Ministry of Higher Education and Scientific Research

Scientific Supervision and Scientific Evaluation Apparatus

Directorate of Quality Assurance and Academic Accreditation

Accreditation Department

Academic Program and Course Description Guide

2026

Introduction:

The educational program is a well-planned set of courses that include procedures and experiences arranged in the form of an academic syllabus. Its main goal is to improve and build graduates' skills so they are ready for the job market. The program is reviewed and evaluated every year through internal or external audit procedures and programs like the External Examiner Program.

The academic program description is a short summary of the main features of the program and its courses. It shows what skills students are working to develop based on the program's goals. This description is very important because it is the main part of getting the program accredited, and it is written by the teaching staff together under the supervision of scientific committees in the scientific departments.

This guide, in its second version, includes a description of the academic program after updating the subjects and paragraphs of the previous guide in light of the updates and developments of the educational system in Iraq, which included the description of the academic program in its traditional form (annual, quarterly), as well as the adoption of the academic program description circulated according to the letter of the Department of Studies T 3/2906 on 3/5/2023 regarding the programs that adopt the Bologna Process as the basis for their work.

In this regard, we can only emphasize the importance of writing an academic programs and course description to ensure the proper functioning of the educational process.

Concepts and terminology:

Academic Program Description: The academic program description provides a brief summary of its vision, mission and objectives, including an accurate

description of the targeted learning outcomes according to specific learning strategies.

Course Description: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the students to achieve, proving whether they have made the most of the available learning opportunities. It is derived from the program description.

Program Vision: An ambitious picture for the future of the academic program to be sophisticated, inspiring, stimulating, realistic and applicable.

Program Mission: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

Program Objectives: They are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

Curriculum Structure: All courses / subjects included in the academic program according to the approved learning system (quarterly, annual, Bologna Process) whether it is a requirement (ministry, university, college and scientific department) with the number of credit hours.

Learning Outcomes: A compatible set of knowledge, skills and values acquired by students after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.

Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

Academic Program Description Form

University Name: .....Mosul.....

Faculty/Institute: .....Science.....

Scientific Department: .....New and Renewable Energy.....

Academic or Professional Program Name: Bachelor's in New and Renewable Energy .....

Final Certificate Name: Bachelor's Degree in New and Renewable Energy

Academic System: .....Semesters.....

Description Preparation Date: 2026

File Completion Date: 2026

Signature:

Head of Department Name:

Asst. Prof. Dr. Ahmed Muneer

2026 / 5 / 7

Date:

Signature:

Associate dean for Scientific affairs :

Prof. Dr. Rayan Mazin Faisal

2026/5/7

Da Prof. Dr.:

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Asst. Prof. Dr. Mahmood Abdulhaq Khames Al-Sumaidaie

Date: 2026/5/7

Dean's Approval

Prof. Dr. Hiyam Adel Ibrahim

1. Program Vision

We aspire to be a leading academic department in the field of new and renewable energy by fostering an innovative educational environment based on cutting-edge scientific and technical curricula. Our vision is to equip students with the skills and knowledge necessary to explore sustainable solutions to environmental and energy challenges. Through research, innovation, and collaboration, we aim to drive sustainable development, train highly qualified professionals, and lead the transition to clean and renewable energy sources. Our commitment lies in offering high-quality education that meets labor market demands, enabling our graduates to pioneer sustainable energy projects globally.

2. Program Mission

The Department of New and Renewable Energy is dedicated to providing a distinguished educational experience, focusing on training students in renewable energy and modern technologies. Our goal is to develop students' skills in innovating effective and sustainable solutions to address global energy challenges. The department is committed to preparing graduates capable of leading the transition towards clean energy by promoting scientific research and applying sustainable energy technologies. We also strive to align graduates' competencies with labor market needs, contributing to sustainable development, supporting the green economy, and protecting the environment at both local and global levels.

3. Program Objectives

1. Enhancing Innovation in Renewable Energy Technologies

- Developing students' skills in innovative thinking and problem-solving in the renewable energy sector.
- Encouraging research and development to create sustainable and efficient

energy solutions.

