

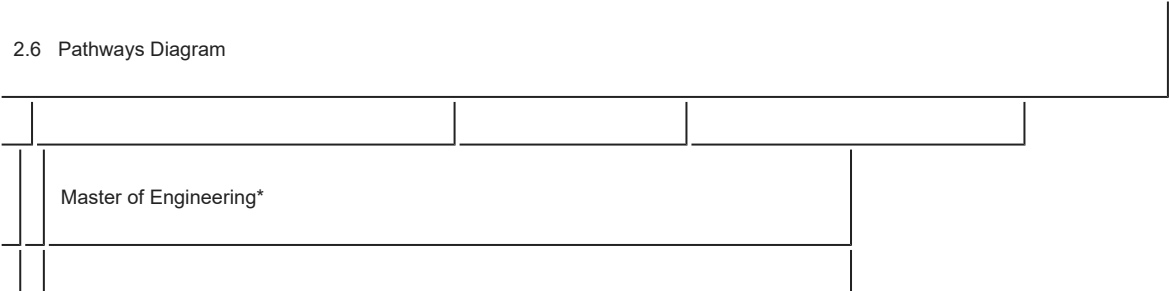
APPROVED

Bachelor of Engineering Technology (Electromechanical)  
Faculty of EDICT (Engineering, Design and ICT)

Programme Title (Arabic)		(ةيكنين الكيموراكلال قس دنل ص ص خت) قس دنل ةين ق ت يف سوي رول الكبلال											
Acronym / Abbreviation *		BEngTech (Electromechanical)											
Nature		Major											
Programme Code		ENT8050	Programme Duration		4 Year/Cycle	Programme Level		Level 8					
Programme Credits		480	Award Category		Bachelors								
Effective From		2023/2024 Sem 1 as of ( August 2025 )											
Owner		School of Engineering											
Professional Body													
Professional Body		Recognition Status		Effective From		Interim Date		Professional Bodies		Contact Person		Evidence	
Employability Skills		Yes		04/01/2021									
Target Groups *													
High School Graduates													
International Students													
People in Employment													
Unemployed													
Qualification Completion Requirements Criteria		Awarded where candidates have met all of the requirements below:											
		• Successful completion of, or exemption from, all courses listed in Schedule A group of courses											
		• Successful completion of 30 credits from the Engineering Final Year project group of courses.											
		• Accumulation of at least 45 credits from courses from the EDICTE and NEDICTE Elective Groups.											
		• Accumulation of at least 15 credits from courses from the National Requirements and National Requirements Arabic group of courses.											
		• Achieve the Bahrain Polytechnic General Qualification Requirements as found in Policy A/AB/004, Naming and Awarding											
• Completion of courses to accumulate a total of 480 credits from any Bahrain Polytechnic Qualification;													

	<ul style="list-style-type: none"> <li>• Completion of 80 days of work experience.</li> </ul>
<b>Programme Overview *</b>	<p>The Bachelor of Engineering Technology Programme offered at Bahrain Polytechnic is composed of five Qualifications; the Mechanical Major, the Electronics Major, the Electrical Major, the electromechanical major and the Communications and networks major Each of these qualifications, also have their own exit qualification which is an Associate Degree in Engineering Technology at NQF level 7.</p> <p>The BEngTech Qualifications are designed and delivered in such a way, after extensive interaction with the Bahrain Engineering environment and society, in order to provide work-ready engineering technology graduates. The graduates will acquire advanced technical knowledge in their respective fields, specialized practical skills and valuable employability skills that will allow them to provide the drive for the transformation towards a knowledge-based economy in Bahrain.</p> <p>All BEngTech Qualifications are delivered over a 4-year period consisting of 8 semesters. Students are expected to take 60 credits on average per semester and thus at the completion of their studies they should have accumulated a total of 480 credits. In those 480 credits, there exist 45 credits of Elective courses, 15 credits of National Requirements courses, 30 credits of English courses and the remaining 390 credits are taken from Core and Specialized Engineering Courses. Additionally, the students are required to complete a total of 80 work placement days. All Qualifications share a common 1st Year with courses that lay the foundations of Engineering Technology and provide the students with the required knowledge to succeed in their chosen specialization.</p> <p>The uniqueness of the BEngTech qualifications at Bahrain Polytechnic is the strong commitment of the Institution to deliver these qualifications using student-centred learning and more specifically, the Problem-Based Learning (PBL) Methodology. Using this learning methodology, allows us to provide the required theoretical knowledge, practical skills and employability skills to our graduates and thus achieve our mission of producing enterprising and work-ready graduates for the Bahrain Society and Economy. The PBL methodology is implemented through the design of appropriate assignments that motivate the students to provide a solution to an Engineering design and/or analysis problem. Students are required to complete lab experiments, software practical assignments, design projects, controlled assignments such as theory tests and to provide rational justification for their work through the preparation of technical reports, presentations and posters. The theoretical knowledge given to the students is provided through a balanced combination of lectures, tutorials, experimental work, project work and one-to-one supervision with Faculty members.</p>
<b>Entry and Selection *</b>	<p>General entry requirements such as secondary school achievements, English and Mathematics are described in the Student Admission Policy A/AB/010. Specific entry requirements for this Programme, beyond those described in the Student Admission Policy are as follows:</p> <p>Academic</p> <p>Successful completion of</p> <ul style="list-style-type: none"> <li>• AP4203 English 2</li> <li>• AP4102 Mathematics 2 (Technical)</li> </ul> <p>or</p> <p>Passing English and Mathematics selection tests at the required level or equivalent.</p>

<b>Selection and Criteria and Process *</b>	<p>Where there are more applicants who meet the programme entry criteria than can be accepted, the following shall be used:</p> <p>Selection Criteria</p> <ul style="list-style-type: none"> <li>• Successful completion of the Foundation Program at Bahrain Polytechnic and demonstration of a commitment to study.</li> <li>• Results from programme entry tests.</li> <li>• Work experience and prior educational achievement.</li> </ul> <p>Selection Process</p> <ul style="list-style-type: none"> <li>• Applicants may be required to attend an interview.</li> </ul>
<b>Major Selection Criteria *</b>	<p>Where the number of applicants exceeds the available places the following criteria for selection apply:</p> <p>First priority to students who have completed all courses in the common first year of the degree.</p> <p>Second priority will be those with highest combined GPAs from EN6000 Electrical Fundamentals and EN6903 Mechanical Fundamentals.</p>
<b>Accreditation / External Approval Requirements *</b>	<p>The mechanical, electronics and electrical engineering technology majors have been submitted for potential IET, UK accreditation, receiving “confidence” at the 1<sup>st</sup> initial related review. It is expected that the accreditation visit will take place within 2021. The new electromechanical and communications and networks engineering technology majors will be submitted for similar international accreditation during 2022 or after the first completion of all offered courses subject to the accreditation body's requirement and review.</p>
<b>Attendance Requirements *</b>	<p>Attendance requirements are described in the policy Student Attendance A/AB/006.</p>
<b>Qualification Overview *</b>	<p>The Electromechanical qualification is a technically strong qualification that aims to provide for the needs industry nationally, regionally and internationally. The qualification has a combination of electrical, mechanical and electronics engineering knowledge and skills upon which graduates can build to reflect the wide range of fields and industries that are present locally and regionally. There is emphasis on solid mechanics, thermodynamics, sustainability and control to suit the petrochemical, aluminum and manufacturing industries.</p> <p>Students gain advanced theoretical knowledge and specialist practical skills in the areas of Mechanics (static, structural and Dynamic), workshop practice, thermodynamics and fluid mechanics, engineering design, circuits design, digital devices, electrical machines and drives, instrumentation, control systems, power electronics and systems, design and installation of electromechanical systems, engineering project management and environmental energy systems. Students are introduced to software packages Matlab and LabView and 3Dimensional modelling software, SolidWorks, is integrated and used extensively throughout the programme. Students are given an option to explore specializations in their final year from a selection including Applied Control Engineering, Applied thermodynamics and heat transfer, CAD/CAM, low voltage electrical systems, advanced power electronics, failure mode and effect analysis and process Engineering Principles.</p>

<b>Qualification Aim *</b>	<p>The aim of this qualification is to provide students with a comprehensive set of skills for employment as engineering technologists (an engineering technologist is defined by the Sydney Accord as being competent at analysing, solving, managing and taking responsibility for broadly-defined engineering problems and activities).</p> <p>The qualification will provide students with:</p> <ul style="list-style-type: none"> <li>theoretical and practical skills to solve engineering problems and design engineering systems in the broad area of electrical and mechanical engineering, Mechanics, Thermodynamics, Fluid Mechanics, Control engineering systems, Power Systems, Electrical Machines and drives and Electromechanical Design of installation systems for the industry and Building Services Sector.</li> <li>Skills necessary for effective communication, analysis, team work, documentation and evaluation of systems through the inclusion of courses in English language, mathematics, project management, ethics and social responsibility.</li> </ul>
<b>Graduate Pathways and Destination *</b>	<p>This qualification equips graduates to start their engineering career as an engineering technologist. Future roles include design engineer, production engineer, maintenance team leader, sales engineer, project engineer or quality assurance engineer, and ultimately into management positions in technology-focused organisations.</p> <p>This programme prepares students for the following further learning, careers and/or employment opportunities:</p> <ul style="list-style-type: none"> <li>Reliability and Maintenance engineering</li> <li>Industrial process engineer</li> <li>Building services Engineer</li> <li>Programmable logic controllers and industrial automation</li> <li>Electrical Machines operation and maintenance</li> <li>Robotics operation</li> <li>Medical devices operation</li> <li>Construction</li> <li>Mechanical and electrical manufacturing</li> <li>Project Management Engineer</li> <li>Computer-aided design (CAD)</li> </ul> <p>Graduates from the Bachelor of Engineering Technology programme who wish to continue their studies may apply to any university for admission into their programme. For an engineering technology degree, it is common practice for a university to first enrol the student into a post-graduate diploma programme and based on progress made, transfer them to a full Masters programme.</p> <p>2.6 Pathways Diagram</p> 

	▲			Associate Degree in Engineering Technology
	BEngTech			
	▲	▲	▲ Exit	
	Certificate in Academic Preparation	Direct Entry	Associate Degree in Engineering*	
	*Not currently offered by Bahrain Polytechnic			

Other Information *	<p>Work experience requirements:</p> <ul style="list-style-type: none"> <li>Students are required to complete 80 days of work experience in approved engineering companies. This work experience will normally be carried out during the academic year in 4 periods of 4 weeks each.</li> <li>Work experience will normally be arranged by the Faculty, but students can also apply to obtain work placement on their own.</li> <li>Records of attendance will be maintained at the workplace and forwarded to the Faculty following each work experience period.</li> <li>Work placements must be approved by the Programme Manager and involve the student in activity that will contribute to the student's knowledge of the engineering technology industry.</li> <li>To have the work experience credited, each student must also complete a work-placement logbook describing the work performed and the practices observed during each period of work experience along with an evaluation of the employability skills obtained by the work supervisor.</li> </ul> <p>Exemption from work experience requirements:</p> <ul style="list-style-type: none"> <li>Students may be given partial or total exemption from the work experience requirements if they have completed appropriate alternative work experience.</li> <li>Applications for exemption must be made in writing to the Programme Manager.</li> <li>Supporting evidence and information (e.g. certificates awarded and workbooks or other evidence of work performed) must be submitted with the application.</li> </ul>

## Programme Learning Outcomes

On successful completion of this programme the learner will be able to :

