

APPROVED

Diploma in Engineering Technology (Chemical and Industrial Processes Engineering)
Faculty of EDICT (Engineering,Design and ICT)

Programme Title (Arabic)	(ةيعانصرلا تاياعلعالو ةيؤايميك قسندنه) قسندنلا ةينقت يف دولبدلا					
Acronym / Abbreviation *	DEngTechCh					
Nature	Specialisation					
Programme Code	ENT6070	Programme Duration	2 Year/Cycle	Programme Level	Level 6	
Programme Credits	240	Award Category	Diploma			
Effective From	2023/2024 Sem 1					
Owner	School of Engineering					
Professional Body						
Professional Body	Recognition Status	Effective From	Interim Date	Professional Bodies	Contact Person	Evidence
Employability Skills	Yes	23/01/2023		Employability Skills		
Target Groups *						
High School Graduates						
International Students						
Unemployed						
Other						
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. - Achievement of National Requirement courses - Completion of courses to accumulate a total of 240 credits - Completion of 60 days of work experience					

Programme Overview *	The Diploma in Engineering Technology Programme offered at Bahrain Polytechnic is composed of six qualifications: Mechanical, Electronics, Electrical, Electromechanical, communications and networks and, the petroleum and process plant operations all at NQF level 6. The Diploma 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 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 Diploma qualifications are delivered over a 2-year period consisting of 4 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 240 credits. In those 240 credits, 15 credits are National Requirements courses, 30 credits are English courses, and the remaining 195 credits are taken from core and specialized engineering courses. Additionally, the students are required to complete a total of 60 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. The uniqueness of the Diploma 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 the provision of the required theoretical knowledge, practical skills and employability skills to graduates and thus achieve the Polytechnic's 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.
	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:

Entry and Selection *	Academic Successful completion of • AP4203 English 2 • AP4102 Mathematics 2 (Technical) or Passing English and Mathematics selection tests at the required level or equivalent.
Selection and Criteria and Process *	Where there are more applicants who meet the programme entry criteria than can be accepted, the following shall be used: Selection Criteria • Successful completion of the Foundation Program at Bahrain Polytechnic and demonstration of a commitment to study • Results of programme entry tests • Work experience and prior educational achievement Selection Process Applicants may be required to attend an interview.
Major Selection Criteria *	N/A

Accreditation / External Approval Requirements *	The Diploma in Chemical and Process Engineering will be submitted for international accreditation, potentially , IET UK accreditation in 2023 or after the first completion of all offered courses subject to the accreditation body's requirement and review.
Attendance Requirements *	Attendance requirements are described in the policy Student Attendance A/AB/006.
Qualification Overview *	The Diploma in Chemical and Process Engineering qualification is a technically strong qualification that aims to provide for the needs industry nationally, regionally and internationally. The qualification has a wide base of Chemical 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 metals manufacturing, process technology systems, sustainability and control to suit the petrochemical, petroleum, aluminum and manufacturing industries. Students gain detailed theoretical knowledge and specialist practical skills in the areas of chemical fundamental, workshop practice, process technology systems, manufacturing process, heat transfer, materials and energy balance, Engineering Chemistry, chemical process technology, Instrumentation and automatic control.
Qualification Aim *	The aim of this qualification is to provide students with a fundamental 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). The qualification will provide students with: • Basic theoretical and practical skills to solve engineering problems in the broad area of chemical/process engineering, chemical fundamentals, chemistry, process technology systems, material & energy balance, chemical process technology, instrumentation automation & control for the chemical process industries and allied sector.

	• Skills necessary for effective communication, analysis, teamwork , documentation and evaluation of systems through the inclusion of courses in English language, mathematics, applied project, ethics and social responsibility.		
Graduate Pathways and Destination *	This qualification equips graduates to start their engineering career as an engineering technicians. Future roles include chemical engineering technician, process engineering technician, process chemist, process design engineering technician, process safety engineering technician, process control engineering technician, project engineering technician, sales engineering technician, process specialist, quality engineering technician and ultimately into management positions in technology-focused organisations. This qualification prepares students for the following careers and/or employment opportunities: • Plant operators/technicians in chemical process industries & allied sector such as petroleum, petrochemicals, metal, food & glass manufacturing, environment etc. • Laboratory technicians in chemical process industries • Technical sales representatives for chemical manufacturing companies • Quality intern at chemical process industries This qualification prepares students for the following pathways to further learning: • Associate Degree in Engineering Technology (Chemical) • Bachelor of Engineering Technology (Chemical) Graduates from the Diploma in Chemical and Process Engineering programme who wish to continue their studies may apply to any university for admission into their programme according to their admission criteria. For a diploma degree holder, it is common practice for a university to first enroll the student into an Acceleration, Pre-foundation and foundation programmes and based on progress made, transfer them to a full bachelor's degree programme.		
	Employability Skills Generic Definition: <table border="1" data-bbox="450 1453 1771 1497"> <tr> <td></td> <td></td> </tr> </table>		

Other Information *	Communication	Communicate in ways that contribute to productive and harmonious relationships across employees and customers.
	Team work	Work effectively independently and in collaboration with others.
	Problem solving	Think critically and respond appropriately to changing needs within a growing and diversifying economy.
	Initiative and enterprise	Apply resourcefulness, innovation and strategic thinking to a range of workplace situations.
	Planning and organisation	Plan and manage their working lives.
	Self-management	Demonstrate self-discipline and adaptability and be able to plan and achieve personal and professional goals.
	Learning	Understand the need for and engage with continuous learning throughout the lifespan.
	Technology	Utilize information technology effectively and ethically in their personal and professional lives.

Programme Learning Outcomes

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

Description
Use knowledge of mathematics, science, engineering fundamentals, and an engineering specialisation to deal with defined and applied engineering procedures, processes, systems or methodologies.
Review and select research literature to contribute to the solution of broadly-defined engineering problems reaching substantiated conclusions using analytical tools appropriate to chemical and process engineering.
Identify and commit to professional ethics, responsibilities and norms of engineering technology practice.
Demonstrate understanding of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to engineering technology practice.
Contribute to the design of solutions for 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 to broadly-defined engineering activities, with an understanding of their limitations.
Practice as a professional using 21st century skills
Demonstrate an awareness and understanding of non-managerial employees (technician, operator, etc.) working functions such as risk, accuracy, and information in handling, and understand their limitations.
Demonstrate detailed knowledge and understanding of fundamental concepts related to chemical engineering.
Apply techniques to conduct experiments for chemical engineering.
Communicate effectively to convey information related to chemical engineering.

Semester Schedules

Year 1 / Semester 1

Core	
Course Code	Title
EN6000	Electrical Fundamentals
EN6990	Engineering Practice
EL6001	English for EDICT 3
EN6907	Mathematics for Engineers 1

Year 1 / Semester 2

Core	
Course Code	Title
EN6010	Engineering Computing Fundamentals
EL6002	English for EDICT 4
EN6914	Mathematics for Engineers 2

EN6903	Mechanical Fundamentals
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Year 2 / Semester 1

Core	
Course Code	Title
EN6702	Chemical Fundamentals
EN6701	Engineering Chemistry
NR	National Requirements
EN6705	Process Technology Systems
Optional	
Course Code	Title
NR-Arabic	National Requirements- Arabic

Year 2 / Semester 2

Core	
Course Code	Title
ED7000	Applied Project
EN6703	Chemical Process Technology
EN7230	Instrumentation and Automatic Control
EN7704	Material and Energy Balances