



Course Specification: Electric circuits ECE161



1. Basic Information

Program Title	Biomedical Engineering
Department offering the Program	Biomedical Engineering
Department Responsible for the Course	Electrical power Engineering
Course Code	ECE 161
Year/ Level	Level 100
Specialization	Major
Requirements	MTH012
Authorization data of course specification	

Teaching Hours	Lectures	Tutorial	Practical
	2	2	-

2. Course Aims:

No.	Aims
1	Apply knowledge of mathematics and engineering concepts to design a useful electric circuits.
2	Design and conduct electric circuits experiments using the appropriate engineering tools

3. Intended Learning Outcomes (ILOs):

A. Knowledge and Understanding:

No.	Knowledge and Understanding
A1	Understand principles and methodology needed to analyze electric circuits
A5	Use the appropriate methodologies of solving engineering problems, and circuits analysis

B. Intellectual Skills

No.	Intellectual Skills
B2	Select appropriate mathematical method to analyze electric circuits
B7	Solve electrical circuits problems, often on the basis of limited and possibly contradicting information.

C. Professional Skills

No.	Professional Skills
C1	Apply knowledge of circuit theories to solve electrical circuits.

D. General Skills

No.	General Skills
D1	Work as a team and independently, as appropriate.
D3	Communicate effectively.

4. Course Contents:

No.	Topics	Week
1	elements of electrical circuit	1-2
2	simple resistive circuits	3-4
3	analyze electrical circuit	5-6
4	switching between electric sources	7,9
5	circuit theories	10
6	Star delta conversion	11
7	resonance circuits	12-13
8	power and power factor	14

5. Teaching and Learning Methods:

No.	Teaching Method
1	Lectures
2	Tutorial sessions



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6. Teaching and Learning Methods for Disabled Students:

No.	Teaching Method	Reason
1	Extra Lectures	Help them to understand the lessons

7. Student Evaluation:

7.1 Student Evaluation Methods:

No.	Evaluation Method	ILOs
1	Mid Term Examination	A1,A5
2	Semester work	A1 - B1,B7 -C1 - D1, D3
3	Final Term Examination	A1,A5 -B1, B.7

7.2 Evaluation Schedule:

No.	Evaluation Method	Weeks
1	Mid Term Examination	8
2	Semester work	Every week
3	Final Term Examination	15

7.3 Weighting of Evaluations:

No.	Evaluation Method	Weights
1	Mid Term Examination	20%
2	Semester work	30%
3	Final Term Examination	50%
Total		100%

8. List of References

No.	Reference List
1	Class Note
2	Thomas L. Floyd, "Electric Circuits Fundamentals" 8th edition 2010
3	Charles Alexander and Matthew Sadiku, "Fundamentals of electric circuits," McGraw-Hill Education; 5 edition (2012)
4	Nilsson, James, Susan Riedell <i>Electric Circuits</i> . Addison-Wesley Longman Publishing Co., Inc., 10th edition, 2014.

9. Facilities Required for Teaching and Learning:

No.	Facility	No.	Facility
1	White Board	3	Sound System
2	Data Show System	4	Internet

10. Matrix of Knowledge and Skills of the Course:



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No.	Topic	Aims	Knowledge & Understanding	Intellectual Skills	Professional Skills	General Skills
1	elements of electrical circuit	1	A1			
2	simple resistive circuits	1,2	A1, A5	B7		D3
3	analyze electrical circuit	1	A1, A5	B1,B7	C1	
4	switching between electric sources	1	A1	B7	C1	D1
5	circuit theories	1	A1	B1	C1	D3
6	Star delta conversion	1	A1, A5			
7	resonance circuits	1,2	A1, A5	B7		D1
8	power and power factor	1	A1,A5	B1	C1	D3

Course Coordinator: Prof.Dr.

Head of Department: Assoc. Prof. Hossam Eldeen Salah

Date of Approval;