PROGRAMME INFORMATION

PROGRAMME NAME

Programmes (Malay/English)

- Ijazah Sarjana Muda Teknologi Kejuruteraan Mekanikal (Reka Bentuk Produk) Dengan Kepujian
- Bachelor of Mechanical Engineering Technology (Product Design) with Honours

PROGRAMME DESCRIPTION

Bachelor of Mechanical Technology Engineering Program (Product Design) - UR6521004 is a Hybrid program between the Basics of Industrial Design and Mechanical Basics. Students will be taught basic Mechanical and Manufacturing subjects. Then students will be trained on how to generate creative and innovative new ideas and concepts or improvements with basic training in sketch design, visual, 2D, 3D, animation, rendering, product management, and the production of prototypes, patents and commercialization. All these foundations are through manual and digital means taking into account aesthetic values, human-product relationships and anthropometrics.

This program is a harmonization between the field of Industrial Design and the field of engineering where in industry, these two fields do not sit together due to disagreement. Therefore, this UR6521004 Program will have a big impact in the field. Graduates will become experts and skilled in the fields of engineering and art design, prototype manufacturing as well as product production management from ideas, prototypes, testing and up to ownership and commercialization.

Regarding learning structure, mechanical basics, design, art, prototype making will be taught in years 1 and 2. Then in years 3 and 4, learning is geared towards developing a product from idea to advanced prototype as well as development management measures that involved. The final year project in semesters 6 and 7 is a winding project of all the subjects that have been studied. Finally, in semester 8, the last semester, students will be placed in the industry for 6 months to get exposure and prepare for a more challenging work environment.

The relevant fields of employment are very wide, i.e. where there are sectors involving products and designs that are indeed very appropriate. For example, the fields of study and development, ergonomics, quality and testing, product management, product manufacturing, design entertainment as well as illustrated montages.

PROGRAMME OBJECTIVES (PO)

CODE	PROGRAMME EDUCATIONAL OBJECTIVES
PEO 01	Engineering technology graduates engaged in the field of mechanical engineering technology as demonstrated through career advancement.
PEO 02	Engineering technology graduates who are members and contribute to professional society.
PEO 03	Engineering technology graduates embracing in life-long learning or pursuing continuing education opportunities.
PEO 04	Engineering technology graduates who are technopreneurs.

PROGRAMME LEARNING OUTCOME (PO)

CODE	PROGRAMME OUTCOMES
PO 01	Apply knowledge of mathematics, science, engineering fundamentals and an engineering specialisation to define and applied engineering procedures, processes, systems or methodologies.
PO 02	Identify, formulate, research literature and analyse broadly-defined engineering problems reaching substantiated conclusions using analytical tools appropriate to their discipline or area of specialisation
PO 03	Design solutions for broadly-defined engineering technology problems and contribute to the design of systems, components or processes to meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.
PO 04	Conduct investigations of broadly-defined problems; locate, search and select relevant data from codes, data bases and literature, design and conduct experiments to provide valid conclusions.
PO 05	Select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to broadly-defined engineering problems, with an understanding of the limitations.
PO 06	Function effectively as an individual, and as a member or leader in diverse technical teams.
PO 07	Communicate effectively on broadly-defined engineering activities with the engineering community and with society at large, by being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO 08	Demonstrate understanding of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to engineering technology practice and solutions to broadly-defined engineering problems.

PO 09	Understand and commit to professional ethics and responsibilities and norms of engineering technology practice.
PO 10	Demonstrate knowledge and understanding of engineering management principles and apply these to one's own work, as a member and leader in a team and to manage projects in multidisciplinary environments.
PO 11	Understand the impact of engineering technology solutions of broadly-defined engineering problems in societal and environmental context and demonstrate knowledge of and need for sustainable development.
PO 12	Recognize the need for, and have the ability to engage in independent and life-long learning in specialist technologies.