2. Bridging Theory with Practical Application

- Strengthening partnerships with industrial and research institutions.
- Providing hands-on training opportunities to prepare students for real-world applications.

3. Advancing Scientific Research in Renewable Energy

- Supporting student research projects and establishing specialized research centers.
- Enhancing academic standing through advanced graduate programs.

4. Promoting Environmental Sustainability

- Integrating sustainability concepts into curricula and research.
- Encouraging responsible use of natural resources and minimizing environmental impacts.

5. Developing Technical and Ethical Competencies

- Providing hands-on training in renewable energy technologies.
- Instilling ethical values to ensure responsible and sustainable practices.

6. Strengthening International Cooperation

- Collaborating with global universities and research institutions.
- Facilitating knowledge exchange through joint projects and research.

7. Integrating Artificial Intelligence & Nanotechnology

- Introducing AI and nanotechnology into renewable energy curricula.
- Offering elective courses that explore their applications in improving energy efficiency.

4. Program Accreditation

Does the program have program accreditation? And from which agency?

Yes — the program is accredited under the scientific disciplines accreditation by the national authority responsible for accrediting science college programs.

5. Other external influences

Is there a sponsor for the program?

There is currently no external sponsoring body for the program. It relies on the institutional resources of the College of Science / University of Mosul, with continuous efforts to establish supportive partnerships in the future.

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	**8**	**13**	**5.42**	
College Requirements	**1**	**2**	**0.83**	
Department Requirements	**40**	**219**	**91.25**	
	2	**6**	**2.50**	
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

7. Program Description

University of Mosul Bachelor's degree in New and Renewable Energies (First cycle) Four years nine semesters) - 240 ECTS credits - 1 ECTS = 25 hr Program Curriculum (2024 - 2025)	جامعة الموصل بكالوريوس علوم في الطاقات الجديدة والمتجددة (الدورة الأولى) أربع سنوات تسع فصول دراسية) - ٢٤٠ وحدة اوربية - كل وحدة اوربية = ٢٥ ساعة المنهاج الدراسي للعام ٢٠٢٤-٢٠٢٥

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	S SWL (hr/w)						Exam hr/sem	S SWL hr/sem	U S SWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
							CL (hr/w)	Leot (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)							
UGI	One	1	NRE1101	General Physics I	فيزياء عامة ١	English	3		2		1		3	93	82	175	7.00	C	
		2	NRE1102	Principle of Energies and their Sources	مبادئ الطاقات ومصادرها	English	3				2		3	78	72	150	6.00	C	
		3	NRE1103	General Chemistry	كيمياء عامة	English	3		2		1		3	93	82	175	7.00	C	
		4	NRE1104	Environmental Pollution	تلوث بيئي	English	3				2		3	78	72	150	6.00	C	
		5	UOM101	Arabic Language	اللغة العربية	Arabic	2						3	33	17	50	2.00	B	
		6	UOM104	Human Rights and Democracy	حقوق الانسان والديمقراطية	Arabic	2						3	33	17	50	2.00	B	
							16	0	4	0	6	0	18	408	342	750	30.00		

Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	S SWL (hr/w)						Exam hr/sem	S SWL hr/sem	U S SWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
						CL (hr/w)	Leot (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)							
Two	1	NRE1205	Fundamental of Electricity	اساسيات الكهربائية	English	3		3		1		3	108	92	200	8.00	C	
	2	NRE1206	Analytical Chemistry	كيمياء تحليلية	English	3		2		1		3	93	82	175	7.00	C	
	3	NRE1207	General Physics II (Optics)	فيزياء عامة ٢ (بصريات)	English	3		3		1		3	108	92	200	8.00	C	
	4	Sci-101	Mathematics	الرياضيات	English	2						3	33	17	50	2.00	B	
	5	UOM102	English Language	اللغة الانكليزية	English	2						3	33	17	50	2.00	B	
	6	UOM103	Fundamental of Computer Science	مبادئ علم الحاسوب	English	1		2				3	48	27	75	3.00	B	
						14	0	10	0	3	0	18	423	327	750	30		

