



Electrical and Renewable Energy Engineering Program

Course Specification - (2025-2026)

Environmental Impact of Projects – MPE472

Academic Year	2025/2026	Semester	Fall
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1. Basic Information

Course Title (according to the bylaw)	Environmental Impact of Projects				
Course Code (according to the bylaw)	MPE472				
Prerequisite:	--				
Department/s participating in delivery of the course	Electrical and Renewable Energy Engineering				
Number of credit hours/points of the course (according to the bylaw)	Credit Hours	Contact Hours			
		Lecture	Tutorial	Practical	Total
	3	2	2	0	4
Course Type	Elective - Minor Requirements of Electrical and Renewable Energy Engineering				
Academic level at which the course is taught	Fifth Level				
Academic Program	Bachelor of Engineering of Electrical and Renewable Energy				
Faculty/Institute	Faculty of Engineering				
University/Academy	Nahda University				
Name of Course Coordinator	Dr. Hassan Moh. Mahmoud				
Course Specification Approval:	Department council		Faculty council		
Date of Approval of the course Specification:	13 / 9 / 2025		16 / 9 / 2025		



2. Course Overview

Introduction: Availability of natural resources, Natural cycles for some basic elements (carbon, oxygen, nitrogen, sulfur, phosphorous...). Conflicts between developments, economics and environments. Defining emissions sources, Impacts, standards and precautions. Water, air and soil pollution and measurements. Historical development for recognizing the need for environmental impact assessment. Assessing the impacts on health, social, cultural and economic activities. Procedures of the environmental impact assessment: Screening, Scoping, defining impacts, comparing alternatives, Plans for mitigation and alleviation, Environmental auditing. Public participation. Environmental impact statement and reporting, Contents and forms. Solar site assessment, wind assessment, and bioenergy with required exercises using current industry tools to assess the viability of the resource. Examples for assessing the impacts of Solar, wind. etc. resources projects on the environment and impacts of different activities.

3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with program outcomes POs (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	Text	Code	Text
A3	Apply engineering design processes to produce cost-effective solutions that meet specified needs with consideration for global, cultural, social, economic, environmental, ethical and other aspects as appropriate to the Electrical and Renewable Energy Engineering Program and within the principles and contexts of sustainable design and development.	CLO1	Apply engineering design processes to develop solutions that meet specified technical requirements.
		CLO2	Evaluate engineering solutions within the principles of sustainable design and development.
A4	Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues and risk management principles.	CLO3	Utilize contemporary technologies and tools for monitoring and controlling environmental parameters such as temperature, humidity, ventilation, lighting, and air quality.
A5	Practice research techniques and methods of investigation as an inherent part of learning.	CLO4	Analyze information from relevant and credible sources.



Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	Text	Code	Text
		CLO5	Apply codes of practice and engineering standards in the analysis, design, and implementation of engineering solutions.

4. Teaching and Learning Methods

1. Interactive Lectures
2. Self-Learning
3. Discussion
4. Tutorials
5. Report and research

Course Schedule

Number of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Expected number of the Learning Hours			
			Lecture Hours	Tutorial Hours	Practical Hours	Self-learning (Assignments/Project)
1, 2	Introduction: Availability of natural resources, Natural cycles for some basic elements (carbon, oxygen, nitrogen, sulfur, phosphorous...).	6	2	2	0	2
3, 4	Conflicts between developments, economics and environments. Defining emissions sources, Impacts, standards and precautions.	6	2	2	0	2
5	Water, air and soil pollution and measurements. Historical development for recognizing the need for environmental impact assessment. Assessing the impacts on health, social, cultural and economic activities	6	2	2	0	2
6	Procedures of the environmental impact assessment: Screening, Scoping, defining impacts, comparing alternatives, Plans for mitigation and alleviation, Environmental auditing. Public participation.	6	2	2	0	2
7	Mid-Term Exam					
8	Procedures of the environmental impact assessment: Screening, Scoping, defining impacts, comparing alternatives, Plans for	6	2	2	0	2



	mitigation and alleviation, Environmental auditing. Public participation.					
9, 10	Environmental impact statement and reporting. Contents and forms.	6	2	2	0	2
11	Solar site assessment, wind assessment, and bioenergy with required exercises using current industry tools to assess the viability of the resource	6	2	2	0	2
12	Solar site assessment, wind assessment, and bioenergy with required exercises using current industry tools to assess the viability of the resource	6	2	2	0	2
13, 14	Examples for assessing the impacts of Solar, wind, etc. resources projects on the environment and impacts of different activities	6	2	2	0	2
15	Revision	6	2	2	0	Discussion
16	Final Exam					

5. Methods of students' assessment

No.	Assessment Methods *	Assessment Timing (Week Number)	Marks/ Scores	Percentage of total course Marks
1	Mid-term written Exam	7	20	20%
2	Final Written Exam	16	40	40%
3	Assignments	2-14	10	10%
4	Quizzes	5,10	20	20%
5	Report	12	10	10%

6. Learning Resources and Supportive Facilities

Learning resources (books, scientific references, etc.) *	The main (essential) reference for the course	Noble, B. F. (2024). Introduction to Environmental Impact Assessment: A Guide to Principles and Practice (5th ed.). Oxford University Press.
	Other References	Handbook of Wind Resource Assessment. (2023). Wiley.
	Electronic Sources	www.ekb.eg
	Learning Platforms	https://lms.nub.edu.eg/login/index.php
Supportive facilities & equipment	Devices/Instruments	Data Show
	Supplies	White Board
	Electronic Programs	MATLAB Programs



for teaching and learning	Skill Labs/ Simulators	–
	Virtual Labs	–
	Other (to be mentioned)	Lecture Hall and Laboratory Usage

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