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# REDEFINING ENGINEERING

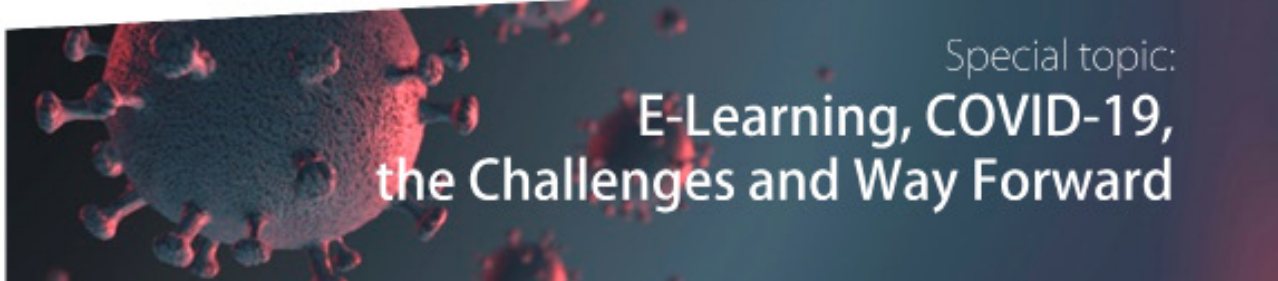


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Special topic:  
**E-Learning, COVID-19,  
the Challenges and Way Forward**



# welcome

## COLLEGE OF ENGINEERING

### BULLETIN TEAM

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# Redefining & Restructuring Engineering

Universiti Malaysia Pahang has refined its institutional priorities and restructured into a new set up of different colleges and faculties. Under the new structure, the pure Engineering fields are located at Gambang campus and regrouped under the College of Engineering, consisting of Civil Engineering, Chemical Engineering, Electrical Engineering, Industrial Engineering and Mechanical Engineering departments. Each programme is accredited by the Board of Engineers, Malaysia for undergraduate students and provides the graduates with a strong foundation that prepares them for successful profession in the future. Candidates also have an option to accomplish research work by continuing their studies to Masters and PhD levels.

The curriculum and structure of all Engineering Programmes are designed to focus on theories and concepts which require higher level mathematics and theoretical science related in giving solutions to the industrial problems. Under the new Engineering Programmes, the college makes clear demarcation of its programme against Engineering Technology Programmes which are also offered in the university but focusing more on applications and implementations.

A series of departmental and college meetings in redesigning the engineering curriculum had

taken place soon after the restructuring decision such that the College of Engineering students would maximise their potential contributions to the wider society and make a difference to the world by creative solutions that work. Critical emphasis had been given in designing the curriculum in a way that the engineering courses reflect aspects related to intensive engineering knowledge, critical thinking and unstructured problem solving. The elements of interdisciplinary and systems thinking, imagination, creativity and initiative communication were also taken into consideration in redefining the Engineering Programmes. According to the Malaysian Education BluePrint 2015-2025, students must be prepared not only to meet today's demand but also for the future through collaboration in global mind-set, mobility, student engagement and lifelong learning.

The courses are also blended with demonstration and research based approaches so that the students' critical thinking and practical aspects of problem solving would improve. This high level science and research dominated engineering curricula would not only achieve technological depth in the engineering disciplines, but also enrich and broaden the students' background as well.



College of Engineering first briefing by the Dean

# Redefining & Restructuring Engineering

**Prof Ir Dr Wan Azhar Wan Yusoff**,  
Vice Chancellor of the Universiti  
Malaysia Pahang



In one of his series of speeches addressing UMP staff related to the restructuring, Prof Ir Dr Wan Azhar, Vice-Chancellor of Universiti Malaysia Pahang had said, "UMP aspires to be a leading provider of engineering and technology-based programmes and research outputs. UMP is relatively a new university and it has been categorised as a focus university, among 19 other public universities in Malaysia. Our specialisations are in the fields of engineering, technology and industrial sciences of which the courses are in great demand by students in a fast developing country like Malaysia. We restructured and designed pure engineering programmes where the direction of the programmes are towards research and development activities. In the College of Engineering (KKEJ), the courses are designed based on the concept of natural engineering (Pure Engineering) which emphasises on basic or traditional knowledge. The implementations through the curriculum structure can be more creative (blended programme) by including elements of IR4.0. With regards to KKEJ staff, they should equip or upgrade themselves with competencies to become experts in each respective discipline. With regards to research for KKEJ, it should be more based on fundamental or theoretical rather than experimental. More importantly, the teaching and learning approach that has been adopted by UMP is one that is highly student-centred and problem-based which can support the industrial community. Here, we are constantly working for human capital development with innovative and creative leaders who push forward for solutions combining their pioneering research with special capacity

for teaching that has always been treasured at UMP. Moreover, we seek science and engineering students who are willing to make a decisive impact on society and we will prepare them to manage the explosion of knowledge taking place in every important domain of research".



