship
- Introduction to Inventive Problem Solving in Engineering
- Mechatronics System Design
- Engineering Materials
- Computer Aided Design / Drafting
- Instrumentation and Control
- Applied Pneumatics and Hydraulics
- Industrial Training

## YEAR 3

- Robotic Technology
- Project Lab

## MPU SUBJECTS

### Local

- Pengajian Malaysia 2
- Bahasa Kebangsaan A / Oral Communication 2
- Ethics and Moral 2
- Holistic Personal Development

### Foreign

- Bahasa Melayu Komunikasi 1
- Oral Communication 2
- Ethics and Moral 2
- Holistic Personal Development

## CAREER OPPORTUNITIES

- Test
- Manufacturing
- Process
- Quality Control
- R&D
- Technical Training Executive
- Draftman
- Computer Aided Design

# BACHELOR OF SCIENCE (HONS) ELECTRICAL & ELECTRONIC ENGINEERING DUAL AWARD-VALIDATED BY NORTHUMBRIA UNIVERSITY, UK

N/523/6/0308 08/25 (PA9776)

Electrical and Electronic engineering is at the forefront of developing new technologies for a number of industries including transport, healthcare, construction, and robotics. This engineering discipline is built on the idea of improving systems to help humanity. The structure of the programme provides opportunity for industrial experience and specialisation in the final year. The industrial placement emphasises the relevance of the programme, increases confidence and enhances employment prospects. The idea of this attachment is to enable students to gain first-hand experience in industry as well as an insight to how theories are put into practice in the real engineering situations. This short attachment in industry is beneficial as it provides the intellectual challenge to students especially in the final year and when carrying out their final year project.

Graduates of a dual award degree programme receive a degree award from both KDU Penang University College and our partner university. A dual award degree programme constitutes completion of a single programme of study and is differentiated from a double - degree.

**Duration** 3 years / 6 years  
**Course mode** Full-time / Part-time  
**Intakes** January, June and September  
**Course location** KDU Penang University College

Validated by:



**Northumbria  
University**  
NEWCASTLE

# PROGRAMME STRUCTURE

## YEAR 1

- Engineering Statics & Dynamics
- Computer Programming
- Circuit Theory
- Digital Electronics
- Engineering Skills in Experimentation and Presentation
- Engineering Mathematics 1
- Telecommunication System Principles
- Electronic Devices
- Microprocessors and Microcontrollers
- Electric Power and Machines
- Introduction to Inventive Problem Solving in Engineering
- Engineering Mathematics 2
- International English Language Testing System

## YEAR 2

- Engineering Mathematics 3
- C Programming
- Instrumentation and Control
- Analogue Electronics
- Signals, Circuits and Systems
- Power Generation and Transmission
- Numerical Methods
- Digital Systems
- Communication Systems
- Sustainable Energy Systems
- Engineering Design
- Operational Management and Engineering Economics

## YEAR 3

- Project Management
- Digital Signal Processing
- Manufacturing Analysis
- Individual Engineering Project 1
- Individual Engineering Project 2
- Electronic Circuit Design
- Power Electronics and Drive Systems
- Industrial Attachment

## ELECTIVE COURSES

### Electronics

- Very Large Scale Integration
- Digital System Design and Implementation
- Embedded Systems

### Electrical

- High Voltage Engineering
- Industrial Instrumentation and Modern Control Systems
- Power System Analysis

### Communications

- Wireless and RF Communication System Design
- Optical Communication System Design
- Computer Networking and Security

## MPU SUBJECTS

### Local

- Hubungan Etnik
- TITAS
- Bahasa Kebangsaan A / IELTS Preparatory Course
- Ethics & Moral 3
- Holistic Professional Development

### Foreign

- Bahasa Melayu Komunikasi 2
- Pengajian Malaysia 3
- IELTS Preparatory Course
- Ethics and Moral 3
- Holistic Professional Development

## CAREER OPPORTUNITIES

- Semiconductor
- Electrical
- Electronics
- Instrumentation
- Audio & Video
- Automotive
- Construction
- Manufacturing
- Semiconductor
- Energy
- Building Services Sectors

*The accreditation of this programme will be done by Malaysian Qualification Agency (MQA) and not Engineering Accreditation Council (EAC). Hence, this 3-years BSc. (Hons) programme is not recognised by Board of Engineers Malaysia (BEM).*

# BACHELOR OF SCIENCE (HONS) MECHATRONICS ENGINEERING DUAL AWARD-VALIDATED BY UNIVERSITY OF LINCOLN, UK

N/523/6/0309 08/25 (PA9777)

Mechatronics is the most wide-ranging of the engineering discipline and is applicable to industry, government, environment and society. The manufacturing industry plays a prominent role in Penang's economy. For this industry to continue to flourish there is a need for more qualified and trained manpower to support automation to ensure the smooth running of the industry. Mechatronics is considered 'modern mechanical engineering', that it integrates mechanical system with electrical & electronics for better feedback and control into a complete system.

