

Course Specifications

University: Benha University

Faculty: Benha Faculty of engineering

Course specifications

Programme(s) on which the course is given: Electrical Engineering technology Dep.

Major or minor element of programmes: Major

Department offering the programme: Mechanical Engineering technology Dep.

Department offering the course: Electrical Engineering technology Dep.

Academic year / Level: second year

Date of specification approval: 2009

A- Basic Information

Title: Electrical Engineering

Code: E 030

Credit Hours: N.A.

Lecture: 4

Tutorial: 1

Practical: 1

Total: 6

B- Professional Information

1 - Overall aims of course

Upon successful completion of this course, Students will become familiar with:

Circuit elements, DC circuit and net work theorem, linear circuits –circuit concepts- resistive circuits' op- amplifiers. Capacitance inductance ac circuits transient response -frequency response and filter semiconductors –diode circuit –transistor circuit and integrated circuit. Nonlinear electronic circuit –amplifier circuit, balanced 3-phasas circuit and Power calculation

2- Intended learning outcomes of course (ILOs)

a. Knowledge and understanding:

- Define electric circuits.
- Provide students experience in the application of knowledge acquired in the classroom, to enable productive solutions to practical electrical engineering problems.
- Describe linear circuits –circuit concepts- resistive circuits' op- amplifiers.
- Explain Semiconductors –diode circuit –transistor circuit and integrated circuit
- Explain Semiconductors –diode circuit –transistor circuit and integrated circuit

b. Intellectual skill

- Analyze of electric circuit ;
- conclude Basics of operational amplifier ;
- evaluate sinusoidal steady state analysis ;
- Apply Techniques of resistive circuits analysis ;
- Apply DC circuit and net work theorem.
- Analyze Capacitance inductance ac circuits transient response -frequency response and filter
- Interpret Balanced 3-phasas circuit and Power calculation
- Apply Sinusoidal steady state analysis.

c- Professional and practical skills

By the end of this course, the student should be able to:

- Diagnose Electric circuit elements.
- Design Nonlinear electronic circuit –amplifier circuit

d- General and transferable skills

By the end of this course, the student should be able to:

- d.1 Work cooperatively and effectively in a group
- d.2 Find information independently

3- Contents

Topic	No. of Hours	Lecture	Tutorial/ Practical
electric circuit elements	6	4	-/2
Techniques of resistive circuits analysis	4	2	-/2
DC circuit and net work theorem	8	4	-/4
Linear circuits –circuit concepts- resistive circuits’ op- amp.	8	3	1/4
Capacitance inductance ac circuits transient response -frequency response and filter	8	4	-/4
semiconductors	9	2	3/4
Nonlinear electronic circuit	5	2	3/-
3-phasas circuit and Power calculation	8	4	-/4
sinusoidal steady state analysis	5	3	2/-

4– Teaching and learning methods

- 4.1- Lectures
- 4.2- Tutorials
- 4.3- Practice in Laboratories
- 4.4- Internet collected information and Self-study projects

5- Student assessment methods

- 5-1 Written exams (Final and Midterm), assignments and quizzes to assess knowledge and understanding, solving problems skills and interpretation capabilities of physical phenomena.
- 5-2 Oral exams to assess the abilities of discussing physical concepts
- 5-3 Practical exam to assess measuring and professional skills

Assessment schedule

Quiz 1	Week No. 4
Midterm	Week No. 8
Quiz 2	Week No. 12
Oral and Practical exam.....		Week No. 14
Final written exam		Week No. 15

Weighting of assessments

Mid-term examination	12%
Final-term examination	60%
Oral and Practical examination	20%
Semester work	8%
Total	100%

6- List of references

- 6.1- Lecture notes
- 6.3- Recommended books
 - 1-Electric circuits JAMES W. NILSSON

7- Facilities required for teaching and learning

Lecture rooms – Tutorial section rooms – Experimental Labs - computers – Virtual simulation programs

Course coordinator:

Head of Department: Assoc. Prof. Ghada Amer

Date: