

# Associate Degree in Engineering Technology (Mechanical) Faculty of EDICT (Engineering,Design and ICT)

Programme Title (Arabic)	مَسردناها، ئورنۇب يوف كىراشىمارا مولىبىدلار (ئوپكويزاك يېمار) مَسردناها)							
Acronym / Abbreviation *	ADEngTech (Mechanical)	ADEngTech (Mechanical)						
Nature	Embedded Qualification							
Programme Code	ENT7020	Programme Duration	3 Year/Cycle		Programme Level		Level 7	
Programme Credits	360	Award Category	Associate Degree		]			
Effective From	2021/2022 Sem 1 as of ( August 2	025)			-			
Owner	School of Engineering							
Professional Body	·							
Professional Body	Recognition Status	Effective From	Interim Date	Professio	nal Bodies	Contac	ct 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 below         • Achieve the Bahrain Polytechnic General Qualification Requirements as found in Policy A/AB/004, Naming and Awarding Qualifications.         • Completion of courses to accumulate a total of 360 credits from any Bahrain Polytechnic Qualification;         • Completion of 60 days of work experience.								
	The Associate Degree in Engineering Technology is an exit qualification of the Bachelor in Engineering Technology and it stands at NQF level 7. It is available for the Bachelor of Engineering technology students that have completed the 3rd year of their studies.							

Programme Overview *	The Bachelor of Engineering Technology Programme offered at Bahrain Polytechnic is composed of 3 Qualifications; the Mechanical Major, the Electronics Major and the Electrical Major. Each of these qualifications, also have their own exit qualification which is an Associate Degree in Engineering Technology at NQF level 7. The AssEngTech and 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. All Associate degrees are exit qualifications at the 3rd year of the BEngTech studies and consist of 360 credits over a period of 3 years, 6 semesters. 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. For the Associate Degree the students need to complete 360 credits consist of 15 credits of lective courses, 16 credits of national requirements courses, 60 credits of English courses and the meanining credits are taken from core and specialized engineering technology and provide the students with the required knowledge to succeed in their chosen specialization. The uniqueness of the Associate Degrees and 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 Bahrain society and economy. The PBL methodology is implemented through the design of appropriate assignments that motivate stud
Entry and Selection *	This is an exit qualification of the corresponded BEngTech program. If the students are accepted to the BEngTech program, they are eligible to receive the exit qualification (Associate Degree) subject to the successful completion of the first 3 years of the program and 60 days of industrial workplacement.
Selection and Criteria and Process *	N/A
Major Selection Criteria *	N/A
Accreditation / External Approval Requirements *	The Mechanical, Electronics and Electrical Engineering Technology majors have alredy been submitted for potential IET, UK accreditation, receiving "confidence" at the 1st initial related review. It is expected that the accreditation visit will take place within 2021.
Attendance Requirements *	Attendance requirements are described in the policy Student Attendance A/AB/010.

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Qualification Overview *	The Associate Degree in the Mechanical Engineering technology is a technically strong qualification that aims to provide for the needs industry nationally, regionally and internationally. The qualification has a wide base of Mechanical 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, aluminium and manufacturing industries. Students gain advanced theoretical knowledge and specialist practical skills in the areas of Mechanics (statics and Dynamics), workshop practice, thermodynamics and fluid mechanics, material science, basic manufacturing processes, heat transfer, Computer Aided Design and basic control engineering. Students are introduced to software packages Matlab and LabView and 3 Dimensional modelling software, SolidWorks, is integrated and used extensively throughout the programme.
Qualification Aim *	The aim of this programme is to provide students with a comprehensive set of skills for employment as engineering technicians. According to the Dublin Accord, the role of the Engineering Technicians involves them in the implementation of proven techniques and procedures to the solution of practical problems. They carry a measure of supervisory and technical responsibility and are competent to exercise creative aptitudes and skills within defined fields of technology, initially under the guidance of engineering practitioners with appropriate experience. Engineering Technicians contribute to the design, development, manufacture, commissioning, operation and maintenance of products, equipment, processes and services. They apply safe systems of work. A course of education which can be recognised as underpinning a planned career as an Engineering Technician is expected to: Provide a foundation for progression and develop a positive attitude towards lifelong learning, from which the Engineering Technician will be able to develop a detailed understanding of the principles and a mastery of the knowledge and analytical skills required for engineering practice. Motivate students towards the practice of engineering and stimulate their learning. Ensure that science and mathematics are taught within the context of real engineering applications, integrating theory with current industrial practice and design requirements. Develop awareness of the social, legal, economic and political contexts within which engineering systems in the development of 'key skills'. The qualification will provide students with: the teoretical and practical and professional development of students in the context of the applications of engineering systems in the broad area of mechanical engineering, Mechanics, Thermodynamics, Fluid Mechanics and Control, skills necessary for effective communication, analysis, team work, documentation and evaluation of systems through the inclusion of courses in English language, mathematics, project management, ethic
	This qualification equips graduates to start their engineering career as a technician engineer. This programme prepares students for the following further learning, careers and/or employment opportunities:



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		Certificate in Academ Preparation	Direct Entry	Associate Degree in Engineering*		
	*Not curr	rently offered by Bahra	in Polytechnic			
	Empolya	ability Skills Generic	Definition:			
	Commu	inication	Communicate in ways that c	contribute to productive and h	armonious relationships across employees and customers.	
	Team w	/ork	Work effectively independen	ntly and in collaboration with c	others.	
	Problen	n solving	Think critically and respond a	appropriately to changing nee	eds within a growing and diversifying economy.	
Other Information *	Initiativ	e and enterprise	Apply resourcefulness, innov	vation and strategic thinking t	o a range of workplace situations.	
	Plannin	ig and organisation	Plan and manage their working lives.			
	Self ma	nagement	Demonstrate self discipline and adaptability, and be able to plan and achieve personal and professional goals.			
	Learnin	ıg	Understand the need for and	d engage with continuous lea	rning throughout the lifespan.	
	Techno	logy	Utilize information technology	y effectively and ethically in the	neir personal and professional lives.	

#### **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 specialization 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. Contribute to the design of 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 Conduct investigations of broadly-defined problems; locate, search and select relevant data from codes, data bases and literature, identify and conduct experiments to provide valid conclusions. Select and use 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 Solve practical problems in specific mechanical engineering settings using sound analytical, industrial, laboratory, and time-management skills Operate engineering instruments and machines and interpret their results and readings Analyze mechanical engineering performance and diagnose faults Work with computers and demonstrate an understanding of their place in an engineering environment Contribute to the process of design, prototyping, and manufacturing of products

## **Semester Schedules**

#### Year 1 / Semester 1

Core	Core		
Course Code	Title		
EN6000	Electrical Fundamentals		
EN6990	Engineering Practice		
EN6907	Mathematics for Engineers 1		
EL5005	Reading and Writing English for EDICT		

#### Year 1 / Semester 2

Core	Core		
Course Code	Title		
EN6010	Engineering Computing Fundamentals		
EN6914	Mathematics for Engineers 2		

EN6903	Mechanical Fundamentals
EL5006	Speaking and Listening English for EDICT

# Year 2 / Semester 1

Core	
Course Code	Title
EN6904	Engineering Graphics
ENGOOD	
EN0902	Engineering Mechanics 2
EL6001	English for EDICT 3
EN7917	Fluid Mechanics

# Year 2 / Semester 2

Core		
Course Code	Title	
EL6002	English for EDICT 4	
EN7908	Manufacturing, Control and Environmental Sustainability	
EN6107	Material Science 1	
EN7919	Thermodynamics	

### Year 3 / Semester 1

Core			
Course Code	Title		
EN7923	Mechanical Project 1 (Design and Analysis of Mechanical Components)		
EN8923	Engineering Project Management		
EN7924	Mechanical Project 2 (Fabrication and Manufacturing)		
Elective			
Course Code	Title		
ELE1	Electives 1		
ELE2	Electives 2		

## Year 3 / Semester 2

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Core		
Course Code	Title	
NR	National Requirements	
	National Deswirements Archie	
NR-Arabic	National Requirements- Arabic	
EN8924	Quality and Reliability Engineering	