



Description of the Academic Program

Reviewing the performance of higher education institutions
((academic program review))

Description of the academic program

Studying the types of new and renewable energy and preparing a generation that is aware of the culture of renewable energy and is prepared to utilize it as the basis of the majority of energy in society. This is obtained by providing a sufficient academic program that supplies society with distinguished graduates who are capable of dealing with the modern changes and developments taking place in the world, as well as contributing to the development of scientific, health, industrial, and environmental institutions by solving the obstructing problems that arise.

In addition, this program prepares cadres specialized in energy sciences and their applications and qualifies graduates specialized in the fields of energy, who possess a familiarity with the theoretical foundations of energy sciences as well as their field applications.

1- Educational institution	University of Mosul/Collage of Science
2- University department/center	New and renewable energies
3- Name of the academic program	The Science of new and renewable energies
4- Name of the final certificate	Bachelors'
5- Education system	Courses
6- Applied accreditation program	ABET
7- Other external influences	
8- Date of description preparation	2020-2021
9- Objectives of the academic program	Achieving national classification
-10 Required educational outcomes and teaching, learning, and evaluation methods Passing in the academic subjects in the four years + graduation research + summer training	



1- Knowledge and understanding

a1 -Exams

b 2-Daily assignments and discussions

2- Subject-specific skills

a -1The ability to work in a multidisciplinary team

b -2The ability to communicate constructively

Teaching and learning methods

Blended learning through electronic theoretical lectures, practical in-person, electronic, and applied lectures, daily assignments, and discussions.

a-Thinking skills

b- Discussions

c-Assignments

d- Laboratory reports

e- Scientific reports

Teaching and learning methods

Electronic lectures in PDF format, electronic meetings, sending videos, conducting practical experiments, applications, homework, and scientific discussions.

Evaluation methods

Exams, projects, daily assignments, discussions, laboratory reports, and a graduation project.

General and portable skills (other skills related to employability and personal development

The ability to work in a multidisciplinary team

The ability to communicate constructively



University of Mosul
College of Science
Department of New & Renewable Energy



Program structure

Credit hours		The name of the course	Course or course code	Level/year
Theoretical	Practical			
3	3	Analytical Chemistry	UMSCNR21S1011	First year First semester
3	3	D.C Circuit	UMSCNR21S1021	
3		Geoscience	UMSCNR21S1031	
3	3	Mechanics	UMSCNR21S1041	
3		Mathematicss	UMSCNR21S1051	
1	2	Mat lab	UMSCNR21S1061	
1		Human Rights	UMSCNR21S1071	
3	3	Analytical Chemistry2	UMSCNR21S1091	First year Second semester
3	3	A.C Circuit	UMSCNR21S1101	
3		Geoscience 2	UMSCNR21S1111	
3	3	Optics	UMSCNR21S1121	
3		Mathematicss 2	UMSCNR21S1131	
1	2	Mat lab	UMSCNR21S1141	
1		Democracy	UMSCNR21S1151	
3	3	Analog Electronics	UMSCNR21S2011	Second Year First Semester
2	2	Geothermal Energy	UMSCNR21S2021	
3		Inorganic Chemistry	UMSCNR21S2031	
3		Mathematics	UMSCNR21S2041	
3	3	Organic Chemistry	UMSCNR21S2051	
3	3	Thermodynamic	UMSCNR21S2061	
3	3	Digital Electronics	UMSCNR21S2101	
3		Industrial Chemistry	UMSCNR21S2111	Second Year Second Semester
3	3	Materials Science	UMSCNR21S2121	
3		Mathematics (Statistics)	UMSCNR21S2131	
3	3	Meteorology	UMSCNR21S2141	
3		Organic Chemistry	UMSCNR21S2151	
1	2	Mat lab	UMSCNR21S2161	



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2	2	Mathematical Modelling	UMSCNR21S3011	Third Year First Semester
3	3	Electronic Measurements and Control	UMSCNR21S3201	
3		Energy Sources and Synthetic Fuel	UMSCNR21S3031	
3		Environment Pollution	UMSCNR21S3041	
1	2	Hydrology	UMSCNR21S3051	
3	3	Solar Cell	UMSCNR21S3061	
3		Advanced Solar Cell	UMSCNR21S3101	Third Year Second Semester
2		Energy Economics	UMSCNR21S3111	
3	3	Energy Storage	UMSCNR21S3121	
3	3	Petroleum Chemistry	UMSCNR21S3131	
3	3	Wind Power	UMSCNR21S3141	
		Occupational safety	UMSCNR21S3151	
3		Biomass Energy	UMSCNR21S4101	Fourth year First Semester
3		Hydropower	UMSCNR21S4021	
3	3	Nanomaterials	UMSCNR21S4031	
3		Nuclear Energy	UMSCNR21S4041	
2		Selective Course	UMSCNR21S4051	
3	3	Small Solar Energy Systems	UMSCNR21S4061	
3		Grid Connection Systems	UMSCNR21S4071	Fourth year Second Semester
3		Large Solar Energy Systems	UMSCNR21S4081	
3	3	Nanoenergy	UMSCNR21S4091	
3		Photochemistry	UMSCNR21S4101	
2		Professional Ethics	UMSCNR21S4111	
2		Selective Course	UMSCNR21S4121	
2		Healthy culture	UMSCNR21S4131	
1	2	Graduation Project		



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143 academic units	Bachelor's degree requires (x) number of credit hours	Certificates and credit hours
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12	Planning for personal development
	Extracurricular activities
13	Admission standard (setting regulations regarding admission to the college or institute)
	Desire + preparatory rate
	Central admission to the Ministry of Higher Education and Scientific Research
-14	The most important sources of information about the program
	The student's guide for central admission, prepared by the Ministry of Higher Education and Scientific Research