

University of Mosul

جامعة الموصل



College of Science

كلية العلوم

First Cycle – Bachelor's degree (B.Sc.) – New and Renewable Energies

بكالوريوس علوم - الطاقات الجديدة والمتجددة



Table of Contents

1. Overview
2. Undergraduate Modules 2023-2024
3. Contact

1. Overview

This catalogue is about the courses (modules) given by the program of Electrical Engineering to gain the Bachelor of Science degree. The program delivers (48) Modules with (6000) total student workload hours and 240 total ECTS. The module delivery is based on the Bologna Process.

نظرة عامة

يتناول هذا الدليل المواد الدراسية التي يقدمها برنامج الهندسة الكهربائية للحصول على درجة بكالوريوس العلوم. يقدم البرنامج (48) مادة دراسية، على سبيل المثال، مع (6000) إجمالي ساعات حمل الطالب و 240 إجمالي وحدات أوروبية. يعتمد تقديم المواد الدراسية على عملية بولونيا.

2. Undergraduate Courses 2023-2024

Module 1

Code	Course/Module Title	ECTS	Semester
NRE11001	General Physics I	7	1
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
4	1	78	47
Description			
This section includes a description of the module, 100-150 words			

Module 2

Code	Course/Module Title	ECTS	Semester
NRE11002	Principle of Energies and their Sources	6	1
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
4	0	63	62
Description			
This section includes a description of the module, 100-150 words			

Module 3

Code	Course/Module Title	ECTS	Semester
NRE11003	General Chemistry I	7	1
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
4	2	93	57
Description			
This section includes a description of the module, 100-150 words			

Module 4

Code	Course/Module Title	ECTS	Semester
NRE11004	Environmental Pollution	6	1
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
4	3	109	91
Description			
This section includes a description of the module, 100-150 words			

Module 5

Code	Course/Module Title	ECTS	Semester
MUS11005	Human Rights and Democracy	2	1
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
4	3	109	91
Description			
This section includes a description of the module, 100-150 words			

Module 6

Code	Course/Module Title	ECTS	Semester
MUS11006	Arabic Language	2	1
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
4	3	109	91
Description			
This section includes a description of the module, 100-150 words			

Module 7

Code	Course/Module Title	ECTS	Semester
NRE12007	General Physics II (Optics)	5	2
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
4	3	109	91
Description			
This section includes a description of the module, 100-150 words			

Module 8

Code	Course/Module Title	ECTS	Semester
NRE12008	Fundamental of Electricity	7	2
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
4	3	109	91
Description			
This section includes a description of the module, 100-150 words			

Module 9

Code	Course/Module Title	ECTS	Semester
NRE12009	Analytical Chemistry	7	2
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
4	3	109	91
Description			
This section includes a description of the module, 100-150 words			

Module 10

Code	Course/Module Title	ECTS	Semester
NRE12010	Calculus	4	2
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
4	3	109	91
Description			
This section includes a description of the module, 100-150 words			

Module 11

Code	Course/Module Title	ECTS	Semester
NRE12011	Geology	5	2
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
4	3	109	91
Description			
This section includes a description of the module, 100-150 words			

Module 12

Code	Course/Module Title	ECTS	Semester
MUS12012	English	2	2
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
4	3	109	91
Description			
This section includes a description of the module, 100-150 words			

Module 13

Code	Course/Module Title	ECTS	Semester
NRE23013	Analog Electronics	7	3
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
4	3	109	91
Description			
This section includes a description of the module, 100-150 words			

Module 14

Code	Course/Module Title	ECTS	Semester
NRE23014	Circuit Analysis	7	3
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
4	3	109	91
Description			
This section includes a description of the module, 100-150 words			

Module 15

Code	Course/Module Title	ECTS	Semester
NRE23015	Organic Chemistry	6	3
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
4	3	109	91
Description			
This section includes a description of the module, 100-150 words			

Module 16

Code	Course/Module Title	ECTS	Semester
NRE23016	Differential Equations	4	3
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
4	3	109	91
Description			
This section includes a description of the module, 100-150 words			

Module 17

Code	Course/Module Title	ECTS	Semester
NRE23017	Thermodynamics	4	3
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
4	3	109	91
Description			
This section includes a description of the module, 100-150 words			

Module 18

Code	Course/Module Title	ECTS	Semester
MUS23018	Laboratory Safety	2	3
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
4	3	109	91
Description			
This section includes a description of the module, 100-150 words			

Module 19

Code	Course/Module Title	ECTS	Semester
NRE24019	Digital Electronics	6	4
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
4	3	109	91
Description			
This section includes a description of the module, 100-150 words			

Module 20

Code	Course/Module Title	ECTS	Semester
NRE24020	Materials Science and Fluids	6	4
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
4	3	109	91
Description			
This section includes a description of the module, 100-150 words			

Module 21

Code	Course/Module Title	ECTS	Semester
NRE24021	Computer Programming	6	4
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
4	3	109	91
Description			
This section includes a description of the module, 100-150 words			