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	S SWL (hr/w)						Exam hr/sem	S SWL hr/sem	U S SWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
							CL (hr/w)	Leot (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)							
UGII	Three	1	NRE2308	Analog Electronics	الكترونيك التماثلية	English	2		2		1		3	78	72	150	6.00	C	
		2	NRE2309	Circuit Analysis	تحليل دوائر كهربائية	English	2		2		1		3	78	72	150	6.00	C	
		3	NRE23010	Inorganic Chemistry	كيمياء لا عضوية	English	2						3	33	42	75	3.00	C	
		4	NRE23011	Geology	علم الأرض	English	2		2		1		3	78	72	150	6.00	C	
		5	NRE23012	Thermodynamics	ديناميك حرارة	English	2		2				3	63	62	125	5.00	C	
		6	UOM2022	English Language	اللغة الانكليزية	English	2						3	33	17	50	2.00	B	
		7	UOM2050	Crimes of the defunct Baath Party	جرائم حزب البعث البائد	Arabic	2						3	33	17	50	2.00	B	
							14	0	8	0	3	0	21	396	354	750	30		

Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	S SWL (hr/w)						Exam hr/sem	S SWL hr/sem	U S SWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
						CL (hr/w)	Leot (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)							
Four	1	NRE24013	Digital Electronics	الكترونيات رقمية	English	3		2		1		3	93	82	175	7.00	C	
	2	NRE24014	Materials Science and Fluids	علم المواد والموائع	English	3		2		1		3	93	82	175	7.00	C	
	3	UOM2032	Computer 2	الحاسوب ٢	English	1		2				3	48	27	75	3.00	B	
	4	NRE24016	Organic Chemistry	كيمياء عضوية	English	3		2		1		3	93	82	175	7.00	C	
	5	NRE24017	Occupational Safety	السلامة المهنية	English	2						3	33	17	50	2.00	C	
	6	NRE24018	Statistics	احصاء	English	2						3	33	17	50	2.00	C	
	7	UOM2012	Arabic Language 2	اللغة العربية ٢	Arabic	2						3	33	17	50	2.00	B	
						16	0	8	0	3	0	21	426	324	750	30.00		

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
							CL (hr/w)	Leot (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)							
UGIII	Five	1	NRE35019	Measurements and Control	قياسات وسيطرة	English	3		2		1		3	93	82	175	7.00	C	
		2	NRE35020	Heat Transfer	انتقال الحرارة	English	3						3	48	27	75	3.00	C	
		3	NRE35021	Solar Energy	الطاقة الشمسية	English	3						3	48	27	75	3.00	C	
		4	NRE35022	Energy Transmission and Storage	خزن ونقل الطاقة	English	3		2		1		3	93	82	175	7.00	C	
		5	NRE35023	Modeling of Renewable Energy	نمذجة طاقات متجددة	English	3		2		1		3	93	82	175	7.00	C	
		6	NRE35024	Hydro Electric Energy	طاقة كهرومائية	English	3						3	48	27	75	3.00	C	
							18	0	6	0	3	0	18	423	327	750	30		

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
							CL (hr/w)	Leot (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)							
	Six	1	NRE36025	Solar Cell PV	خلايا شمسية	English	3		2		1		3	93	82	175	7.00	C	
		2	NRE36026	Economics of Energy	اقتصاديات الطاقة	English	3						3	48	27	75	3.00	C	
		3	NRE36027	Wind Energy	طاقة رياح	English	3		2		1		3	93	82	175	7.00	C	
		4	NRE36028	Meteorology	علم الأرصاد الجوية	English	3						3	48	27	75	3.00	C	
		5	NRE36029	Petroleum Energy	الطاقة البترولية	English	3		2		1		3	93	82	175	7.00	C	
		6	NRE36030	Geothermal Energy	الطاقة الجيوحرارية	English	3						3	48	27	75	3.00	C	
							18	0	6	0	3	0	18	423	327	750	30		

Summer Semes	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
							CL (hr/w)	Leot (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)							