Graduates of a dual award degree programme receive a degree award from both KDU Penang University College and our partner university. A dual award degree programme constitutes completion of a single programme of study and is differentiated from a double - degree.

**Duration** 3 years / 6 years  
**Course mode** Full-time / Part-time  
**Intakes** January, June, and September  
**Course location** KDU Penang University College



Validated by:



UNIVERSITY OF  
LINCOLN  
UNITED KINGDOM



# PROGRAMME STRUCTURE

## YEAR 1

- Engineering Mathematics 1
- Engineering Drawing
- Engineering Skills in Experimentation and Presentation (revised syllabus)
- Computer Programming
- Workshop Technology
- Electrical and Electronic Principles
- Engineering Mathematics 2
- Engineering Statics and Dynamics
- Engineering Materials
- Engineering Design
- Electric Power and Machines (revised syllabus)
- Introduction to Inventive Problem Solving in Engineering
- Electrical and Electronic Principles
- International English Language Testing System

## YEAR 2

- Engineering Mathematics 3
- Microprocessors and Microcontrollers
- Instrumentation and Control
- Thermo-Fluids Science
- Strength of Materials
- Introduction to Robotics
- Numerical Methods
- Mechanical Engineering Design
- Analogue Electronics
- Manufacturing Technology
- Operational Management and Engineering Economics
- Engineers in Society

## YEAR 3

- Project Management
- State-Space Control
- Industrial Automation
- Energy System and Conversion
- Individual Engineering Project 1
- Robotics and Automation
- Signal Processing and System Identification
- Heat Ventilation and Air Conditioning
- Individual Engineering Project 2
- Mechanical Design and Analysis
- Sustainable Energy Systems
- Advanced Manufacturing Systems
- Dynamics of Machines
- Industrial Attachment

## MPU SUBJECTS

### Local

- Hubungan Etnik
- TITAS
- Bahasa Kebangsaan A / IELTS Preparatory Course
- Ethics & Moral 3
- Holistic Professional Development

### Foreign

- Bahasa Melayu Komunikasi 2
- Pengajian Malaysia 3
- IELTS Preparatory Course
- Ethics and Moral 3
- Holistic Professional Development

## CAREER OPPORTUNITIES

- Automotive
- Aeronautical
- Robotics
- Biomedical
- Automation
- Process Control
- Construction
- Manufacturing
- Semiconductor
- Energy
- Building Services Sectors

*The accreditation of this programme will be done by Malaysian Qualification Agency (MQA) and not Engineering Accreditation Council (EAC). Hence, this 3-years BSc. (Hons) programme is not recognised by Board of Engineers Malaysia (BEM).*

# MASTER OF SCIENCE IN ENGINEERING PROJECT MANAGEMENT

**DUAL AWARD-VALIDATED BY  
NORTHUMBRIA UNIVERSITY, UK**

N/520/7/0089 12/21 (PA8051)

Validated by:



**Northumbria  
University**  
NEWCASTLE

This programme is designed for students with a background in engineering who wish to advance their career in the management of engineering-based industry.

The programme allows you to update, extend and deepen your knowledge in engineering and management, to enhance your career opportunities in industries, or as a preparation for further academic research. A wide range of modules such as data analysis, management, business and finance will give students an opportunity to integrate and apply engineering within a practical business context.

While developing their appreciation of management, students will also deepen their existing core engineering skills in areas such as computer-aided design, solid modelling and prototyping and engineering data analysis. To achieve the full MSc qualification, students will also complete an MSc Project, which will give them the opportunity to carry out research in an area of particular interest to them and their career aspirations.

Graduates of a dual award degree programme receive a degree award from both KDU Penang University College and our partner university. A dual award degree programme constitutes completion of a single programme of study and is differentiated from a double - degree.

