UR6524003 Bachelor of Agricultural Engineering with Honours

Programme Educational Objective (PEO)

- **PEO 1** Graduates who have demonstrated career advancement in the field of Agricultural Engineering or related engineering fields.
- **PEO 2** Graduates who are involved in a professional body or society
- **PEO 3** Graduates who pursue lifelong learning

Programme Outcomes (PO)

- **PO1** Engineering Knowledge: Apply knowledge of mathematics, natural science, engineering fundamentals and an engineering specialization as specified in WK1 to WK4 respectively to the solution of complex engineering problems.
- PO2 Problem Analysis: Identify, formulate, research literature and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences. (WK1 to WK4)
- **PO3 Design/ development of solutions**: 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. (WK5)
- **PO4 Investigation**: Conduct investigations of complex problems using research-based knowledge (WK8) and research methods including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions.

- **PO5** Modern Tool Usage: 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. (WK6)
- **PO6** The Engineer and Society: 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. (WK7)
- **PO7** Environment and Sustainability: Understand and evaluate the sustainability and impact of professional engineering work in the solution of complex engineering problems in societal and environmental contexts. (WK7)
- **PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice. (WK7)
- **PO9** Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings.
- **PO10 Communications**: 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.
- **PO11 Project Management and Finance**: 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.
- **PO12** Life-Long Learning: 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 UR6524003 BACHELOR OF AGRICULTURAL ENGINEERING WITH HONOURS SESSION 2022/2023

YEAR	FIRST	SECOND	THIRD		FOURTH
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SEM	I	II	I	II	I	II		I	II
	KMJ16003 Fundamental of Agricultural Engineering	KMJ16503 Dynamics	KMJ26004 Fluid Mechanics Engineering	KMJ26303 Heat and Mass Transfer	KMJ36003 Soil Engineering	KMJ36402 Farm Machinery		KMJ49802 Final Year Project 1	KMJ49904 Final Year Project 2
	KMJ16102 Computer Aided Engineering Design	KMJ16603 Strength of Materials	KMJ26103 Thermodynamics	KMJ26403 Hydrology and Water Resources Engineering	KMJ36103 Farm Structural Design	KMJ36503 Unit Operation		KMJ46003 Agricultural Engineering Design 1	KMJ46103 Agricultural Engineering Design 2
	KMJ16203 Statics		KMJ26203 Electrical and Electronic Technology	KMJ26503 Engineering Properties of Biological Materials	KMJ36203 Instrumentation, Measurement and Control	KMJ36603 Design of Automation Systems		KMJ46203 Machine Design	KMJ46803 Bioproduct Manufacturing
	KMJ16303 Geomatics Engineering		KMJ10003 Engineering Skills	KMJ16803 Introduction to Computer Programming	KMJ36303 Energy and Power	KMJ36702 Modelling and Simulation		KMJ46303 Postharvest Engineering	KMJ4XX03 Elective 2
								KMJ4XX03 Elective 1	
	SMQ10103 Engineering Mathematics I	SMQ10203 Engineering Mathematics II	SMQ20303 Engineering Mathematics III	SMQ27103 Engineering Statistics	KMJ42403 Engineering Management	KMJ45802 Professional Engineers			
	KMJ16403 Plant and Animal Sciences	KMJ16703 Crop and Livestock Production Systems							
	SMZXXX01 Co-Curricular Activity	SMZXXX01 Co-Curricular Activity	SMU13002 Philosophy and Current Issues	SMB31202 English for Technical Communication	SMU22402 Engineering Entrepreneurship	SMU13102 Appreciation of Ethics and Civilization			
	* SMB10102 Preparatory English	SMU12202 Communication Skills and Technology		*** SMBXXX02 OR SMUXXX02 Optional Courses					
		SMB41002 University Malay Language							
		** SMB20102 English for General Communication							
135	18	19	18	17	17	14	5	14	13

Elective Courses	Natural Resources Management	Smart Farming	Controlled Environment Agriculture	Waste to Wealth Management
Elective 1 (Semester 1)	KMJ46403 Biowaste Management	KMJ46503 Precision Agriculture	KMJ46603 Controlled Environment Engineering	KMJ46703 Waste to Wealth Technology
Elective 2 (Semester 2)	KMJ46903 Land Reclamation & Remediation	KMJ47003 Decision Support System for Smart Farming	KMJ47103 Advance Controlled Environment Production Systems	KMJ47203 Biomass Conversion Technology

Descriptions:

- 1. * Must register for students who obtained either Band 1 or Band 2 for Malaysian University English Test (MUET).
- 2. ** Must register for students with ONE of the following criteria 1) Obtained Band 3 in Malaysian University English Test (MUET) 2) Passed UVA101 Preparatory English with minimum grade C.
- 3. *** For student who obtained Band 4, 5 and 6 in Malaysian University English Test (MUET), they are exempted from taking UVW201 English for General Communication course and are required to take

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optional course to earn credit for graduation.