

Guideline for Topping-Up for Unrecognized Bachelor of Engineering Degree / Change of Branch

1. Registration with the Board of Engineers Malaysia (BEM), requires applicant to obtain **Bachelor of Engineering degree** accredited by:
 - a) Engineering Accreditation Council (EAC) (for local degree)
 - b) Washington Accord (WA) signatories (for overseas degree)

2. Section 10(1) of the REA 1967 (Revised 2015) requires a person who holds any qualification in engineering which is recognised by the Board to register as a Graduate Engineer (GE). It is a violation to the Act if one provides services as an engineer in Malaysia without registration as a GE with BEM.

UNRECOGNISED DEGREE

3. For unrecognized Bachelor of Engineering Degree, under the current policy, topping-up with a Master's degree (coursework/mixed mode) in the relevant branch from Universities where the Bachelor's degree is accredited/recognised by BEM is acceptable. The Master programme has to be completed. Please be informed that this policy ends this year (2021) for MQA Accredited 3-year Bachelor of Engineering Programme.

CHANGE OF BRANCH

4. For a registered Graduate Engineer who intends to change branch from sub-branch to major branch the same method as above may be used. However, for conversion from Electronic to Electrical, candidate may consider to enroll to a Conversion Program conducted by:
 - Universiti Tenaga Nasional
 - Swinburne University, Sarawak
 - Universiti Malaysia Sabah

5. The Core Courses for each branch is attached in **Appendix A**.

6. The Core Courses provided serves as a guideline to assist candidates in decision-making when enrolling to a Master's Programme or Conversion program. It is not a guarantee that the candidate may be registered upon completing the Programme.

7. BEM shall not advise candidates on a specific Master's programme or subjects he/she has to take. Candidates have to do their own due diligence in ensuring the programme is suitable by consulting academic panels from the Universities.

APPENDIX A

CORE COURSES

CIVIL ENGINEERING

BASIC	Credits	ADVANCED	Credits
Statics & Dynamics	3	Civil Engineering Capstone Project	6
Strength of Materials	3	Geotechnical Engineering	3
Structural Analysis	3	Environmental Studies	3
Fluid Mechanics & Hydraulics	3	Structural Design	3
Soil Mechanics	3	Construction Management	3
Engineering Materials	3	Highway & Transportation	3
Geospatial Technology	3	Water Resources	3
Non-technical electives (2)	6	Non-technical elective (1)	3
	30		30

Non-technical Electives (Alternatives Accepted):

Creating Innovative Engineering	3 credits
Economic Analysis for Engineers	3 credits
Engineering Entrepreneurship	3 credits
Engineering Project Management	3 credits
Engineers in Society	3 credits

MECHANICAL ENGINEERING

FUNDAMENTALS	Credits	ADVANCED	Credits
Solid Mechanics	3	Mechanical Engineering Capstone Project	6
Thermodynamics	3	Advanced Solid Mechanics	3
Fluid Dynamics	3	Advanced Fluid Mechanics	3
Materials	3	Advanced Thermodynamics	3
Control Systems	3	Advanced Materials	3
Dynamics	3	Vibrations	3
Electrical Power and Machines	3	Instrumentation & Control	3
Manufacturing Systems Design	3	Mechanical Engineering Design	3
Non-technical electives (2)	6	Non-technical elective (1)	3
	30		30

Non-technical Electives (Alternatives Accepted):

Creating Innovative Engineering	3 credits
Economic Analysis for Engineers	3 credits
Engineering Entrepreneurship	3 credits
Engineering Project Management	3 credits
Engineers in Society	3 credits

ELECTRICAL ENGINEERING

FUNDAMENTALS	Credits	ADVANCED	Credits
Electrical Circuits & Systems	3	Electrical Engineering	6
Electromagnetics Theory	3	Capstone Project	
Digital Electronics	3	Electrical Power Generation	3
Analogue Electronics	3	Electrical Energy Utilisation	3
Signal & Systems	3	Electrical Machines	3
Communication Systems	3	Power Electronics	3
Instrumentation and Control	3	Power System Analysis	3
Introduction to Power Engineering	3	Advanced Control System	3
Non-technical electives (2)	6	Green and Renewable Energy	3
		Non-technical elective (1)	3
	30		30

Non-technical Electives (Alternatives Accepted):

Creating Innovative Engineering	3 credits
Economic Analysis for Engineers	3 credits
Engineering Entrepreneurship	3 credits
Engineering Project Management	3 credits
Engineers in Society	3 credits

CHEMICAL ENGINEERING

FUNDAMENTALS	Credits	ADVANCED	Credits
Chemical Engineering Thermodynamics	3	Chemical Engineering Capstone Project	6
Material and Energy Balance	3	Process Safety, Health & Environment	3
Chemical Kinetics and Reactor Engineering	3	Process Optimization	3
Transport Phenomena	3	Process Design	3
Separation Processes	3	Plant Equipment Design and Economics	3
Process Control & Instrumentation	3	Advanced Heat and Mass Transfer Processes	3
Computational Methods for Chemical Engineering	3	Particle Mechanics and Processing	3
Polymers and Composites	3	Safety and Environmental Protection	3
Non-technical electives (2)	6	Non-technical elective (1)	3
	30		30

Non-technical Electives (Alternatives Accepted):

Creating Innovative Engineering	3 credits
Economic Analysis for Engineers	3 credits
Engineering Entrepreneurship	3 credits
Engineering Project Management	3 credits
Engineers in Society	3 credits