

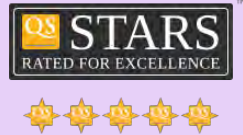


USM UNIVERSITI
SAINS
MALAYSIA



Materials Engineering

School of Materials and Mineral Resources Engineering (SMMRE)
Universiti Sains Malaysia



Introduction of SMMRE

School of Materials and Mineral Resources Engineering started its programme since 1984 in USM, Penang under the School of Industrial Technology and Engineering Sciences. With the advancement of technology and market demand for skilled engineers in the country, USM took the initiative to fulfill the requirement by having its own engineering school separated from other disciplines of applied sciences. In March 1986, the engineering disciplines under the School of Industrial Technology were separated to form their own schools, which include the formation of the School of Materials and Mineral Resources Engineering. USM had then housed the new campus at Ipoh before moving to Seri Iskandar, Perak. However, a lapsed of 15 years, in May 2001, the campus was moved to the new site situated at Seberang Perai Selatan, Penang. Compared to other schools or faculty in other Institutes of Higher Learning in Malaysia, the School of Materials and Mineral Resources Engineering is unique because it offers three programmes, these are Materials Engineering, Mineral Resources Engineering and Polymer Engineering at bachelor degree (honours) level for each programme. Polymer Engineering programme is the latest addition to the school that commenced in April 2002.

UNDERGRADUATE PROGRAMME (Materials Engineering)

SMMRE has formally adopted the Outcome Based Education (OBE) system since the 2006/2007 academic session to fulfil the Engineering Accreditation Council (EAC) requirements for undergraduate engineering programme in Malaysia. The Materials Engineering programme emphasizes on materials such as metal, ceramic, composite, polymer, semiconductor and electronic materials. These involve synthesis of materials, quality control, failure analysis and characterization of the materials. A minimum of four years or 8 semesters are required to complete the Materials Engineering programme. Graduates who have completed the course of study successfully will be awarded **B. Eng. (Honours) (Materials Engineering)**, which is recognized locally and internationally.

Materials Engineering curriculum is structured as follows:

Year 1: Basic mathematics, science, mechanics, and computing tools, including introductions to engineering and engineering drawing, basic mathematics/statistics, basic science, courses in engineering science and English & Bahasa Malaysia.

Year 2: Introduction on Materials Engineering subjects (Ceramics, Metallurgy, Electronic Materials, Polymers) are introduced to the students beside Engineering Materials Characterization and Engineers in Society.

Year 3: In-depth coverage of engineering science and Materials engineering fundamentals in the current focus areas (Ceramics, Metallurgy, Electronic & Semiconductor Materials, Polymers, Composite & Advanced Materials, Corrosion, etc), and key supporting courses (laboratory and site visits). Subject of Quality Control & Management is also covered. Students will also going for 10 weeks Industrial Training during the long vacation.

Year 4: More coverage on the Materials Engineering subjects beside final year research project and some electives.

SMMRE (USM) takes the responsibility to produce graduates with the knowledge and competency in Materials Engineering, and at the same time, fostering the entrepreneurship of the students. Core Entrepreneurship (WUS 101) is a compulsory course for USM students. This course aims to provide basic exposure to students in the field of entrepreneurship and helps students develop skills to plan and manage a business. The mode of teaching is through interactive lectures, practical, business plan proposals, execution of entrepreneurial projects and report presentations. This will equip the students with necessary entrepreneurial skills and competences to compete in both local and international marketplace.



Excellence in academic

(Anugerah Kecemerlangan Kejuruteraan UEM won by our Materials Engineering student, Chuah Wei Hoong, in year 2015).



Development of Entrepreneurship

(Students participation in the Ekspo Keusahawanan WUS 101)

POSTGRADUATE PROGRAMME

The School of Materials and Mineral Resources Engineering, Universiti Sains Malaysia offers programmes for higher studies leading to the Master of Science (MSc) Mixed Mode or Research Mode program as well as Doctor of Philosophy (PhD) degrees by research. Research and Development in Materials Engineering concentrate on the design, production and use of engineering materials as well as selection of appropriate materials for related used involving ceramics, metals, polymers, semiconductors, composites and nanomaterials.

CAREER OPPORTUNITIES

Over the years, the Materials Engineering programme have produced a diverse range of graduates, serving the industry, amongst others, as metallurgists, ceramists, engineers, technologists and specialists in corrosion, failure analysis, quality control, semiconductor fabrication, and various other research and development (R&D) scopes.

Why choose our Materials Engineering programme?

- The only “APEX” University status in Malaysia**
- Our programmes fit industries needs and requirements**
- Near to industries area (Bayan Lepas, Seberang Prai, Kulim and Ipoh)**
- Lecturers with Professional Engineer (Ir.) status**
- Lecturers with industrial experience**

For further information, please kindly contact

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