



Model No.12
Course Specifications : Test 2
2014-2015

University : Benha University

Faculty : Faculty of Engineering at Shoubra

Department : Electrical Engineering

1- Course Data

Course Code : ECE 223

Course Title : Test 2

Study Year : 2nd

Specialization :

Teaching Hours:

Lecture :

Tutorial :

Practical : 4

2- Course Aim

For students undertaking this course, the aims are to:

2.1- Apply labs for semiconductor devices

3- Intended Learning Outcomes of Course (ILOS)

a- Knowledge and Understanding

On completing this course, students will be able to:

a-1 Demonstrate characteristics and applications of silicon and germanium diodes.(a4)

a-2 Demonstrate characteristics and applications of zener diodes, LEDs and BJT.(a4)

a-3 Studying principles of analysis and design of diodes and special diodes circuits.(a19)

b- Intellectual Skills

At the end of this course, the students will be able to:

b- 1 - Select appropriate solutions for rectifier applications based on design of electronic circuits. (b-3)

b- 2 – Troubleshoot diode circuits. (b-3)

b- 3 - Think in an innovative way in designing diode and BJT circuits.(b-4)

c- Professional Skills

On completing this course, the students are expected to be able to:

c- 1 - Using laboratory training kits to solve engineering problems. (c-1)

c- 2 - Use oscilloscope to obtain correct results. (c-16)

c- 3 -Identify appropriate specifications for diodes, special diodes and BJTs. (c-18)

c- 4 - Use oscilloscope and digital voltmeters to ensure system performance and properties. (c-19)

c-5 - Apply safe systems at work and observe the appropriate steps to manage risks. (c-8)

d- General Skills

At the end of this course, the students will be able to:

d- 1 - Communicate effectively (d-3)

d- 2 - Effectively manage tasks, time, and resources. (d-6)

d- 3 - Acquire entrepreneurial skills. (d-8)

d- 4 - Share ideas and communicate with others according to the rules of professional ethics. (d-11)

4- Course Contents

| No. | Topics | No of Hours |
|-----|--|-------------|
| 1 | How to use (oscilloscope), resonance circuits | 8 |
| 2 | Troubleshooting organizer (Zenner), the use of diode as a source | 8 |
| 3 | Optical electronics devices, meters, speakers | 8 |
| 4 | Integrated circuits organizations | 8 |
| 5 | Transistor of type (JEFT) | 8 |
| 6 | Thyristor applications | 8 |

5- Teaching and Learning Methods

5.1- Practical training / laboratory

6- Teaching and Learning Methods of Disables

6.1- Nothing.

7- Student Assessment

a- Student Assessment Methods

| | |
|---|---|
| 1 | Assignments to assess knowledge and intellectual skills. |
| 2 | Mid-term exam to assess knowledge and intellectual skills. |
| 3 | Oral exam to assess knowledge, intellectual, professional and general skills. |
| 4 | Final exam to assess knowledge and intellectual skills. |

b- Assessment Schedule

| No. | Assessment | Week |
|-----|------------------|--------------|
| 1 | Assessment 1 on | 2, 5, 9, 11 |
| 2 | Quizzes on | 4, 6, 10, 12 |
| 3 | Mid-term exam on | 8 |
| 4 | Oral Exam on | 14 |
| 5 | Final exam on | 15 |

c- Weighting of Assessments

| Assessment | Weight |
|---------------------------|--------|
| Mid_Term Examination | 15 % |
| Final_Term Examination | 50 % |
| Oral Examination | 0 % |
| Practical Examination | 20 % |
| Semester work | 10 % |
| Other types of assessment | 5% |
| Total | 100 % |

8- List of References

a- Course Notes

1- Course notes and experiments prepared by instructor.

b- Recommended Books

1- Clyde N. Herrick, Melchior S. Estrada, "Experiments in Semiconductor Application and Design", John Wiley Inc., 1963

- Course Instructor :

- 1 – Assoc. Prof. AbdulwahabKamel Al Sammak
- 2 - Dr. Mostafa Fouda

- Head of Department : Prof. Dr. Sayed Abo-Elsood Ward

Model No.11A

Course Specifications : Test 2

University : Benha university

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Department : Electrical Engineering

Matrix of Knowledge and Skills of the course

| No . | Topics | week | Basic Knowledge | Intellectual Skills | Professional Skills | General Skills |
|------|--|------|-----------------|---------------------|---------------------|----------------|
| 1 | How to use (oscilloscope), resonance circuits, | 1,7 | a1 | | | d1 |
| 2 | Troubleshooting organizer (Zenner), the use of diode as a source | 2,9 | a1,a2,a3 | b1, b2,b3 | c1, c2,c5 | d1 |
| 3 | Optical electronics devices, meters, speakers | 3,10 | a1,a2 | b1, b3 | c1, c2, c3 | d1 |
| 4 | Integrated circuits organizations | 4,11 | a1,a3 | b1, b3 | c2, c3, c4 | d1,d2,d3 |
| 5 | Transistor of type (JEFT) | 5,12 | a1,a2 | b1, b3 | c1, c3, c4,c5 | d1 |
| 6 | Thyristor applications | 6,13 | a1 | b1, b2,b3 | c1, c2, c4,c5 | d1 |
| 7 | Mid-term exam | 8 | a1 | b1, b3 | | d1 |
| 8 | Oral-Exam | 14 | a1 | b1, b3 | c1, c2, c3, c4 | d1,d2,d3,d4 |
| 9 | Final Exam | 15 | a1 | b1, b3 | | |



Faculty of
Engineering at
Shoubra

Model No.11A
Course Specifications : Test 2

Matrix of course content and ILO's

Course Title:Advanced Test 2 **Code:** ECE223

Lecture: - Tutorial :-Practical:- 4 Total: 4

Program on which the course is given:B.Sc. Electrical Engineering (Electronics and Communications)

Major or minor element of program: N.A.

Department offering the program: Electrical Engineering Department

Department offering the course: Electrical Engineering Department

Academic year / level: 2014-2015 second semester

Date of specifications approval:20/6/2010

| Course content | a1 | a2 | a3 | b1 | b2 | b3 | c1 | c2 | c3 | c4 | c5 | d1 | d2 | d3 | d4 |
|--|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| How to use (oscilloscope), resonance circuits, | ✓ | | | | | | | | | | | ✓ | | | |
| Troubleshooting organizer (Zenner), the use of diode as a source | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | ✓ | | | |
| Optical electronics devices, meters, speakers | ✓ | ✓ | | ✓ | ✓ | | ✓ | ✓ | ✓ | | | ✓ | | | |
| Integrated circuits organizations | ✓ | | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | |
| Transistor of type (JEFT) | ✓ | ✓ | | ✓ | ✓ | | ✓ | | ✓ | ✓ | ✓ | ✓ | | | |
| Thyristor applications | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | ✓ | | | |



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| Course aims | a1 | a2 | a3 | b1 | b2 | b3 | c1 | c2 | c3 | c4 | c5 | d1 | d2 | d3 | d4 |
|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Applicable labs for semiconductor devices | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

- Course Instructor :

1- Assoc. Prof. AbdulwahabKamel Al_ Sammak

2 - Dr. Mostafa Fouda

- Head of Department:Prof. Dr. Sayed Abo-Elsood Ward