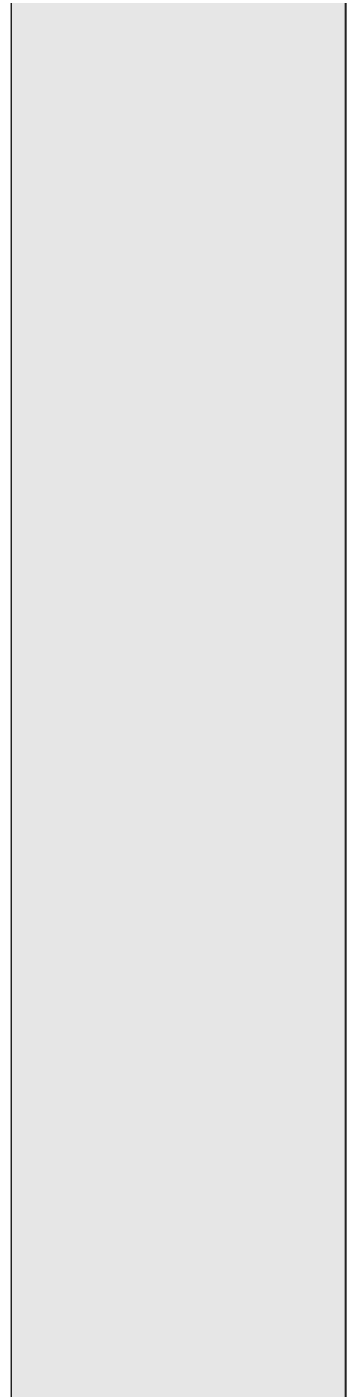


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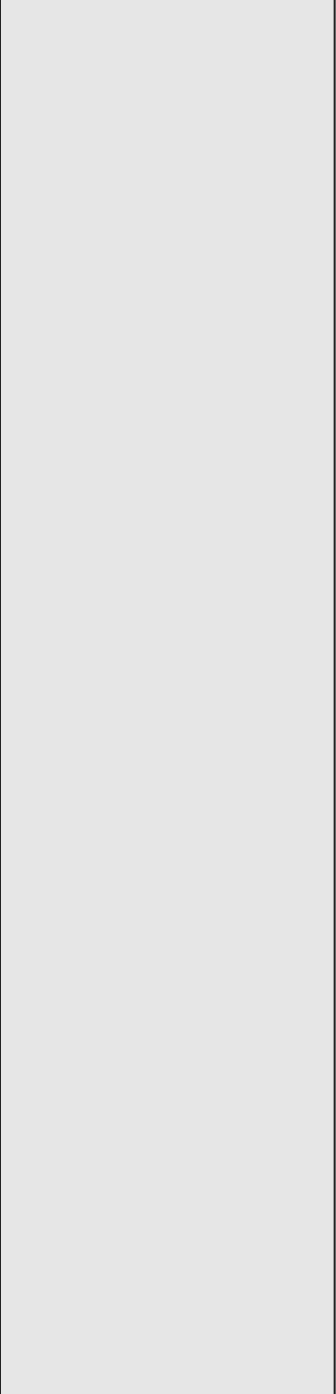
Master of Science in Engineering (Applied) in Sustainable Energy Systems
Faculty of EDICT (Engineering, Design and ICT)

Programme Title (Arabic)	مأدنتسملأ ققأطلأ قمعظنأ يف يق يقبطلأ قسدنلأ مولع ريتسجام					
Acronym / Abbreviation *	MScEng(Apl)SES					
Nature	Specialisation					
Programme Code	ENT9010	Programme Duration	1 Year/Cycle	Programme Level	Level 9	
Programme Credits	180	Award Category	Masters			
Effective From	2022/2023 Sem 2					
Owner	School of Engineering					
Professional Body						
Professional Body	Recognition Status	Effective From	Interim Date	Professional Bodies	Contact Person	Evidence
Employability Skills	Yes	12/06/2023		Employability Skills		
Target Groups *						
International Students						
People in Employment						
Unemployed						
Targeted Industry Groups						
Other						
	Awarded where candidates have met all of the requirements below: - Successful completion of, or exemption from, all courses listed in Schedule A - Achieve the Bahrain Polytechnic General Qualification Requirements as documented in the naming and Awarding Qualifications policy - Completion of courses to accumulate a minimum of 180 credits					