Module 22

Code	Course/Module Title	ECTS	Semester
NRE24022	Inorganic Chemistry	4	4
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
4	3	109	91
Description			
This section includes a description of the module, 100-150 words			

Module 23

Code	Course/Module Title	ECTS	Semester
NRE24023	Meteorology	4	4
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
0	1	16	74
Description			
This section includes a description of the module, 100-150 words			

Module 24

Code	Course/Module Title	ECTS	Semester
NRE24024	Statistics	4	4
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
0	1	16	74
Description			
This section includes a description of the module, 100-150 words			

Module 25

Code	Course/Module Title	ECTS	Semester
NRE35025	Measurements and Control	5	5
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
0	1	16	74
Description			
This section includes a description of the module, 100-150 words			

Module 26

Code	Course/Module Title	ECTS	Semester
NRE35026	Heat Transfer	5	5
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
0	1	16	74
Description			
This section includes a description of the module, 100-150 words			

Module 27

Code	Course/Module Title	ECTS	Semester
NRE35027	Solar Energy	5	5
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
0	1	16	74
Description			
This section includes a description of the module, 100-150 words			

Module 28

Code	Course/Module Title	ECTS	Semester
NRE35028	Energy Transmission and Storage	6	5
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
0	1	16	74
Description			
This section includes a description of the module, 100-150 words			

Module 29

Code	Course/Module Title	ECTS	Semester
NRE35029	Modeling of Renewable Energy	5	5
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
0	1	16	74
Description			
This section includes a description of the module, 100-150 words			

Module 30

Code	Course/Module Title	ECTS	Semester
NRE35030	Hydro Electric Energy	4	5
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
0	1	16	74
Description			
This section includes a description of the module, 100-150 words			

Module 31

Code	Course/Module Title	ECTS	Semester
NRE36031	Solar Cell PV	5	6
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
0	1	16	74
Description			
This section includes a description of the module, 100-150 words			

Module 32

Code	Course/Module Title	ECTS	Semester
NRE36032	Economics of Energy	6	6
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
0	1	16	74
Description			
This section includes a description of the module, 100-150 words			

Module 33

Code	Course/Module Title	ECTS	Semester
NRE36033	Wind Energy	5	6
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
0	1	16	74
Description			
This section includes a description of the module, 100-150 words			

Module 34

Code	Course/Module Title	ECTS	Semester
NRE36034	Sustainable Buildings	5	6
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
0	1	16	74
Description			
This section includes a description of the module, 100-150 words			

Module 35

Code	Course/Module Title	ECTS	Semester
NRE36035	Petroleum energy	5	6
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
0	1	16	74
Description			
This section includes a description of the module, 100-150 words			

Module 36

Code	Course/Module Title	ECTS	Semester
NRE36036	Geothermal Energy	5	6
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
0	1	16	74
Description			
This section includes a description of the module, 100-150 words			

Module 37

Code	Course/Module Title	ECTS	Semester
NRE47037	Biomass Energy	6	7
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
0	1	16	74
Description			
This section includes a description of the module, 100-150 words			

Module 38

Code	Course/Module Title	ECTS	Semester
NRE47038	Methodology	3	7
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
0	1	16	74
Description			
This section includes a description of the module, 100-150 words			

Module 39

Code	Course/Module Title	ECTS	Semester
NRE47039	Solar Energy systems	7	7
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
0	1	16	74
Description			
This section includes a description of the module, 100-150 words			

Module 40

Code	Course/Module Title	ECTS	Semester
NRE47040	Nuclear Energy	7	7
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
0	1	16	74
Description			
This section includes a description of the module, 100-150 words			

Module 41

Code	Course/Module Title	ECTS	Semester
MUS47041	Professional Ethics	2	7
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
0	1	16	74
Description			
This section includes a description of the module, 100-150 words			

Module 42

Code	Course/Module Title	ECTS	Semester
NRE47042	Elective Course	2	7
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
0	1	16	74
Description			
This section includes a description of the module, 100-150 words			

Module 43

Code	Course/Module Title	ECTS	Semester
NRE48043	Nanotechnology	6	8
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
0	1	16	74
Description			
This section includes a description of the module, 100-150 words			

Module 44

Code	Course/Module Title	ECTS	Semester
NRE48044	Conductive Polymers	7	8
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
0	1	16	74
Description			
This section includes a description of the module, 100-150 words			

Module 45

Code	Course/Module Title	ECTS	Semester
NRE48045	Hydrology	6	8
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
0	1	16	74
Description			
This section includes a description of the module, 100-150 words			

Module 46

Code	Course/Module Title	ECTS	Semester
NRE48046	Grid Connected Systems	7	8
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
0	1	16	74
Description			
This section includes a description of the module, 100-150 words			

Module 47

Code	Course/Module Title	ECTS	Semester
NRE48047	Graduation Project	2	8
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
0	1	16	74
Description			
This section includes a description of the module, 100-150 words			

Module 48

Code	Course/Module Title	ECTS	Semester
NRE48048	Elective Course	2	8
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
0	1	16	74
Description			
This section includes a description of the module, 100-150 words			

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