**Duration** 1 year

**Intakes** January, May and September

**Course location** KDU Penang University College



## PROGRAMME STRUCTURE

### SEMESTER 1

- Engineering Management Data Analysis
- Project, Programme and Portfolio Management
- Project Risks and Earned Value Management
- Project Management Research Methods

### SEMESTER 2

- Project Management
- Technology Entrepreneurship
- Interdisciplinary Product Design and Development

### SEMESTER 3

- MSc Dissertation

# RESEARCH DEGREE PROGRAMMES

KDU Penang University College provides a wide range of postgraduate programmes for both recent degree graduates and working adults who have an interest in pursuing postgraduate studies. We offer programmes which are industry compatible, delivered by academic experts, as well as providing the library resources and research eco-system you would expect from a leading University College. KDU Penang University College has over 80% of academic staff qualified with a minimum of a Master's degree and in excess of 20% with a doctorate level qualification. They are qualified to guide you in your pursuit of knowledge in their research area. This expertise can be utilised by the postgraduate student to enhance their existing competency and knowledge in the area of research they wish to pursue.

KDU Penang University College postgraduate by research students will spend a minimum of 3 years for a full-time Ph.D. degree programme and 2 years for a Master degree programme. Flexible part-time study options are available. Students who are enrolled in these programmes are provided with 2 mandatory modules that will enhance their research as well as analytical skills. The table below summarises the list of postgraduate programmes at KDU as well as a suggested list of possible research areas that you may like to pursue. Don't however be constrained by this list, let your imagination run wild and chat with academic staff on tailoring a research topic for your needs.

## MASTER OF SCIENCE (ENGINEERING)

N/520/7/0110 01/23 (PA9272)

This programme provides you opportunity to specialise in a chosen field of engineering research. You will understand, study and demonstrate your expertise in an engineering research topic through your dissertation. You will develop your research skills through two taught modules, i.e. research methodology and quantitative analysis.

### Areas For Research

A flexible framework is provided enabling you to pursue your research passion working closely with your supervisors, academic experts, industry practitioners, government agency(s) from local and international fields in the following areas:

- Advanced Materials
- Artificial Intelligent
- Electrical and electronic
- Embedded System
- Green manufacturing
- Image Processing
- IOT / Industry 4.0
- Manufacturing and system engineering
- Quality
- Renewable/Sustainable energy
- Solid mechanics and materials
- Thermo-fluids and turbomachinery

### Modules

The programme consists of two taught modules, and a dissertation. You will be required to pass 2 modules and the dissertation to be awarded the MSc. The modules comprise:

- Research Methods
- Quantitative Analysis
- Dissertation

**Duration** 2-4 years (Full-time) / 3-6 years (Part-time) **Intake** January and July **Course location** KDU Penang University College

## DOCTOR OF PHILOSOPHY (ENGINEERING)

N/520/8/0105 01/23 (PA9273)

This programme provides you with the opportunity to specialise in a chosen field of engineering research. You will understand, study and demonstrate your novelty in engineering research and contribution to engineering knowledge through your dissertation. This is the best way for you to demonstrate your research passion, discover new knowledge, contribute to engineering knowledge and being recognized for your contribution through attainment of a doctoral degree. You will develop your research skills through two taught modules, i.e. research methodology and quantitative analysis.

### Areas For Research

A flexible framework is provided enabling you to pursue your research passion working closely with your supervisors, academic experts, industry practitioners, government agency(s) from local and international fields in the following areas:

- Advanced Materials
- Artificial Intelligent
- Electrical and electronic
- Embedded System
- Green manufacturing
- Image Processing
- IOT / Industry 4.0
- Manufacturing and system engineering
- Quality
- Renewable/Sustainable energy
- Solid mechanics and materials
- Thermo-fluids and turbomachinery

### Modules

The programme consists of two taught modules, and a dissertation. You will be required to pass 2 modules and the dissertation to be awarded the PhD. The modules comprise:

- Research Methods
- Quantitative Analysis
- Dissertation

**Duration** 3-6 years (Full-time) / 4-8 years (Part-time) **Intake** January and July **Course location** KDU Penang University College

# OUR INTERNATIONAL PARTNERS

KDU Penang University College's international partnerships comprise many prestigious universities around the world that deliver top quality undergraduate and postgraduate programmes. Besides academic quality, they also have large international student populations, celebrate a diversity of cultures and with helpful staff members, are always willing to help students adjust and settle down. This is in line with KDU's mission, which is to provide superior learning experience in a caring and conducive environment for our students to be successful and relevant individuals in the society.