Qualification Completion Requirements Criteria

	Bahrain Polytechnic was established by the Bahrain Government to address the need for skilled Bahraini workforce to support economic growth and development. Bahrain Polytechnic aims to produce graduates in applied, professional qualifications. It is widely acknowledged that Engineering is a key sector and an enabler for growth of any modern society. The Master of Science in Engineering (Applied) in Sustainable Energy Systems is designed after extensive interaction with the Bahrain engineering environment and society, to develop specialists in sustainable energy systems in order to support the requisite skills demanded of the 21st century workplace in key areas of engineering technology. Given the rapidly changing nature of environment, the programme' s currency is to be maintained through the upskilling of academic staff, and the solicitation of requirements from key industry and government stakeholders. The uniqueness of qualifications at Bahrain Polytechnic is the strong commitment of the Institution to deliver the courses using Student-Centered learning and more specifically, the Problem-Based Learning (PBL) methodology. 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, practical assignments, design projects, controlled assignments



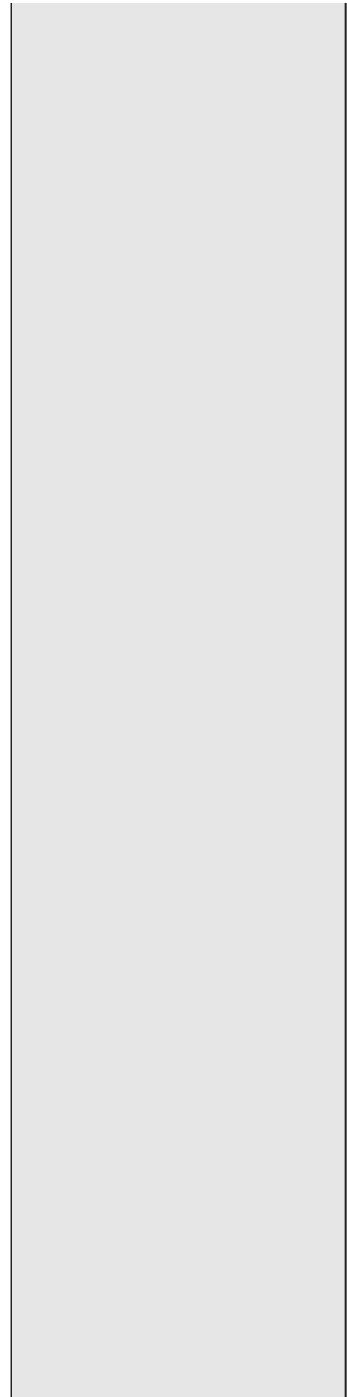
such as theory tests and to provide rational justification for their work through the preparation of technical reports, presentations, and posters. The theoretical knowledge given to the students is provided through a balanced combination of lectures, tutorials, experimental work, project work and one-to-one supervision with faculty members.

Programme Overview *

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Entry and Selection *	Following are the minimum requirements for admission into MSc in Engineering (Applied) Sustainable Energy Systems: • Recognized bachelor's degree or its equivalent in a related field. • Minimum GPA: 2.75 out of 4.00 (2.50 out of 4.00 could be accepted with relevant industry experience). • English entry requirements: - IELTS score of 6.5 or evidence of a bachelor's degree with English as the only language of instruction - Or, passing English selection tests / interviews in reading, writing, speaking and listening at the required level or equivalent • Applicants with a first degree from disciplines not related to engineering or sciences can be interviewed by a relevant Programme Committee.
Selection and Criteria and Process *	In case that there are more applicants than the available positions, the Bachelor's GPA and the years of professional experience will be considered. Additionally, applicants may be required to attend an interview. Selection Criteria • First selection of students who have a form of approved scholarship for the programme. • Prior educational achievement. • Related work experience Selection Process • The School will determine on a yearly basis the seats available for each of the entry and selection categories. • Additionally, applicants may be required to attend an interview.
	N/A as there is no major selection.

