



Electrical and Renewable Energy Engineering Program

Course Specification - (2025-2026)

Electrical Distribution Systems Installations – ERE371

Academic Year	2025/2026	Semester	Fall
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1. Basic Information

Course Title (according to the bylaw)	Electrical Distribution Systems Installations				
Course Code (according to the bylaw)	ERE371				
Prerequisite:	Electrical Circuits (2) – CCE121				
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	Assoc. Prof. Dr. Amir Yassin				
Course Specification Approval:	Department council			Faculty council	
Date of Approval of the course Specification:	13 / 9 / 2025			16 / 9 / 2025	



2. Course Overview

Introduction of electric installation design, engineering drawings and documents. Wiring system, symbols, schematic diagram and work scope. Load estimation. Primary and Secondary distribution system configurations and design. Codes and standards of electrical installations. Power distribution in residential and public buildings, Illumination technologies, Installation of electrical components, Electrical hazards, Inspection and testing, Electrical maintenance. Design of emergency and earthing systems, Voltage drop calculations, Short circuit calculations, Protection of distribution systems, LV switchgear: functions & selection, Power factor corrections, Active distribution systems.

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
B1	Select, model and analyze electrical power systems applicable to the Electrical Power and Renewable Energy Engineering Program by applying the concepts of: generation, transmission and distribution of electrical power systems	CLO1	Recognize electrical installation design of different types of buildings.
		CLO2	Analyze performance of power distribution systems
B3	Design and implement: elements, modules, sub-systems or systems in electrical / electronic / digital engineering using technological and professional tools.	CLO1	Recognize electrical installation design of different types of buildings.
		CLO2	Analyze performance of power distribution systems
		CLO4	Gain access to data and information from libraries and internet related to course subjects.
B5	Adopt suitable national and international standards and codes to: design, build, operate, inspect and	CLO3	Discuss operations of primary and secondary distribution systems feeding different load types.



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
	maintain electrical/electronic/digital equipment, systems and services.	CLO4	Gain access to data and information from libraries and internet related to course subjects.
D2	Identify, analyze and evaluate the energy's conversion processes and management techniques.	CLO1	Recognize electrical installation design of different types of buildings.
		CLO2	Analyze performance of power distribution systems
		CLO3	Discuss operations of primary and secondary distribution systems feeding different load types.
		CLO4	Gain access to data and information from libraries and internet related to course subjects.

4. Teaching and Learning Methods

1. Interactive Lectures
2. Self-learning
3. Tutorials.
4. Report and Research
5. Discussion

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 (Ass/ Project)	Other
1	Introduction of electric installation design, engineering drawings and documents	6	2	2	0	2	-
2	Wiring system, symbols, schematic diagram and work scope	6	2	2	0	2	-
3	Load estimation	6	2	2	0	2	-
4	Primary and Secondary distribution system configurations and design	6	2	2	0	2	-



5	Codes and standards of electrical installations	8	2	2	0	2	Quiz 1 (2 Hr)
6	Power distribution in residential and public buildings	6	2	2	0	2	-
7	Mid Term Exam						
8	Illumination technologies	6	2	2	0	2	-
9	Installation of electrical components	6	2	2	0	2	-
10	Electrical hazards, Inspection and testing, Electrical maintenance	8	2	2	0	2	Quiz 2 (2 Hr)
11	Design of emergency and earthing systems	6	2	2	0	2	-
12	Voltage drop calculations, short circuit calculations	6	2	2	0	2	-
13	Protection of distribution systems,	6	2	2	0	2	
14	LV switchgear: functions & selection	6	2	2	0	2	-
15	Power factor corrections, Active distribution systems, Revision	6	2	2	0	2	-
16	Final Term 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	Rahmani-Andebili, M. (2023). Power System Analysis: Practice Problems, Methods, and Solutions. Springer Nature.
	Other References	1) Tleis, N. D. (2020). Power Systems Modelling and Fault Analysis: Theory and Practice. Elsevier. 2) Gupta, B. R. (2019). Power System Analysis. S.K. Kataria and Sons.
	Electronic Sources	www.ekb.eg
	Learning Platforms	https://lms.nub.edu.eg/login/index.php
Supportive facilities & equipment for teaching and learning	Devices/Instruments	Data Show
	Supplies	White Board
	Electronic Programs	—
	Skill Labs/ Simulators	MATLAB Simulink Software Programs
	Virtual Labs	—
	Other (to be mentioned)	Lecture Hall and Laboratory Usage

Assoc. Prof. Dr. Amir Yassin
Course Coordinator

Dr. Mohamed Kourany Saad
Program Coordinator