

Course Specification Template

1. General information about Instructor:

Name	Muntaser Shafiq Aldabe			Class Time & Office Hours				
Phone	Internal	1515	Day	SUN	MON	TUE	WED	THU
	External	-						
Mobile	0599031674		Class Time		12:30-2		12:30-2	
Instructor's E-mail	Muntaser.aldabe@yahoo.com		Class Room		B109		B109	
			Office Hours	10-11	11-12	10-11	11-12	10-11

2. General information about the Course

No	Requirements						
1	Course Title	Electric Circuits I					
2	Course code & Number	12110101					
3	Credit hours	Theo. (CH): 3			Practical (CH):		
4	Faculty	Engineering					
5	Department / Division that offers the course:	Electrical and Industrial Automation department					
6	Course type	Compulsory			Elective		
		Uni. <input type="checkbox"/>	Fac. <input type="checkbox"/>	Dep. <input checked="" type="checkbox"/>	Uni. <input type="checkbox"/>	Fac. <input type="checkbox"/>	Dep. <input type="checkbox"/>
7	Level and Semester	Second year / First Semester					
8	Prerequisite(s) – If any	General Physics I					
9	Co-requisite(s) – if any						
10	Program/programs for it/them the course is offered	Electrical , Automation, Communication					
11	Instruction Medium:	English <input checked="" type="checkbox"/>			Arabic <input type="checkbox"/>		

3. Course description:

This course will include the following topics: Basics of DC circuit elements, Circuit Analysis (Series, Parallel, and Compound), Circuits Laws (Ohms, Kirchhoff, Divider Rules and source Transformation), Network Analysis (Mesh, Nodal, Bridges Networks, and Δ -Y connection and conversion), Network Theorems (Superposition, Thevenin, Norton, and Maximum Power Transfer), Capacitors and Inductors Circuits and their properties, RC and RL circuits and their response, Series and Parallel RLC circuits and their response.

4. General Course Objectives

On successful completion of this course the student will be able to achieve the following objectives:

1. Define the basic elements of the dc circuits and their properties.
2. Identify the circuit connections like series, parallel, series-parallel and their Nodes, Branches, and Loops.
3. Recognize Ohms Law, Kirchhoff Laws, Voltage and current Divider Rules, and Source Transformation method.
4. Analyze Bridge Networks, Δ -Y connection and conversion.
5. Analyze the electric Networks using Mesh and Nodal approaches.
6. Recognize the most famous Network Theorems (Superposition, Thevenin, Norton, and Maximum Power Transfer).
7. Identify the Capacitors and Inductors Circuits and their properties.
8. Understanding the RC and RL circuits and their response.
9. Analyze the Series and Parallel RLC circuits and their response

5. Intended Learning Outcomes/ILO's (please specify the learning outcomes of the course as outlined below):

A) Knowledge and understanding

- a1) Recognize the Principles and electrical properties of electric circuit
- a2) Recognize D.C circuit architectures, and applications
- a3) Define characteristics and different applications of D.C. power supply.
- a4) Identify the differences between DC circuit and Ac circuit.

B) Intellectual/Cognitive skills

- b1) Analyze of the different types DC circuit.
- b2) Formulate equivalent circuit for any electric circuit
- b3) Employ the properties of different types of load circuit such as resistance only, resistance plus inductance (RL load), resistance plus inductance plus capacitance and their applications.

C) Subject specialization and practical skills

D) General and transferable skills

Be able to use outcomes A and B in afterwards courses such as Electronics, Measurements, and Electrical machines.

6. Topics covered and Calendar:

A. Theoretical parts

Number	Topics	Number of hours
1.	Basic components and Electric Circuits	3 hrs
2.	Voltage and Current Laws	3 hrs
3.	Voltage and Current Laws	3 hrs
4.	Basic Nodal and Mesh Analysis	3 hrs
5.	Basic Nodal and Mesh Analysis	3 hrs
6.	Review	3 hrs
7.	Useful Circuit Analysis Techniques	3 hrs
8.	Useful Circuit Analysis Techniques	3 hrs
9.	Useful Circuit Analysis Techniques	3 hrs
10.	Review	3 hrs
11.	Capacitors and Inductors	3 hrs
12.	Basic RL and RC Circuits	3 hrs
13.	Basic RL and RC Circuits	3 hrs
14.	Basic RL and RC Circuits	3 hrs
15.	The RLC Circuit	3 hrs

7. Student assessment methods based on ILO,s

No	Assessment method	Week	Mark	Percentage to overall mark
1.	First Exam	7 th week	30	30%
2.	Second Exam	11 th week	30	30%
3.	Mid-term Exam (if any)			
4.				
5.	Final Exam	16 th week	40	40%

8. References and other resources

Engineering Circuit Analysis , 6 th edition, W. Hayt , J. Kemmerly and S. Durbin, Mc Graw Hill.
A. Other references <ol style="list-style-type: none">1. Introductory Circuit Analysis, 10th edition, Robert L. Boylestad, Prentice Hall.2. Electric Circuits, 8th edition, J. Nilsson & S. Riedel, Prentice Hall.3. Circuit Analysis, 2nd edition, Robbins & Miller, Delmar.
B. Electronic resources, Websites related to the course <ol style="list-style-type: none">1.2.

Name & signature of Head of department/ program leader

Name: signature:Date:

Name & signature of Quality rep. in your faculty

Name: signature:Date:

Course Tutor's name and signature

Name: Muntaser Al-dabe signature:Date: