



COURSE SPECIFICATIONS (2010-2011)

Benha University

Faculty of Engineering at Shobra

Electrical Engineering Department

A- Basic Information

Course Title: Electronics (1) **Code:** EPE170
Lecture: 4 **Tutorial:** 2 **Practical:** **Total:** 6
Program on which the course is given: B.Sc. Electrical Engineering (Power)
Major or minor element of program: Major
Department offering the program: Electrical Engineering Department
Department offering the course: Electrical Engineering Department
Academic year / level: First Year / Second Semester
Date of specifications approval: 10/5/2006

B- Professional Information

1- Overall aims of course:

- study semiconductor basics using semi conductors in form of devices in systems as diodes, transistors and thyristors.
- Study applications of semiconductor in industrial.

2- Intended learning outcomes of course (ILOs)

By completion of the course, the student should be able to:

a- Knowledge and Understanding

- a.1) Concepts and theories of mathematics and sciences, appropriate to the discipline.
- a.2) Basics of information and communication technology (ICT).
- a.4) Principles of design including elements design, process and/or a system related to specific disciplines.
- a.5) Methodologies of solving engineering problems, data collection interpretation.



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b- Intellectual Skills

- b.2) Select appropriate solutions for engineering problems based on analytical thinking.
- b.3) Think in a creative and innovative way in problem solving and design.
- b.6) Investigate the failure of components, systems, and processes.

c- Professional and Practical Skills

- c.1) Apply knowledge of mathematics, science, information technology, design, business context and engineering practice to solve engineering problems.
- c.2) Professionally merge the engineering knowledge, understanding, and feedback to improve design, product and/or services.
- c.3) Create and/or re-design a process, component or system, and carry out specialized engineering designs.

d- General and Transferable Skills

- d.6) Effectively manage tasks, time, and resources.
- d.7) Search for information and engage in life-long self learning discipline.
- d.8) Acquire entrepreneurial skills.
- d.9) Refer to relevant literature

3- Contents

No.	Topic	No. of hours	ILO's	Teaching / learning methods and strategies	Assessment method
1	Semiconductors and diode applications	6	a1, a2, a4, a5, b2, b3, b6, c1, c2	Lectures, Class activity, homework	Assignments, Quizzes, Mid-term exam Final exam
2	Semiconductors and diode applications	6	a1, a2, a4, a5, b2, b3, b6, c1, c2	Lectures, Class activity, homework	Assignments, Quizzes, Mid-term exam Final exam
3	Special purpose diodes	6	a1, a2, a4, a5, b2, b3, b6, c1, c2, c3, d6, d7, d8, d9	Lectures, Class activity, homework	Assignments, Quizzes, Mid-term exam Final exam



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4	Bipolar junction transistor and transistor bias circuits	6	a1, a2, a4, a5, b2, b3, b6, c1, c2, c3, d6, d7, d8, d9	Lectures, Class activity, homework	Assignments, Quizzes, Mid-term exam Final exam
5	Bipolar junction transistor and transistor bias circuits	6	a1, a2, a4, a5, b2, b3, b6, c1, c2, c3, d6, d7, d8, d9	Lectures, Class activity, homework	Assignments, Quizzes, Mid-term exam Final exam
6	Small signal bipolar amplifier	6	a1, a2, a4, a5, b2, b3, b6, c1, c2, c3, d6, d7, d8, d9	Lectures, Class activity, homework	Assignments, Quizzes, Mid-term exam Final exam
7	Small signal bipolar amplifier	6	a1, a2, a4, a5, b2, b3, b6, c1, c2, c3, d6, d7, d8, d9	Lectures, Class activity, homework	Assignments, Quizzes, Mid-term exam Final exam
8	Mid-Term Exam				
9	Field effect transistor and biasing and Small signal FET amplifier	6	a1, a2, a4, a5, b2, b3, b6, c1, c2, c3, d6, d7, d8, d9	Lectures, Class activity, homework	Assignments, Quizzes, Mid-term exam Final exam
10	Field effect transistor and biasing and Small signal FET amplifier	6	a1, a2, a4, a5, b2, b3, b6, c1, c2, c3, d6, d7, d8, d9	Lectures, Class activity, homework	Assignments, Quizzes, Mid-term exam Final exam
11	Thyristor and other devices	6	a1, a2, a4, a5, b2, b3, b6, c1, c2, c3, d6, d7, d8, d9	Lectures, Class activity, homework	Assignments, Quizzes, Mid-term exam Final exam
12	Thyristor and other devices	6	a1, a2, a4, a5, b2, b3, b6, c1, c2, c3, d6, d7, d8, d9	Lectures, Class activity, homework	Assignments, Quizzes, Mid-term exam Final exam
13	using software to solve problems	6	a1, a2, a4, a5, b2, b3, b6, c1, c2, c3, d6, d7, d8, d9	Lectures, Class activity, homework	Assignments, Quizzes, Mid-term exam Final exam
14	using software to solve problems	6	a1, a2, a4, a5, b2, b3,	Lectures, Class activity,	Assignments, Quizzes, Mid-



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		b6, c1, c2, c3, d6, d7, d8, d9	homework	term exam Final exam
15	Final Exam			
16				

4- Teaching and Learning Methods

Lectures
Class activity
Assignments / homework

5- Student Assessment Methods

Assignments to assess knowledge and intellectual skills.
Mid-term exam to assess knowledge, intellectual, professional and general skills.
Oral exam to assess knowledge and intellectual skills.
Final exam to assess knowledge, intellectual, professional and general skills.

Assessment Schedule

Assessment 1 on weeks 2, 5, 9, 11
Assessment 2 Quizzes on weeks 4, 6, 10, 12
Assessment 3 Mid-term exam on week 8
Assessment 4 Oral Exam on week 14
Assessment 5 Final exam on week 15

Weighting of Assessments

05% Home assignments
05% Quizzes
10% Mid-term examination
20% Oral examination
60% Final-term examination
100% Total



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6- List of References

Course notes

Essential books

Recommended books

Millman "Electronic Tech".

Sedra " Micro electronic circuits"

open research from web

7- Facilities required for teaching and learning

Laboratory

Course coordinator: Dr. Aly M. Gomaa

Course instructor: Dr. Aly M. Gomaa

Head of Department: Prof. Dr. Mousa Abd-Allah

Date 1/1/2012

وحدة ضمان الجودة