Model No.12
Course Specifications : Test 1

University : Benha university

Faculty : Faculty of Engineering at Shoubra

Department : Electrical Engineering Department

1- Course Data

Course Code : ECE 123   Course Title : Test 1   Study Year : First Year
Specialization :   All Academic Programs
Teaching Hours:
    Lecture :   Tutorial : ----   Practical : 4

2- Course Aim

For students undertaking this course, the aims are to:

2.1- Demonstrate the different characteristics of the basic circuits components

2.2- Gain experience with some of the measuring instruments.

2.3- Demonstrate and practice the C++.

3- Intended Learning Outcomes of Course (ILOS)

a- Knowledge and Understanding

On completing this course, students will be able to:

a- 1–Define Basics of circuits and computer programming. (a3)

a- 2 - Illustrate basic circuits components and C++ programming. (a16)

a- 3 - Describe principles of analyzing and design of RL, RC and RLC circuits.(a19)

b- Intellectual Skills

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

b- 1 - Select appropriate computer-based methods for analyzing circuits problems.(b2)

b- 2 - Think in a creative and innovative way in design of phase shift circuits. (b4)

b- 3 - Assess and evaluate the characteristics of RL, RC and RLC circuits.(b6)

b- 4 - Select and appraise appropriate ICT tools to C++ programming. (b9)

b- 5 - Plan, conduct and write a report on C++ project or assignment. (b15)

c- Professional Skills

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

c- 1 - Use computational facilities and techniques, measuring instruments, workshops and laboratories equipment to design electrical circuits experiments. (c5)

c- 2 - Use a wide range of analytical tools, techniques, and software packages pertaining to test and develop required C++ programs. (c6)

c- 3 - Prepare and present technical reports on circuits and programming. (c12)

c- 4 - Use appropriate mathematical methods or IT tools for analyzing basic electric circuits. (c13)

c- 5- Use relevant laboratory equipment and analyze the experiment results correctly.(c16)

C-6) Apply safe systems at experiments in Labs 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. (d3)

d- 2 - Demonstrate efficient IT capabilities. (d4)

d- 3 - Write technical reports and presentation.(d10)

d- 4- Develop skills related to creative and critical thinking as well as problem solving.(d12)

4- Course Contents

No.	Topics	No. of hours
1	General overview and preparation	4
2	Ohm`s law in AC circuits	4
3	Capacitors	4
4	Phase shift of RC Elements	4
5	Inductors	4
6	Phase shift of RL elements	4
7	Resonance and Oscillators	4
8	C++	20

5- Teaching and Learning Methods

5.1- Practical training / laboratory

5.2- Class Activity

5.3- Assignments / homework

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	Quiz to assess knowledge and intellectualskills.
3	Mid-term exam to assess knowledge and intellectual skills.
4	Oral exam to assess knowledge, intellectual skills,professional and general skills.
5	Final exam to assess knowledge and intellectual skills.

b- Assessment Schedule

No.	Assessment	Week
1	Assessment on	all weeks
2	Quizzes on	3
3	Mid-term exam on	8
4	Oral Exam on	14
5	Final exam on	15

c- Weighting of Assessments

Assessment	Weight
Midterm Examination	20 %
Final Term Examination	50 %

Oral Examination	0 %
Practical Examination	20 %
Semester work	10 %
Other types of assessment	0 %
Total	100 %

8- List of References

a- Course Notes

1- Course notes prepared by instructor Dr Mazen Selim for the programming part.

b- Books

1- ELO Train Kit Course for Electronics Part

- Course Coordinator :   Assoc. Prof. Dr. Mohamed Tarek Elewa

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

University : Benha university

Faculty : Faculty of Engineering at Shoubra

Department : Electrical Engineering Department

Matrix of Knowledge and Skills of the course

No.	Topics	week	Basic Knowledge	Intellectual Skills	Professional Skills	General Skills
1	General overview and preparation	1	a3	b5	c1, c3, c5	d1,d3
2	Ohm`s law in AC circuits	2	a3	b2,b3,b5	c1, c3, c5	d1,d3,d4
3	Capacitors	3	a3	b3,b5	c1, c3, c5,C6	d1,d3
4	Phase shift of RC Elements	4		b2,b5	c1, c3, c5	d1,d3,d4
5	Inductors	5	a3	b3,b5	c1, c3, c5	d1,d3
6	Phase shift of RL elements	6	a3	b2,b5	c1, c3, c5,C6	d1,d3,d4
7	Resonance and Oscillators	7	a3	b2,b3,b5	c1, c3, c5	d1,d3,d4
8	Mid term exam	8	a1,a2,a3	b1, b2,b3,b4		
9	C++	9,10,11,12,13	a1,a2	b1, b2,b4,b5	c2,c4	d1,d2,d3
10	Oral exam	14	a1,a2,a3	b1, b2,b4		
11	Final exam	15	a1,a2,a3	b1, b2,b4		

Matrix of course content and ILO's

Course Title: Test1   **Code**: ECE123

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

Program on which the course is given: B.Sc. Electrical Engineering (Communications)
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**Semester2012-2013
Date of specifications approval: 20/6/2010

Course content	a1	a2	a3	b1	b2	b3	b4	b5	c1	c2	c3	c4	c5	C6	d1	d2	d3	d4
General overview and preparation			✓					✓	✓		✓		✓		✓		✓	
Ohm`s law in AC circuits			✓		✓	✓		✓	✓		✓		✓		✓		✓	✓
Capacitors			✓			✓		✓	✓		✓		✓	✓	✓		✓	
Phase shift of RC Elements			✓		✓			✓	✓		✓		✓		✓		✓	✓
Inductors			✓			✓		✓	✓		✓		✓		✓		✓	
Phase shift of RL elements			✓		✓			✓	✓		✓		✓	✓	✓		✓	✓
Resonance and Oscillators			✓		✓	✓	✓		✓		✓		✓		✓		✓	✓
C++	✓	✓		✓	✓		✓	✓		✓		✓			✓	✓	✓	

Matrix of course aims and ILO's

Course Title: Test1   **Code**: ECE123

Lecture: -   **Tutorial**:-   **Practical**: 4

     Total:4

Program on which the course is given: B.Sc. Electrical Engineering (Communications)
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 2012-2013
Date of specifications approval: 20/6/2010

Course aims	a1	a2	a3	b1	b2	b3	b4	b5	c1	c2	c3	c4	C6	c5	d1	d2	d3	d4
Measure the different characteristics of the basic circuits' components.		✓	✓			✓		✓	✓		✓			✓			✓	✓
Recognize the measuring instruments.		✓	✓			✓		✓	✓		✓		✓	✓				
Demonstrate and practice the C++.	✓	✓		✓	✓		✓	✓	✓	✓	✓	✓			✓	✓	✓	

Course coordinator: Assoc. Prof. Dr. Mohamed TarekElewa

Course instructors: 1- Dr. Michael Nasief.

     2- Dr. Mostafa Fouda.

     3- Dr. Shimaa Ibrahim.

Head of department: **Prof. Dr. Sayed Abo-Elsood Ward**