Level/ Year	Course code	Course Title	Lect.	Lab.	Tut.
First year First course	NRE1101	General Physics 1	3	2	1
	NRE1102	Principles of Energy and their Sources	3	-	2
	NRE1103	General Chemistry	3	2	1
	NRE1104	Environmental Pollution	3	-	2
	UOM101	Arabic Language	2	-	-
	UOM104	Democracy and Human Rights	2	-	-
					-
First year Second course	NRE1205	Fundamental of Electricity	3	3	1
	NRE1206	Analytical Chemistry	3	2	1
	NRE1207	General Physics 2 (Optics)	3	3	1
	Sci-101	Mathematics	2	-	-
	UOM102	English Language	2	-	-
	UOM103	Fundamental of Computer science	1	2	-
Second year First course	NRE2308	Analog Electronics	2	2	1
	NRE2309	Circuit Analysis	2	2	1
	NRE23010	Inorganic Chemistry	2	-	-
	NRE23011	Geology	2	2	1
	NRE23012	Thermodynamics	2	2	-
	UOM2050	Crimes of the defunct Baath Party	2	-	-
	UOM2022	English Language	2	-	-
Second year Second course	NRE24013	Digital Electronics	3	2	1
	NRE24014	Materials Science and Fluids	3	2	1
	UOM2032	Computer 2	1	2	-
	NRE24016	Organic Chemistry	3	2	1
	NRE24017	Occupational Safety	2	-	-
	NRE24018	Statistics	2	-	-
	UOM2012	Arabic Language 2	2	-	-
Third year First course	NRE35019	Measurements and Control	3	2	1
	NRE35020	Heat Transfer	3	-	-
	NRE35021	Solar Energy	3	-	-
	NRE35022	Energy Transmission and Storage	3	2	1
	NRE35023	Modeling of Renewable	3	2	1

		Energy			
	NRE35024	Hydro Electric Energy	3	-	-
Third year Second course	NRE36025	Solar Cell PV	3	2	1
	NRE36026	Economics of Energy	3	-	-
	NRE36027	Wind Energy	3	2	1
	NRE36028	Meteorology	3	-	-
	NRE36029	Petroleum Energy	3	2	1
	NRE36030	Geothermal Energy	3	-	-
Fourth year First course	SCNR26-F4011	Biomass Energy	3	-	-
	SCNR26-F4021	Small Solar Energy systems	3	2	-
	SCNR26-F4151	Nanotechnology	3	-	-
	SCNR26-F4041	Nuclear Energy	3	-	-
	SCNR26-F4161	Selective course	2	-	-
	SCNR26-F4141	Hydrology	3	-	-
Fourth year Second course	SCNR26-F4171	Conductive polymers	3	-	-
	SCNR26-F4081	Large Solar Energy systems	3	-	-
	SCNR26-F4101	Professional	2	-	-
	SCNR26-F4111	Networking	3	-	-
	SCNR26-F4191	Global Warming	3	-	-
	SCNR26-F4181	Photochemistry	3	-	-
	SCNR26-F4201	Graduation Project	2	-	-

8. Expected learning outcomes of the program

Outcome 1 : Identifying Renewable Energy Challenges

- **Students can recognize and analyze key issues related to energy efficiency, sustainability, and environmental impact..**

Outcome 2: Applying Scientific Knowledge to Energy Solutions

- **Graduates will be equipped to design and implement effective clean energy solutions for local and global needs.**

Outcome 3 : Conducting Scientific Experiments in Renewable Energy

- **Developing hands-on skills in designing, testing, and analyzing renewable energy technologies.**

Outcome 4: Communicating Effectively in the Energy Sector

- **Enhancing both oral and written communication skills for professional and academic collaboration.**

Outcome 5: Upholding Ethical and Professional Standards

- **Understanding the social and environmental responsibilities of renewable energy practices.**

Outcome 6: Excelling in Team-Based Energy Projects

- **Collaborating effectively in research teams to develop innovative energy solutions.**

Outcome 7: Staying Up to Date with Technological Advancements

- **Gaining expertise in the latest energy technologies, including solar, wind, and bioenergy**