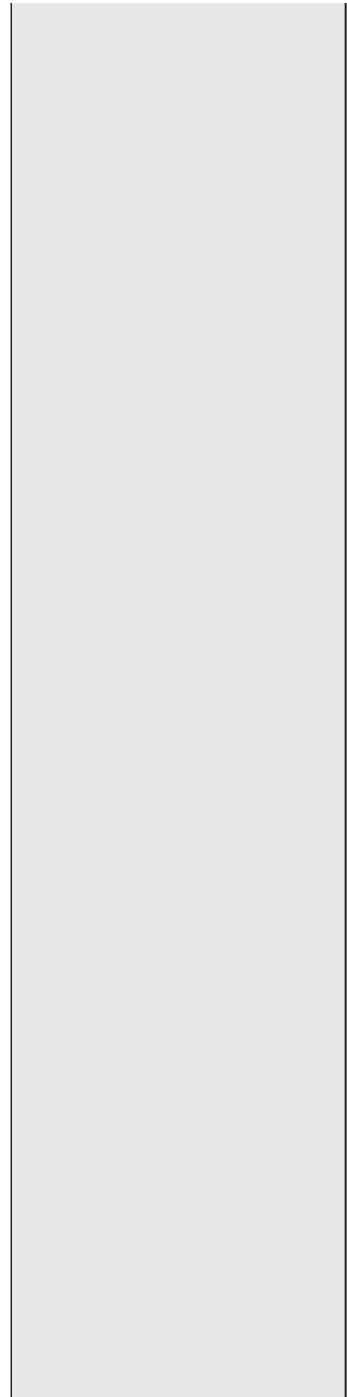
Major Selection Criteria *	
Accreditation / External Approval Requirements *	None at the moment, but will be brought for accreditation by IET – Institution for Engineering and Technology in their next visit to Bahrain Polytechnic and it will be also submitted for listing in BQA.
Attendance Requirements *	Institutional attendance requirements are described in the policy Student Attendance A/AB/006. There are no programme-specific attendance requirements.
	The Master of Science in Engineering (Applied) in Sustainable Energy Systems is a postgraduate qualification offered to participants to specialize and gain a deeper knowledge across a broad range of disciplines. The program helps the engineers to discover holistic and effective solutions to unsustainable practices existing in modern world. This degree features a range of targeted courses in sustainable and environmental sciences and sustainability management that includes solar and wind power engineering, carbon abatement technologies, solar energy system design and installations, combined with the energy and environment economics and policy making. The uniqueness of qualification is the strong commitment of the Institution to deliver the courses using Student-Centered learning and more specifically, the Problem-Based Learning (PBL) methodology. The 1-year master's degree program includes the Core theories that form the cornerstone of the programme, with hands-on, applied skills being developed through the Problem-Based Learning (PBL) philosophy. Project work forms another cornerstone of the programme, with an emphasis on projects in most of the courses followed by a final thesis in the last semester. The qualification includes four courses in first semester, four courses in second semester and a final thesis in third (last) semester. There exists a 'Post Graduate Certification' as exit qualification at successful completion of first semester of the program, and "Post Graduate Diploma" at successful completion of first and second semesters of the program. The successful completion of all courses and thesis leads to achievement of master's degree qualification.



Qualification Overview *

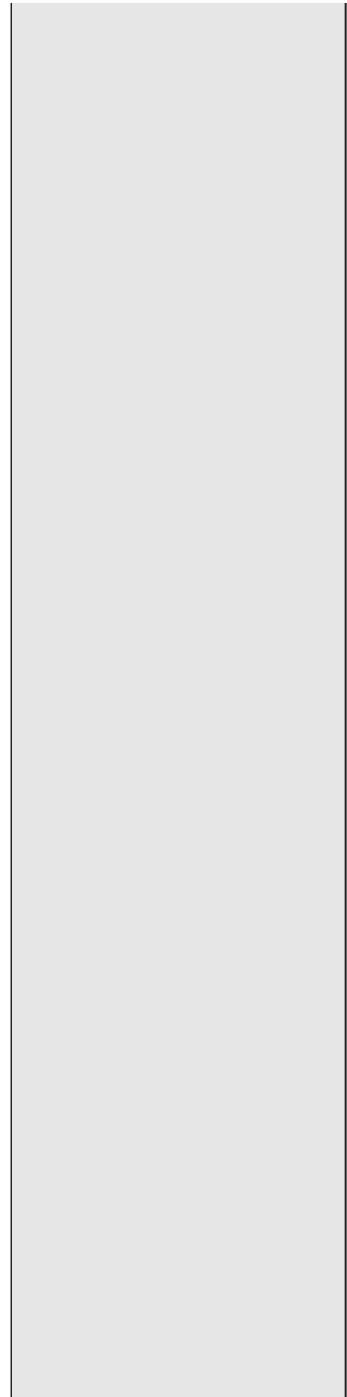
This qualification is designed to introduce fundamental sustainable energy and environmental science. It will be addressing current and future challenges in energy and sustainability, aligning with national goals, meeting market demands, and contributing to the development of a skilled and knowledgeable workforce that is capable of leading Bahrain towards a sustainable future. The learners will gain in-depth understanding, knowledge, and skills in sustainable energy systems to extend their abilities to apply their competence in practical projects on contextualized scenarios based on their individual career plans.

