

UR6540001

BACHELOR OF MANUFACTURING ENGINEERING WITH HONOURS

Programme Educational Objective (PEO)

PEO 1 Graduates who have demonstrated career advancement in the field of Manufacturing Engineering or related engineering field.

PEO 2 Graduates who are involved in a professional body or society.

PEO 3 Graduates who pursue lifelong learning.

Programme Outcomes (PO)

PO 01 Apply knowledge of mathematics, natural science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.

PO 02 Identify, formulate, conduct research literature and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.

PO 03 Design solutions for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations, safety, cultural, societal, and environmental considerations.

PO 04 Conduct investigations of complex problems using research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions.

PO 05 Create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to complex engineering problems, with an understanding of the limitations.

- PO 06** Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice and solutions to complex engineering problems.
- PO 07** Understand and evaluate the sustainability and impact of professional engineering work in the solution of complex engineering problems in societal and environmental contexts including ability to have entrepreneurship skills.
- PO 08** Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.
- PO 09** Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings.
- PO 10** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- PO 11** Demonstrate knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- PO 12** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

CURRICULUM STRUCTURE

UR6540001 BACHELOR OF MANUFACTURING ENGINEERING WITH HONOURS, SESSION 2022/2023

YEAR	FIRST		SECOND		THIRD			FOURTH	
SEMESTER	I	II	III	IV	V	VI		VII	VIII
Engineering CORE (97 + 5)	MMJ16103 Materials	MMJ10303 Solid Mechanics 1	MMJ10203 Engineering Dynamics	MMJ20103 Fluid Mechanics I	MMJ36102 Heat Transfer	MMJ36203 Computer-Aided Engineering	MMJ39905 Industrial Training	MMJ40202 Final Year Project I	MMJ40304 Final Year Project II
	MMJ10103 Engineering Statics	MMJ15203 Electronics	MMJ10403 Thermodynamics I	MMJ25203 Control Systems	MMJ36303 Mechanics of Machines And Vibration	MMJ37203 Industrial Ergonomics		MMJ47003 Manufacturing Integrated Design Project	MMJ4XX02 Elective III*
	MMJ15103 Electrical Technology	MMJ15402 Computer Programming	MMJ25102 Instrumentation	MMJ26203 Machine Components Design	MMJ37103 Production Planning and Control	MMJ37403 Lean Manufacturing		MMJ4XXX02 Elective I*	
	MMJ17102 Manufacturing Process I	MMJ17203 Manufacturing Process II	MMJ27102 Computer-Aided Manufacturing	MMJ27203 Quality Engineering	MMJ37303 Advanced Manufacturing Technology	MMJ37603 Industrial Automation		MMJ 4XXX02 Elective II*	

	MMJ17302 Engineering Workshop	MMJ16202 Engineering Design	MMJ26103 Design for Manufacture	MMJ27403 Industrial Engineering	MMJ37503 Pneumatic and Hydraulic System				
	MMJ17502 Engineering Drawing								
Non Engineering CORE (17)	SMQ10103 Engineering Mathematics I	SMQ10203 Engineering Mathematics II	SMQ20303 Engineering Mathematics III	SMQ27103 Engineering Statistics		MMJ30103 Management for Engineers			MMJ40102 Professional Engineer
University Required (16)	SMZXX01 Co-Curriculum	SMZXX01 Co-Curriculum	SMB10102 Preparatory English* ₁		SMB20102 English for General Communication* ₁	SMB31202 English for Technical Communication* ₁		SMU13002 Philosophy and Current Issues	SMU22402 Engineering Entrepreneurship
			SMB41002 University Malay Language* ₂		OR Option* ₃			SMU13102 Appreciation of Ethics and Civilization	SMU12202 Communication Skills and Technology
135	19	17	18	18	16	17	5	13	12
Total Units for Graduation: 135									

***1 English courses depending on MUET results.**

	SMB10102 Preparatory English	SMB20102 English for General Communication	SMB31202 English for Technical Communication
Band 1 & 2	Compulsory (no credit)	Compulsory (will be counted as Option* ₃)	Compulsory
Band 3	-	Compulsory (will be counted as Option* ₃)	Compulsory
Band 4, 5 & 6	-	-	Compulsory

***2 Malay Language:** **International student** should register **SMB11002 Basic Malay Language**, as a replacement for SMB41002 University Malay Language

***3 Option:** Compulsory to be registered by students with MUET Band 4 and above. (Refer Academic Guide Book on Option courses)

***4 Elective:** Subject to changes