PROGRAMME DETAIL

- Four (4) years (Semester I & II)
- Eight (8) semesters including 1 semester for Industrial Training
- Each semester (14 weeks of Teaching n Learning)
- Final Examination (At the end of semester)
- Six (6) months of Industrial Training at the end of study
- MQF level: 6
- Graduating credit: 141

ADMISSION FEES

- Semester 1 - RM 2,200
- Consecutive semesters - RM 1,410

PROGRAMME STRUCTURE

YEAR	FIRST		SECOND		THIRD		FOURTH	
SEM	I	II	III	IV	V	VI	VII	VIII
Discipline Core	PDT 104/3 Applied Statics & Dynamics	PDT 122/3 Material Science	PDT 204/3 Applied Strength of Materials	PDT 240/3 Applied Ergonomics & Safety	PDT 341/3 Industrial Dialogue	PDT 313/4 Final Year Project I	PDT 413/6 Final Year Project II	PIT4041 INDUSTRIAL TRAINING
	PDT 126/3 Design Fundamental	PDT 128/2 Design Visualization	PDT 229/3 Design Integration	PDT 230/3 Design Studio I	PDT 330/3 Design Studio II	PDT 348/3 Finite Element Analysis	Elective II/3	
	PDT 127/2 Design Appreciation	PDT 111/3 Manufacturing Process	PDT 251/3 Thermofluids	PDT 202/3 Heat Transfer	PDT 310/3 Quality System	Elective I/3	PDT 443/3 Design for Manufacturing & Assembly	
	PDT 106/3 Engineering Graphics	PDT 131/3 Computer Aided Industrial Design I (CAID I)	PDT 231/3 Computer Aided Industrial Design II (CAID II)	PDT 232/3 Product Data Management (PDM)	PDT 344/3 Innovation Management & Product Development			
	PDT 133/2 Workshop Technology	PDT 134/3 Design Practice	PDT 234/3 Rapid Prototyping I (RP I)	PDT 235/3 Rapid Prototyping II (RP II)	PDT 236/2 Computer Programming			
		PDT 120/3 Basic Electrical & Electronic						
Common Core	PQT 111/3 Mathematics for Engineering Technology I	PQT 112/3 Mathematics for Engineering Technology II	PQT 213/3 Mathematics for Engineering Technology III				PTT 444/3 Engineering Technologist in Society	
University Required	UUW 322/2 Thinking Skills	*UVA 101/0 Preparatory English	UVW201/2 English for General Communication	UUW 224/2 Engineering Entrepreneurship	UUW XXX/2 Option Subject (Foreign Language)	UUW 130/2 Philosophy and Current Issues	PTT 333/3 Engineering Technology Management	
				UUT 122/2 Skills & Technology in Communication	UVW 312/2 English for Technical Communication	UUW131/2 Appreciation of Ethics and Civilization		
	UZW XXX/1 Co-Curricular Activity	UZW XXX/1 Co-Curricular Activity		UVW 410/2 University Malay Language				
M: 2-3	19	21	20	21	16	14	18	12
M: 4-6	19	21	18	21	18	14	18	12
Total Units for Graduation = 141								
Elective 1			Elective 2					
A1. PDT 346/3 Production Management for Designers			B1. PDT 347/3 Product Study & Professional Practice					
A2. PDT 345/3 Consumer Behavior			B2. PDT 442/3 Commercialization Culture					

NOTES:

MUET Band 2 : UVA101/0 Preparatory English > UVW 201/2 English for General Communication > UVW312/2 English for Technical Communication, *Option Subject is NOT COMPULSORY

MUET Band 3 : UVW 201/2 English for General Communication > UVW312/2 English for Technical Communication, *Option Subject is NOT COMPULSORY

MUET Band 4 and above : UVW312/2 English for Technical Communication, *Option Subject is COMPULSORY

CREDIT TRANSFER/EXEMPTION

Credit Exemption is defined as an exemption from registration and study of a course prescribed for a programme, based on the course taken by the student before being accepted into the university programme, as approved by the Dean of a School/ Dean of Academic Management. Credit Exemption is given to students who have obtained at least a C in certain courses, according to the grading system of the University and subject to the terms and conditions set by the university. Credit Exemption is given to students who have taken a course that is the same as, or contain at least 80% similarities to a course for which exemption is applied. Two or more courses can also be combined for the purpose of credit exemption for one course offered at UniMAP. Credit exemption for certain courses depend on the list of courses approved by the respective School and has been approved by the Senate.