## Northumbria University, UK

Northumbria University at Newcastle-upon-Tyne is an expanding multicultural learning community with excellent links with further and higher education, industry and commerce players throughout the UK, Europe and beyond. Renowned for its teaching excellence as well as its student preparation for the world of work, Northumbria also provides research opportunities for professional reflective practice.



## University of Lincoln, UK

The University of Lincoln is highly regarded for its innovative approach to teaching, learning and engagement, and was rated the UK's number one modern university by The Times and Sunday Times Good University Guide 2016.

Lincoln is proud to be home to world-leading researchers who are making profound contributions to their subject areas. More than half of the researches submitted by Lincoln to the national Research Excellence Framework (REF) 2014 were judged to be internationally excellent or world-leading (3\* or 4\*) – the highest scores possible.



# OUR INDUSTRY PARTNERS

KDU Penang University College engages with many external partners on a mutually beneficial basis to deliver real value to both organisations. For internship training, we focus strongly on preparing students for rewarding careers in a wide array of industries and professions. Our industry partners include: Inari Technology Sdn Bhd, Intel Technology Sdn Bhd, Jabil Circuit Sdn Bhd, Lumileds Malaysia Sdn Bhd, Microsoft DreamSpark, NationGate Technology (M) Sdn Bhd, NI Malaysia Sdn Bhd, Plexus Manufacturing Sdn Bhd, Penang Skills Development Centre, Sony EMCS (Malaysia) Sdn Bhd – PG and Vitrox Corporation Berhad.



And many more.....

# SUCCESS STORIES

2018

**INTERNATIONAL INNOVATION AND INVENTION COMPETITION THROUGH EXHIBITION (I'COMPEX 2018)**

3 Silver medals

**THE GRAND CHALLENGE 2018, PENANG**

2<sup>nd</sup> Prize

2017

**PENANG HILL VISITORS' EXPERIENCE DESIGNATHON 2017**

Champion

**INNOVATE MALAYSIA 2017**

Finalist (Consolation) (Asia)

2016

**IHL STARTUP CHALLENGE 2016**

1<sup>st</sup> Runner-up and 2<sup>nd</sup> Runner-up for non-degree category

**DIGI CHALLENGE FOR CHANGE COMPETITION**

Top 30 finalist

**GLOBAL BUSINESS SERVICES (GBS) CHALLENGE 2016**

1<sup>st</sup> Runner Up

**JEJU GLOBAL HACKATHON**

Most Popular Award and Excellence Award

**MALAYSIA TRIZ INNOVATION ASSOCIATION (MYTRIZ) CONFERENCE 2016**

Presented 3 conference papers

**INTERNATIONAL REVIEW OF MECHANICAL ENGINEERING (I.RE.M.E.)**

Published 1 journal paper

2015

**SAMSUNG SOLVE FOR TOMORROW**

1 student in Top 10 and 1 student in Top 20

**INNOVATE MALAYSIA COMPETITION 2015**

2<sup>nd</sup> Runner-Up (National Instruments Track)

**GO GREEN IN THE CITY COMPETITION 2015**

Malaysia Stage Champion

2014

**PRISM OF POSSIBILITIES WITH TRIZ COMPETITION 2014**

Merit prize

**MSC MALAYSIA-IHL STARTUP CHALLENGE 2013 / 2014**

2<sup>nd</sup> Runner-Up (Business Plan Category)

**4<sup>TH</sup> GLOBAL COMPETITION/EXHIBITION ON SYSTEMATIC INNOVATION 2014**

2x Honorable Mention Award

**GO GREEN HUNT 2014**

Malaysia Book of Records for the Longest Penang Bridge Model using Recyclable Newspapers

2013

**MOTO INNOCUP 2013**

1<sup>st</sup> Runner Up

**COMIIC 2013**

Silver Medal Award

**MSC MALAYSIA-IHL BUSINESS PLAN COMPETITION 2012 / 2013**

Merit prize (Business Plan Category)

2012

**MSC MALAYSIA-IHL BUSINESS PLAN COMPETITION 2011/2012**

Merit prize (Business Plan Category)

2011

**DESIGN INNOVATION EXPO 2011**

Best Overall Design, Multidisciplinary Award, Sevaraja Award for the Best Project, Most Innovative, Best UNN Y3 Project.