Knowledge	
Learning Outcomes 1	A- Knowledge and understanding Upon completion of the program, the student will be able to A1- Devise and understand the work of renewable energy systems A2- Applying knowledge in the field of renewable energies and keeping pace with the prospects for their rapid and steady development A3- Understanding, defining, formulating, and finding solutions to the problems and dilemmas of the various renewable energy systems. A4- Knowing the economic cost calculation for all types of renewable energies.
Skills	
Learning Outcomes 2	B- Subject-specific skills B1- The ability to work in a multidisciplinary team B2- The ability to communicate constructively

	B3- Effective influence on society and the labor market B4- Apply the theoretical and practical knowledge the student has learned in the field of renewable energy.
Learning Outcomes 3	C- Thinking skills C1-- Developing thinking skills by formulating questions and assignments that develop the student's abilities and increase his self-confidence and full readiness to understand and solve questions related to the subject. C2- Discussion skills C3- Laboratory report writing skills C4- The ability to use modern methods, tools, and skills necessary for work in the field of renewable energy
Ethics	
Learning Outcomes 4	D1- Equip the student to link the applied aspect with theoretical knowledge
Learning Outcomes 5	D2- Understanding energy and renewable energy and its types

9. Teaching and Learning Strategies

Teaching and learning strategies and methods adopted in implementing the program in general.

1- The delivery strategy (lecture) to give the student a comprehensive vision of the subject matter

2- Discussion strategy to deepen the student's understanding of the studied material

3- Cooperative education strategy, which develops the student's individual and collective responsibility

4- E-learning strategies to improve the teaching process

5- Discovery education strategy, which gives the student an active role in discovering information, which helps him retain learning.

10. Evaluation methods

Implemented at all stages of the program in general.

1- Written exam

A- Multiple choice exam

B- True and false exam

T- Fill-in-the-blank exam

D- Short answer exam

2- Assignment

A- Homework

B- Discussions

T- Writing laboratory reports

D- Graduation project for the final stages

1. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Prof.	2	-			2	
Assit. Prof.	12	-			12	
Lecturer	11	-			11	
Assit. Lec.	6	-			6	

Professional Development

Mentoring new faculty members

Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.

• Encouraging them to attend conferences, workshops, and seminars, participating in discussion circles, and urging them to publish in reputable magazines.

• Introducing them to the university, its development vision, its plan towards internationalization, and its development programs.

• Helping them adapt practically and psychologically and alleviating anxiety that could hinder their participation and integration into university work and activities.

• The new faculty member's familiarity with the university's professional development programs so that he can play an active role in them.

• Providing the opportunity for the new faculty member to build a network of relationships and communicate with his peers from other departments and colleges.

• Make him aware of their rights and duties.

• Introducing them to scientific research programs at the university to enable them to contribute to its research processes.

• Introducing them to the services provided by the university to its members so that they can benefit from them.

• Developing their skills in teaching, learning, and managing the educational process.

Professional development of faculty members

Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

• Continuous training: Continuous training opportunities must be provided for teachers and faculty members to improve their teaching, communication and technical skills. Workshops, training courses, seminars and conferences can be organized to provide these opportunities.

• Individual mentoring: Teachers and faculty should receive individual mentoring from experts in the field of higher education to improve their skills and develop their teaching methods.

• Communication and Collaboration: Teachers and faculty should be encouraged to communicate and collaborate with each other. Working sessions and forums can be organized to discuss ideas and exchange experiences and successful experiences.

• Continuous evaluation: Mechanisms must be provided to evaluate the performance of teachers and faculty members on a regular basis. Student surveys, peer feedback, and performance reviews can be used to evaluate performance and identify areas for improvement.

• Research and development: Teachers and faculty members should be encouraged to research and develop in their specialized fields. The necessary financial, technical and library resources can be provided to support research and publish results in scientific journals.

• Use of technology: Teachers and faculty should be encouraged to use technology in teaching and communicating with students. Training and support can be provided to use available technological tools such as electronic learning management systems and interactive educational software.

