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## PROGRAMME INFORMATION

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### PROGRAMME NAME

Programmes (Malay/English)

- Ijazah Sarjana Muda Teknologi Kejuruteraan Mekanikal (Pemprosesan Bahan) Dengan Kepujian
- Bachelor of Mechanical Engineering Technology (Materials Processing) with Honours

### PROGRAMME DESCRIPTION

The objective of this programme is to produce graduates who are skilled, competitive and have a strong knowledge based in the field of materials processing engineering technology. Graduates will have the capability to demonstrate as a knowledge and talented engineering technologist in problem solving skills, in addition to materials processing, characterisation and testing in materials processing technology field. The courses are delivered based on practical approach that covers four main fields which is metal processing, polymer processing, electronic packaging and ceramic processing as well as principles in economics and management. The programme has been designed to cultivate materials engineering technologist who are committed to the important of life-long learning and continuous improvement. Hence, upholding the importance of professionalism and ethics of material processing profession to form a cultured and more developed society.

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### PROGRAMME OBJECTIVES (PO)

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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
<b>PO 01</b>	Apply knowledge of mathematics, science, engineering fundamentals and an engineering specialisation to defined and applied engineering procedures, processes, systems or methodologies.
<b>PO 02</b>	Identify, formulate, research literature and analyse broadly-defined engineering problems reaching substantiated conclusions using analytical tools appropriate to their discipline or area of specialisation
<b>PO 03</b>	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.
<b>PO 04</b>	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.
<b>PO 05</b>	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.
<b>PO 06</b>	Function effectively as an individual, and as a member or leader in diverse technical teams.
<b>PO 07</b>	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.
<b>PO 08</b>	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.
<b>PO 09</b>	Understand and commit to professional ethics and responsibilities and norms of engineering technology practice.
<b>PO 10</b>	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.
<b>PO 11</b>	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.
<b>PO 12</b>	Recognize the need for, and have the ability to engage in independent and life-long learning in specialist technologies.

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### **PROGRAMME DETAIL**

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- 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
- National Education Code (NEC): NEC 521 Mechanics and Metal Works
- MQF level: 6
- Graduating credit: 141

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### **ADMISSION FEES**

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- 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
<b>Discipline Core</b>	PDT 151/2 Introduction to Materials Processing Technology	PDT 155/3 Quality Control	PDT 251/3 Thermo-fluids	PDT 255/3 Process Control	PDT 282/3 Applied Fluids Mechanics	PDT 451/3 Materials Selection & Design	PDT 413/6 Final Year Project II	<b>P I T 4 0 4 I N D U S T R I A L T R A I N I N G</b>
	PDT 104/3 Applied Statics & Dynamics	PDT 152/3 Materials Chemistry	PDT 204/3 Applied Strength of Materials	PDT 256/3 Materials Characterization	PDT 362/4 Metal Fabrication Technology	PDT 463/3 Material for Energy & Environmental Sustainability	Elective II/4	
	PDT 180/3 Engineering Science	PDT 153/3 Materials Structure & Properties	PDT 253/2 Materials Processing Lab	PDT 261/3 Whiteware Ceramic Processing	PDT 352/2 Design of Die & Moulds	PDT 313/4 Final Year Project I		
	PDT 106/3 Engineering Graphics	PDT 154/3 Materials Testing	PDT 264/3 Electronic Materials	PDT 262/3 Metal Extraction Technology	PDT 364/3 Composite Materials Processing	Elective I/4		
	PDT 133/2 Workshop Technology	PDT 120/3 Basic Electrical & Electronic	PDT 236/2 Computer Programming	PDT 263/4 Plastic Processing	PDT 351/3 Materials Failure Analysis			
<b>Comm on Core</b>	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	
<b>Univer sity Requir ed</b>	UUW 130/2 Philosophy and Current Issues	*UVA 101/0 Preparatory English	**UVW201/2 English for General Communication	UUW 224/2 Engineering Entrepreneurship			PTT 333/3 Engineering Technology Management	
			UUW XXX/2 Option Subject (Foreign Language)	UUW 131/2 Ethical Appreciation and Civilization	UVW 410/2 University Malay Language	UUT 122/2 Skills & Technology in Communication		
	UZW XXX/1 Co-Curricular Activity	UZW XXX/1 Co-Curricular Activity			UUW 322/2 Thinking Skill	UVW 312/2 English for Technical Communication		
M: 2-3	19	19	18	20	19	18	16	12
M: 4-6	19	19	18	20	19	18	16	12
<b>Total Units for Graduation = 141</b>								
<b>Elective 1</b> A1. PDT353/4 Polymer Adhesive and Coatings A2. PDT354/4 Glass Technology A3. PDT355/4 Advanced Metallurgy			<b>Elective 2</b> B1. PDT473/4 Rubber and Latex Technology B2. PDT474/4 Technical Ceramic Technology B3. PDT475/4 Geopolymer Materials Technology			<b>Elective 3</b> C1. C2.		

**Notes:**

MUET Band 2: UVA111/0 Preparatory English > UVW211 English for General Purpose> UVW312 English for Technical Communication, \*Option Subject is NOT COMPULSORY  
 MUET Band 3: UVW211 English for General Purpose > UVW312 English for Technical Communication, \*Option Subject is NOT COMPULSORY  
 MUET Band 4 and above: UVW312 English for Technical Communication, \*Option Subject is COMPULSORY

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## **CREDIT TRANSFER/EXEMPTION**

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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.

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## **GENERAL ADMISSION REQUIREMENT**

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### **PROGRAMME UR6543001 ENTRY REQUIREMENTS:**

#### **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 recognised 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 Mathematics/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 Mathematics/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.

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## **DOCUMENTS FOR ADMISSION**

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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

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## **CAREER PROSPECT**

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Graduates can seek employment in wide career prospects, either in government, private sectors, semi government and industrial agencies. The graduate can be employed in a variety of industries and roles nationally and internationally.

Graduates of Materials Processing can work with the raw materials in a wide variety of products. They develop, produce, and test these materials, which are used in the creation of such items as concrete for building, glass, and aircraft wings. The goal of material processing technologists is to make new materials which fulfill certain chemical, electrical, and mechanical criteria. To do this, they may use substances like plastics, ceramics, metals, semiconductors, or composites. They also find new ways to use existing materials.

However, being based on a mechanical engineering technology degree, graduates will retain flexibility in the choice of engineering industry for their careers. In most cases graduates will also be able to work wherever mechanical engineering technologists are employed.



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## **PROSPECT JOB TITLE**

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

- Production or process engineer / technologist
- Product engineer / technologist
- Service engineers / technologist
- Quality engineer / technologist
- R & D engineer / technologist
- Agra-based production engineer / technologist
- Agro-based SM / R & D
- Agra-based sales / technical services
- Maintenance and service industries
- Electronic packaging / metal / polymer / materials processing industries
- Automotive industries