**MSC MALAYSIA-IHL BUSINESS PLAN COMPETITION 2010/2011**

1<sup>st</sup> Runner-Up (Business Idea Category)

# KDU ALUMNI

KDU believes that people should learn more from people and not just from books.

Here at KDU Penang University College, not only are lessons learned but people are celebrated for the inspiration they bring to each other.



## ADRIAN TEO WEI HONG

Bachelor of Engineering (Hons) in Electrical and Electronic Engineering

**GRADUATION YEAR: JULY 2015**

Lecturers in KDU Penang University College are always very helpful and supportive. They always encourage us to take part in competitions to brush up our skills and learn real-world lessons. As a result, I was crowned Malaysian Champion in the Go Green in the City 2015 competition, 2nd Runner-up in Innovate Malaysia 2015, 1st Runner-up in Moto Innocup 2013 and 2nd Runner-up in IHL-MSA Startup Challenge 2013/2014.

Though my studying days are over, I still love coming back to the engineering labs to conduct my own experiments and also to help my juniors in their projects. I am currently an Application Engineer with National Instruments. Without the support of lecturers and classmates in KDU Penang University College, I wouldn't be the successful person I am today.



## JIMMY CHAI YOW KANG

Bachelor's Degree in Electrical & Electronic Engineering

**GRADUATION YEAR: 2012**

KDU Penang University College (KDU Penang) helped me to step back and see the global picture of how to apply my skills in the real world. The courses at KDU Penang gave me professional knowledge and helped to think from the entrepreneurial point of view, which made me someone who can work from ideas to execution.

KDU Penang is a place where you get opportunities to explore all kinds of possibilities in you. Besides learning in the particular courses that I enrolled in KDU Penang, I also get the visibility on what the market trends are and what the market needs from us.

Now, I am the Business Strategy Director at J-SPY Technologies (Asia) Pte. Ltd. which creates mobile applications from leisure to major services in food and beverage industry. The skills and knowledge learned from KDU Penang helps me to transform ideas into viable products.

I am glad to have studied at KDU Penang because it's a conducive for learning and a good platform for students to learn what is happening in the industrial world prior to graduation.

# STUDENT LIFE IN KDU



# STUDENT LIFE IN KDU



# REAL WORLD FACILITIES



Electrical Power Lab



Electronics Lab



National Instruments LabVIEW Academy/VLSI Lab



Computer Aided Design Lab



Mechanical Engineering Lab



Lecture Theatre



Library



Hostel



Bar 91



Auditorium

- Auditorium
- Bar 91
  - casual dining snack bar
- Bon Appétit Restaurant
  - fine dining training restaurant
- Business Lounge
- Cafeteria
- Carême
  - pastry & bakery kitchen
- Computer Aided Design Lab
- Computer Labs and iMac Labs
- Creative Hub
- Culinary Arts Studio
  - carving and food arts studio
- Dry Studio
- Electrical Power Lab
- Electronics Lab
- Escoffier
  - garde-manger & butchery kitchen
- Fully-equipped Science Labs
- Gallery
- Games Lab and Games Lounge
- Gymnasium
- Hostel
- KDU Hospitality Training Suite
- KDU-IMI Lounge
- Lecture Theatres
- Library
  - electronic book databases
  - electronic journal databases
  - specialised electronic databases
- Mechanical Lab
- Machines Workshop
- Main Kitchen
  - for fully-equipped hotel standard commercial kitchens state of the art equipment
  - food production kitchen, island kitchen, preparation kitchen, main pastry kitchen
- Media Analytics Centre
- Media Command Centre
- Mixology Lab
  - beverage studies lab
- National Instruments LabVIEW Academy/VLSI Lab
- Pastry Kitchen
  - fully-equipped hotel specification kitchen
  - state-of-the-art equipment
- Recording Studio
- Science Lab
- Simulation Ward
- Simulated Health Clinic
- Smart Classroom: i-Connect
- Smart Classroom: i-Xplore
- Solace Room
- Spin Doctor Lab
- Surau
- Wet Studio
- Wi-Fi Enabled Campus



Anson Campus



Batu Kawan Campus

# ONE KDU PENANG TWO CAMPUSES



All information provided in this brochure is up-to-date and accurate at the time of publication.  
KDU Penang University College reserves the right to make amendment(s) to its brochure with or without prior notice.  
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