Qualification Aim *



	Pathways: Completion of 60 credits of first semester will lead to achievement of 'Post Graduate Certificate'. Completion of 120 credits (end of second semester) will lead to achievement of 'Post Graduate Diploma'. Completion of 180 credits (end of third semester) will lead to achievement of 'Master in Science in Engineering (Applied)' Destinations: Below are the roles that graduates of this programme may undertake after graduation: • Energy efficiency engineers • Industrial ecologists • Sustainability consultants • Green building engineers • Water project managers • Corporate social responsibility officers • Environmental economists • Policymakers and policymaker advisors • Carbon Abatement Technologists • Renewable energy engineers and experts • Solar Energy System Design and Installation experts

Graduate Pathways and Destination *



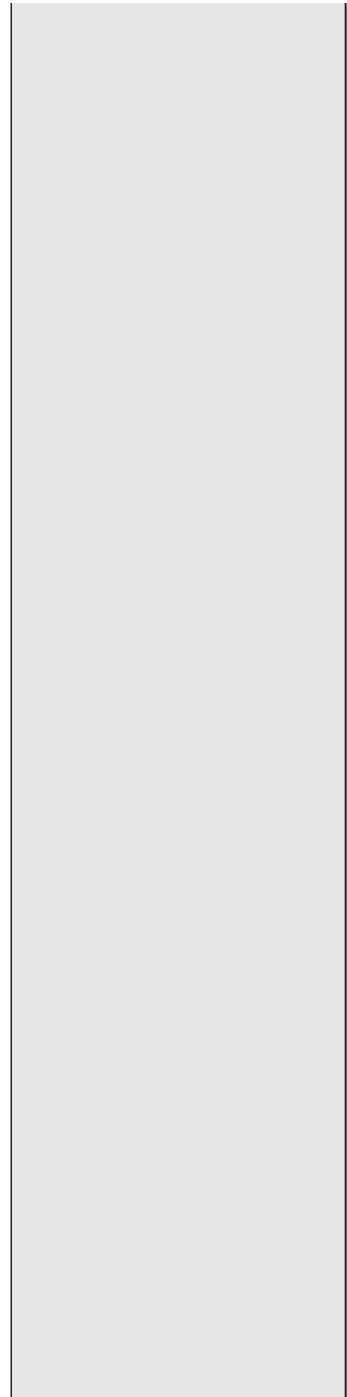


Employability Skills Generic Definition:

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.

Other Information *



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Programme Learning Outcomes

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

Description
Demonstrate an in-depth and systematic understanding of sustainable energy systems, including renewable energy technologies, energy storage solutions, and energy efficiency practices.
Exhibit the ability to develop innovative and effective engineering solutions to complex problems in sustainable energy systems, ensuring compliance with relevant standards and constraints.
Utilize advanced mathematical and computational tools to analyze sustainable energy systems, identify issues, and develop engineering solutions that optimize performance and sustainability.
Exhibit proficiency in project management, leadership, and decision-making skills for the development and implementation of sustainable energy projects, considering financial, environmental, social, and regulatory aspects.
Evaluate and manage risks in sustainable energy systems, ensuring the safety and well-being of all stakeholders and compliance with health, safety, and environmental regulations.
Adhere to professional codes of conduct, and demonstrate a commitment to ethical considerations, sustainable practices, and social responsibility in engineering practice.
Engage in life-long learning and professional development in the field of sustainable energy systems to maintain and enhance engineering competence.
Exhibit the ability to work effectively in interdisciplinary teams, integrating knowledge from various fields to address complex problems in sustainable energy systems.
Communicate complex engineering concepts, designs, and solutions effectively to diverse audiences, both technical and non-technical, through various modes of communication.
Conduct independent research in sustainable energy systems, and integrate knowledge from various sources to inform engineering practice and contribute to the advancement of the field.
Recognize the global and societal implications of engineering decisions in sustainable energy systems, and consider cultural, international, and environmental contexts in engineering practice.
Understand and comply with relevant legal and regulatory requirements, including intellectual property, contractual obligations, and standards, relevant to the engineering of sustainable energy systems.

Semester Schedules

Year 1 / Semester 1

Core	
Course Code	Title
EN9002	Energy and Environment Policymaking
EN9001	Engineering Research Methods
EN9004	Powerplant Engineering
EN9003	Solar power engineering

Year 1 / Semester 2

Core	
Course Code	Title
EN9005	Circular Economics and Sustainable Development
EN9006	Renewable Energy and Carbon Abatement Technologies
EN9007	Solar Energy System Design and Installation
EN9008	Wind Power Engineering

Year 1 / Semester 3

Core	
Course Code	Title
EN9009	Masters Dissertation