Description
Apply knowledge of mathematics, science, engineering fundamentals and an engineering specialisation to deal with defined and applied engineering procedures, processes, systems or methodologies.
Identify, formulate, research literature and solve broadly-defined engineering problems reaching substantiated conclusions using analytical tools appropriate to their discipline or area of specialisation.
Demonstrate commitment to professional ethics, responsibilities and norms of engineering technology practice.
Recognize the impact of engineering solutions in a societal context and demonstrate knowledge of the need for sustainable development.
Critically analyze the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to engineering technology practice.
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 cons
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.
Select and apply appropriate techniques, resources, and modern engineering tools, including prediction and modeling tools, to broadly-defined engineering activities, with an understanding of their limitations.
Practice as a professional using 21st century skills
Demonstrate knowledge of management and business practices, such as risk and change management, and recognize their limitations.
Solve practical problems in specific engineering systems using electro-mechanical components and sound analytical, industrial, laboratory, and time-management skills.
Operate engineering instruments and machines and interpret their results and readings(B2, B3)
Analyze engineering systems performance based on constrains and diagnose faults
Work with computers and determine their place and importance in an engineering environment
Contribute to the design and development of systems or processes to deliver engineering projects or services factoring in sustainability, cost factors and engineering ethics principles.

## Semester Schedules

### Year 1 / Semester 1

Core	
Course Code	Title
EN6000	<a href="#">Electrical Fundamentals</a>
EN6990	<a href="#">Engineering Practice</a>
EL6001	<a href="#">English for EDICT 3</a>
EN6907	<a href="#">Mathematics for Engineers 1</a>

### Year 1 / Semester 2

Core	
Course Code	Title
EN6010	<a href="#">Engineering Computing Fundamentals</a>

EL6002	<a href="#">English for EDICT 4</a>
EN6914	<a href="#">Mathematics for Engineers 2</a>
EN6903	<a href="#">Mechanical Fundamentals</a>

## Year 2 / Semester 1

Core	
Course Code	Title
EN6080	<a href="#">Alternating Current ( AC ) Circuit theory</a>
EN6904	<a href="#">Engineering Graphics</a>
EN7917	<a href="#">Fluid Mechanics</a>
NR	<a href="#">National Requirements</a>
Optional	
Course Code	Title
NR-Arabic	<a href="#">National Requirements- Arabic</a>

## Year 2 / Semester 2

Core	
Course Code	Title
ED7000	<a href="#">Applied Project</a>
EN6020	<a href="#">Digital Devices and Systems</a>
EN7230	<a href="#">Instrumentation and Automatic Control</a>
EN7919	<a href="#">Thermodynamics</a>

## Year 3 / Semester 1

Core	
Course Code	Title
EN7032	<a href="#">Electrical Machines</a>
EN6902	<a href="#">Engineering Mechanics 2</a>
EN7008	<a href="#">Power Electronics</a>

## Year 3 / Semester 1 & 2

Elective	
Course Code	Title
EDICTE	<a href="#">EDICT Electives</a>

### Year 3 / Semester 2

Core	
Course Code	Title
EN8033	<a href="#">Electrical Drives</a>
EN7908	<a href="#">Manufacturing, Control and Environmental Sustainability</a>
EN8154	<a href="#">Structural mechanics and dynamics</a>

### Year 4 / Semester 1

Core	
Course Code	Title
EN8918	<a href="#">Applied and Process Heat Transfer</a>
EN8905	<a href="#">Energy, Environment and Sustainability</a>
EN8923	<a href="#">Engineering Project Management</a>
EN8061	<a href="#">Power Systems</a>
EN8913	<a href="#">Project Proposal</a>

### Year 4 / Semester 2

Core	
Course Code	Title
EN8912	<a href="#">Applied Thermodynamics</a>
ENGFP	<a href="#">Engineering Final Year Project</a>
Elective	
Course Code	Title
NEDICTE	<a href="#">Non-EDICT Electives</a>