Template of Course Specification

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

Name of Course: Electrical Engineering Principles 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 program 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 Principles Lab**
4.	**Program(s) to which it contributes**	**Department of Medical Instrumentation Technical Engineering**
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.Preparation of engineers applied in the field of engineering, electrical and electronic technology	
	2. Graduation of the request to be able to know the parts of different medical devices and the evolution of what happens in the techniques	
	3.Manages the networks of engineering and technical to operate and maintain medical devices	
	4. Prepare research and studies to improve and develop medical services	
	5.Askab demand scientific skill and diagnosis of the faults in medical devices 6. Develop proposals and alternatives for medical devices	

10.	**Learning Outcomes, Teaching, Learning and Assessment Methods**
A.	Knowledge and understanding A1. 1- Develop plans and programs of work especially in the maintenance of medical equipment A2.2 - Supervising the site on the implementation of the work A3.3 - Preparation of research and studies to improve the development of the work of medical devices A4. A4 - Participation in committees related to the activity of medical devices A5. A5 - Participate in the analysis of tenders for medical devices and alternative selection
B.	**Subject-specific skills** B1. Training of engineers and technicians on the operation and maintenance of medical devices B2 - Installation and operation of medical devices (supervision and implementation) B 3- Provide consultation in the field of medical devices
C.	**Assessment methods** **Daily evaluations- quarterly evaluations- finally evaluations- practical evaluations- presentation evaluations- attend daily- weekly reports**
D.	**Thinking Skills** C1. Submit scientific projects in the design of circuits for medical devices C2 - designed electronic board C3 - sets plans and ideas for the future, which is appropriate to the needs in the field of medical devices
E.	**Teaching and learning methods** **scientific laboratory- data show - seminars**
F.	**Assessment Methods** **Daily evaluations- quarterly evaluations- finally evaluations- practical evaluations- presentation evaluations- attend daily- weekly reports**
G.	**General and Transferable Skills (other skills relevant to employability and personal development)** D1.The graduate provides scientific and applied skills that enable him to diagnose the resulting malfunctions in medical devices D 2- the ability of the graduate to work electronic boards in the medical devices D 3- the ability of the graduate to train technical personnel in the field of medical devices D4 - Design of alternative electronic circuits

11.	Course Structure				
Week	**Hours**	**ILOs**	**Unit/Module or Topic Title**	**Teaching Methods**	**Assessment Methods**
1.	2 h	understands the lesson	Color resistance	Practical	test
2.	2 h	understands the lesson	Ohms law	Practical	test
3.	2 h	understands the lesson	Series and Parallel connection	Practical	test
4.	2 h	understands the lesson	KVL & KCL	Practical	test
5.	2 h	understands the lesson	star - delta connection	Practical	test
6.	2 h	understands the lesson	Superposition theorem	Practical	test
7.	2 h	understands the lesson	Thevenin's theorem	Practical	test
8.	2 h	understands the lesson	Norton theorem	Practical	test
9.	2 h	understands the lesson	Impedance Element Characteristics	Practical	test
10.	2 h	understands the lesson	AC Maximum Power Transfer	Practical	test
11.	2 h	understands the lesson	Series RLC Circuits	Practical	test
12.	2 h	understands the lesson	Parallel RLC Circuits	Practical	test
13.	2 h	understands the lesson	L-C-R Series and parallel Resonance	Practical	test
14.	2 h	understands the lesson	Power-Factor Correction	Practical	test
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	500