**Assoc Prof Ir Dr Haji Nik  
Mohd Zuki Nik Mohamed**,  
Dean of College of  
Engineering Universiti  
Malaysia Pahang

In a separate meeting with staff of College of Engineering, Assoc Prof Dr Haji Nik in his remark said, "In the process of establishing and re-organising the college, assigning academic staff and facility mobilisation have been the first tasks. Currently we have 116 academic staff, 9 technical staff and 12 administrative staff. The labs and research centres have been re-established, allocated and the necessary facilities set up to run the teaching and learning activities.

The curriculum has been revised and updated in order to cater with the current industry/community demand and expectations. By sharing common resources and enabling collaboration, we are developing holistic education and research where every academic staff, student and member of the college together strive for new knowledge and innovations which will lead us to excellence. More importantly, the College of Engineering is committed to establish an academic integrity through cooperation where each member of the college works with trust, fairness, respect and responsibility. We have five major departments namely, Chemical Engineering, Civil Engineering, Electrical Engineering, Industrial Engineering and Mechanical Engineering."

# Redefining & Restructuring Engineering

## Departments in the College of Engineering

### Department of Chemical Engineering



Prof Dr Jolius Gimbut,  
Head of Department  
Chemical Engineering  
Department

The Department of Chemical Engineering aims to train a new generation of engineers through a rigorous curriculum that integrates engineering principles with the fundamentals of life and chemical sciences. This programme requires students to complete 130 credits, usually within four years. This programme has been developed not only to provide students with the knowledge of Chemical Engineering, but also to give them exposure to aspects of humanities and social sciences through courses such as English language and foreign languages, entrepreneurship and other non-engineering subjects.

### Department of Civil Engineering



Assoc Prof Dr Ngien Su  
Kong  
Head of Department, Civil  
Engineering Department

The Civil Engineering curriculum equips its students with the professional knowledge and skills needed to excel in a challenging career as a civil engineer. State-of-the-art facilities, both hardware and software, are incorporated to provide a professionally-oriented education and a highly advanced environment for research, development and collaborations with the industry and foreign universities. We have well-equipped laboratories with highly developed facilities to support teaching and intensive research.

### Department of Electrical Engineering

Assoc Prof Ir Dr Muhamad  
Zahim Sujod  
Head of Department, Electrical  
Engineering Department



The Department of Electrical Engineering provides Bachelor of Engineering degree in Electrical Engineering specialising in respective Power Systems and Electronics Engineering. The department provides the highest quality competency based engineering education to meet and exceed the needs of stakeholders. It continually improves in providing industrial based facilities in line with the university focus areas. It also develops students' potential through participative and team involvement by providing a conducive environment that encourages creativity and innovativeness towards becoming a learning organisation.

### Department of Industrial Engineering

Assoc Prof Dr Mohd Fadzil  
Faisae Ab Rashid  
Head of Department, Industrial  
Engineering Department



The Department of Industrial Engineering will start its first intake in September 2021 with a degree programme in Bachelor of Engineering. Industrial engineering focuses on the design of systems that train future engineers to improve productivity, efficiency, effectiveness, and quality. During the first year of study, students begin the Industrial Engineering programme with a background in engineering fundamentals. In the latter portion of the programme, they are introduced to the fundamental approaches of

workplace design and operations research, while at the same time enhancing their mathematical and computer skills. Later, more advanced simulation modelling approaches are examined together with courses more directly related to the management sciences.

## Department of Mechanical Engineering

Ir Dr Asnul Hadi Ahmad,  
Head of Department  
Mechanical Engineering  
Department



The Department of Mechanical Engineering is dedicated to produce mechanical engineers with high-level professionalism in the global context. It is committed to the advancement of teaching, research and development in innovative engineering and technology to promote national growth. Mechanical Engineers are typically involved with generation, distribution, and use of energy; the processing of materials; the control and automation of manufacturing systems; the design and development of machines; and solutions to environmental problems. Graduates achieve advanced standing professionally based on their technical expertise and accomplishment related to engineering practice and research, or in other fields they choose to pursue.



Ir Dr Jamiluddin Bin Jaafar  
Head of Technical  
College of Engineering

In the process of setting up the College of Engineering, the role in the mobilisation of resources and facilities was a challenging task. In this regard, the technical department of the College of Engineering led by Ir Dr Jamiluddin Jaafar has managed the refurbishment of the College of Engineering Building, preparing office for each staff and setting up the laboratories according to requirements.



Mr. Abd Razak Ja'afar  
Senior Executive  
College of Engineering

The college Administrative Office led by Mr Abd Razak Ja'afar has also effectively managed preparing academic and administrative meetings, relocation of staffs and sub tasks in research management, purchasing and office administration which help in facilitating and smoothening the overall college activities.



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