GENERAL ADMISSION REQUIREMENT

GENERAL REQUIREMENTS:

MATRICULATION

- Pass in Sijil Pelajaran Malaysia (SPM) / equivalent with credit in Bahasa Melayu / Bahasa Malaysia or Bahasa Melayu / Bahasa Malaysia July Paper;
- and Pass in KPM Matriculation / UM Asasi Sains / UiTM Asasi with a minimum CGPA of 2.00;
- and Obtain at least Level 1 (Band 1) in the Malaysian University English Test (MUET);
- and Meet the specific requirements of the programme.

STPM

- Pass in Sijil Pelajaran Malaysia (SPM) / equivalent with credit in Bahasa Melayu / Bahasa Malaysia or Bahasa Melayu / Bahasa Malaysia July Paper and pass Sejarah/History (SPM 2013 and above);
- and Pass in Sijil Tinggi Pelajaran Malaysia (STPM) with a minimum CGPA of 2.00 and at least obtain: Grade C for General Studies;
- and Grade C in 2 (two) other subjects;
- and Obtain at least Level 1 (Band 1) in the Malaysian University English Test (MUET);
- and Meet the specific requirements of the programme

SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)

- Pass in Sijil Pelajaran Malaysia (SPM) / equivalent with credit in Bahasa Melayu / Bahasa Malaysia or Bahasa Melayu / Bahasa Malaysia July Paper;
- and Obtain at least a Jayyid Grade in Sijil Tinggi Agama Malaysia (STAM);
- and Obtain at least Level 1 (Band 1) in the Malaysian University English Test (MUET);
- and Meet the specific requirements of the programme

DIPLOMA

- Pass in Sijil Pelajaran Malaysia (SPM) / equivalent with credit in Bahasa Melayu / Bahasa Malaysia or Bahasa Melayu / Bahasa Malaysia July Paper and pass Sejarah/History (SPM 2013 and above);
- and Possess a diploma or other qualifications recoqnised by the Malaysian Government and approved by the university Senate;
- or Passed Sijil Tinggi Persekolahan Malaysia (STPM) 2016 or before with at least CGPA 2.00 with Gred C in three (3) subjects including Pengajian Am;
- or Passed Matriculation / Asasi 2016 or before with at least CGPA of 2.00;
- or Passed GCE A-Level with at least 9 points/International Baccalaureate Diploma with at least 24 points and other equivalent qualification recognized by Malaysia Government or approved by the University Senate
- and Obtain at least Level 1 (Band 1) in the Malaysian University English Test (MUET);
- and Meet the specific requirements of the programme.

SPECIFIC ADMISSION REQUIREMENT (FOR ENG., ENG. TECH., TECH. AND DIPLOMA, IF ANY):

MATRICULATION

- Fulfilling General University Requirements and Programme Specific Requirements Obtained at least Gred C (2.00) at Matriculation Programme / Asasi for the subjects below: i) Mathematics, and ii) One (1) of the following subjects: Physics, Engineering Physics, Chemistry Engineering Chemistry Candidates using Chemistry / Engineering Chemistry qualification at Matriculation / Foundation must obtain at least Grade E in Physics subject at SPM level.
- and Possess at least Tahap 2 (Band 2) in Malaysian University English Test (MUET)
- and Candidates who is not colour blind and disable to perform practical work with difficulty.