• Community outreach: Teachers and faculty should be encouraged to connect with the local community and industry to provide opportunities for hands-on learning and practical application of the skills they acquire. Field visits and cooperation with companies and other institutions can be organized to achieve this.

2. Acceptance Criterion

(Setting regulations related to enrollment in the college or institute, whether central admission or others)

1- Iraqi nationality.

2- Holder of a secondary school certificate supported by certification from the General Directorate of Education in the governorate.

3- Success in the medical examination according to the conditions specific to each study.

4- The age of the applicant for central admission must not exceed 24 years, i.e. those born in 2000 or above. Anyone older than that has the right to apply to evening or private colleges.

5- Acceptance according to the cumulative assessment.

6- Admission to departments is based on the student's cumulative GPA.

7- Absorptive capacity

8- If he is devoted to studying, it is not permissible to combine his job with

studying in colleges and morning institutes.

3. **The most important sources of information about the program**
State briefly the sources of information about the program. 1- Methodical and helpful books. 2- Books and reading resources in English and Arabic. 3- Additional sources from the Internet. 4- Training courses held by the university on e-learning platforms

4. Program Development Plan
• Organizing workshops and training courses. • Forming committees to discuss the reality of teaching, with its positives and negatives, and to develop curricula and plans and update educational resources. • Providing opportunities for academic and research development through participation in scientific seminars and conferences.

				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
First class	NRE1101	General Physics 1	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	NRE1102	Principles of Energy and their Sources	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	NRE1103	General Chemistry	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	NRE1104	Environmental Pollution	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	UOM101	Arabic Language	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	UOM104	Democracy and Human Rights	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	NRE1205	Fundamental of Electricity	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	NRE1206	Analytical Chemistry	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	NRE1207	General Physics 2 (Optics)	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	Sci-101	Mathematics	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	UOM102	English Language	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	UOM103	Fundamental of Computer science	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Second class	NRE2308	Analog Electronics	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	NRE2309	Circuit Analysis	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	NRE23010	Inorganic Chemistry	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	NRE23011	Geology	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	NRE23012	Thermodynamics	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	UOM2050	Crimes of the defunct Baath Party	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	UOM2022	English Language	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	NRE24013	Digital Electronics	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	NRE24014	Materials Science and Fluids	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		

	UOM2032	Computer 2	**Basic**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	NRE24016	Organic Chemistry	**Basic**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	NRE24017	Occupational Safety	**Basic**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	NRE24018	Statistics	**Basic**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	UOM2012	Arabic Language 2	**Basic**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Third class	**NRE35019**	Measurements and Control	**Basic**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	NRE35020	Heat Transfer	**Basic**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	NRE35021	Solar Energy	**Basic**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	NRE35022	Energy Transmission and Storage	**Basic**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	NRE35023	Modeling of Renewable Energy	**Basic**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	NRE35024	Hydro Electric Energy	**Basic**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	NRE36025	Solar Cell PV	**Basic**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	NRE36026	Economics of Energy	**Basic**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	NRE36027	Wind Energy	**Basic**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	NRE36028	Meteorology	**Basic**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	NRE36029	Petroleum Energy	**Basic**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	NRE36030	Geothermal Energy	**Basic**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Forth class	**SCNR26-F4011**	Biomass Energy	**Basic**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	SCNR26-F4021	Small Solar Energy systems	**Basic**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	SCNR26-F4151	Nanotechnology	**Basic**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	SCNR26-F4041	Nuclear Energy	**Basic**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	SCNR26-F4161	Selective course	**Selective**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	SCNR26-F4141	Hydrology	**Basic**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	SCNR26-F4171	Conductive polymers	Basic												
	SCNR26-F4081	Large Solar Energy	**Basic**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		

		systems													
	SCNR26-F4101	Professional	**Basic**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	SCNR26-F4111	Networking	**Basic**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	SCNR26-F4191	Global Warming	**Basic**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	SCNR26-F4181	Photochemistry	**Selective**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	SCNR26-F4201	Graduation Project	**Basic**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**