Al-Ayen University / Technical Engineering College / Department of Medical Instrumentation Technical Engineering

Template of Course Specification
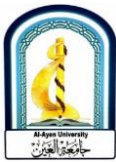
Name and Scientific title of the subject instructor: M.Sc. Amjed Baqer Jumaah

Name of Course: Electrical Engineering Fundamentals Lab

Course Specification

> **This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.**

1.	Teaching Institution	Al-Ayen University / Technical Engineering College
2.	University Department / Center	AL-Ayen University/Collage of Technical Engineering
3.	Course Title / Code	Electrical Engineering Fundamentals Lab
4.	Program(s) to which it contributes	Department of Computer engineering techniques
5.	Modes of Attendance offered	yearly
6.	Semester/Year	1st / 2022
7.	Number of hours tuition (total)	22h each week
8.	Date of production/revision of this Specification	29/3/2022
9.	Aims of the Course	
	1-Realization of basic parameters in electrical engineering and how to link these parameters.	
	2-To be capable of solving electrical circuits using different theorems.	
	3-To be capable of using dc theorems to solve ac circuits	
	4-Configuring 3 phase circuits ,vectors ,phase and total powers	
	5-To be capable of linking electricity to magnetism	

10.	**Learning Outcomes, Teaching, Learning and Assessment Methods**
A.	Knowledge and understanding A- Knowledge and Understanding A1.Learning the basic parameters of the electrical circuit A2.Learning the basic theorems to solve electrical circuits A3.Figuring out the best and suitable theorem to solve different circuits. A4.Learning the basic parameters in electromagnetic circuits. A5. Differentiation between dc and ac circuits. A6. Learning how to implement the theorems in 3 phase circuits.
B.	Subject-specific skills B. Subject-specific skills B1.Solving dc and ac circuits B2.Referring to mathematics to solve electrical circuits. B3.simulating electrical circuits to magnetic circuits.
C.	Assessment methods Quizzes, semester tests, Final tests, practical test.
D.	Thinking Skills C1.Planting creativity spirit to find out solutions for problems. C2.developping the capability of team work. C3.Developing the sensation of holding the burdens. C4. Encouraging the values of industriousness.
E.	Teaching and learning methods the laboratory.
F.	Assessment Methods Reactive assessment, semester tests, final tests.
G.	General and Transferable Skills (other skills relevant to employability and personal development) D1.Transforming the electrical circuit into a mathematical model D2.Calculations of electrical loads. D3.analogy of electrical circuits with magnetic circuits. D4.

11.	**Course Structure**				
Week	**Hours**	**ILOs**	**Unit/Module or Topic Title**	**Teaching Methods**	**Assessment Methods**
1.	3 h	understands the lesson	Color resistance	Practical	Tests
2.	3 h	understands the lesson	Ohms law	Practical	Tests
3.	3 h	understands the lesson	Series and Parallel connection	Practical	Tests
4.	3 h	understands the lesson	KVL & KCL	Practical	Tests
5.	3 h	understands the lesson	star - delta connection	Practical	Tests
6.	3 h	understands the lesson	Superposition theorem	Practical	Tests
7.	3 h	understands the lesson	Thevenin's theorem	Practical	Tests
8.	3 h	understands the lesson	Norton theorem	Practical	Tests
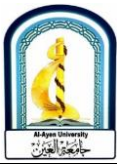
9.	3 h	understands the lesson	Impedance Element Characteristics	Practical	Tests
10.	3 h	understands the lesson	AC Maximum Power Transfer	Practical	Tests
11.	3 h	understands the lesson	Series RLC Circuits	Practical	Tests
12.	3 h	understands the lesson	Parallel RLC Circuits	Practical	Tests
13.	3 h	understands the lesson	L-C-R Series and parallel Resonance	Practical	Tests
14.	3 h	understands the lesson	Power-Factor Correction	Practical	Tests
15.					

12.	Infrastructure	
Required reading: ·**CORE TEXTS** ·**COURSE MATERIALS** · **OTHER**		
Special requirements (include for example workshops, periodicals, IT software, websites)		
Community-based facilities)include for example, guest Lectures, internship, field studies)		

13.	Admissions	
Pre-requisites		
Minimum number of students	100	
Maximum number of students	140	