STPM

- Fulfilling General University Requirements and Programme Specific Requirements
- Obtained at least Gred C (NGMP 2.00) at STPM for the subjects below:
- Physics / Chemistry / Biology;
- And Mathematics T / Further Mathematics T

- Candidates who choose to use Chemistry / Biology from STPM for qualification must obtained at least a credit in Physics at SPM level
- and Possess at least Tahap 2 (Band 2) in Malaysian University English Test (MUET)
- and Candidates who is not colour blind and disable to perform practical work with difficulty.

DIPLOMA

- Fulfilling General University Requirements and Programme Specific Requirements
- Possessed Diploma from public university/Polytechnic or other equivalent qualification recognized by Malaysian Government or approved by the University Senate with at least CGPA 2.50 in the following areas: 521 - Mechanics and Metal Work 525 - Motor Vehicle, Ships and Aircraft 527 - Material Engineering 540 - Manufacturing and Processing (Broad Programs).
- Note: Credit exemption is subjected to the consideration and approval of the university.
- or Graduate from STPM/Matriculation/Asasi (2016 or before) Admission requirement is following the STPM/Matriculation/Asasi in the current year.
- or Possessed at least Grade C (3 Marks) at A-level in the following subjects: i) Mathematics ii) Physics iii) One of the following subject: Chemistry/Further Mathemathics/Biology
- and Possessed at least Grade 4 at International Baccalaureate (IB) in the following subjects: i) Mathematics ii) Physics iii) One of the following subject: Chemistry/Further Mathemathics/Biology
- and Possess at least Tahap 2 (Band 2) in Malaysian University English Test (MUET)
- and Candidates who is not colour blind and disable to perform practical work with difficulty.

DOCUMENTS FOR ADMISSION

Documents to be prepared:

- Copy of application via online
- Copy of MyKad OR Copy of Birth of Certificate / Surat Akuan Sumpah (if MyKad is lost)
- School Certificate/Surat Akuan
- Employer's Declaration (if any)
- Copy of Diploma Certificate
- Copy of STPM Certificate
- Copy of SPM Certificate
- Copy of all Academic's Transcript
- Copy of MUET Certificate
- Copy of Letter of endorsement graduated
- Copy of Bahasa Melayu / Matematik July (if any)
- Copy of MQA OR Malaysian Qualifications Register (MQR) proof

CAREER PROSPECT

Among the companies or government bodies that have the potential to provide bright job opportunities for graduates to have careers are:

- Automotive Sector/ Design and Engineering (Proton, Perodua, Modenas, Nissan, Honda, Toyota)
- Shipping, railway, aircraft. (Boustead, Monorail, MAS, Air Asia)
- Furniture and home decor. (MTIB, Safari, D Lloyd, Homestad Furniture, IKea, CASA)
- Interior / stage decoration (Nippon Paint, Astro, Media Prima Group, RTM, Karangkraf)
- Home / office hardware gadgets (Philips, Sony, Pensonic, Panasonic, Dyson)
- 2D / 3D art design & Ergonomic Products (Niosh, Mimos, Sirim, Naza World)
- Agricultural Products (MOSTI, FOMCA, FRIM, JKR)
- Manufacturing Design (Subsidiary company of R&D)
- Military & Security Equipment (RMAF, RMN, PDRM, Fire, ATM, Maritime)

Therefore, UR6521004 students have very broad and unlimited career prospects in one sector only. Apart from that, the expertise that is formed is a talent that is not easily acquired by others in a short time which makes UR6521004 graduates are unique and versatile graduates.

Our records proved that our alumni are now engaging with numerous fields of engineering such as designs and innovations, research and development (R&D), mechanical design, production scheduling, and many more.

PROSPECT JOB TITLE

The degree programme in mechanical engineering technology prepares graduates for various possible in research and development, design, manufacturing, and other technical industries which include:

- R&D Engineer / Technologist
- Product Development Engineer/ Technologist
- Product Designer
- Product Engineer / Technologist
- Design Engineer/ Technologist
- Production or Process Engineer / technologist
- Service Engineers / technologist
- Quality Engineer / technologist
- Modeller / Draftsman