Course specifications

Programme(s) on which the course is given B.Sc. of Pure Mathematics and Computer Scienc e, Physics and computer science

Major or minor element of programs Major

Department offering the program Mathematics

Department offering the course Mathematics

Academic year / Level Second level (2) Semester

Date of specification revision September 2012

Date of specification approval September 2012

A- Basic Information

Title: Introduction to Computer Systems **Code: M2312**

Credit Hours: 3 **Total: 3 hr.**

Lecture: 2 **Tutorial: -** **Practical: 2** **Other: -**

B- Professional Information

1 – Overall aims of course

The aim of this course is the student learns a boolean algebra and its applications to logic design of computer systems.

2 – Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

The student should be able to;

a1- Understand conceptes of boolean algerbra, and logical operators.

a2- Have the knowledge about the combinational and sequantional logic.

b- Intellectual skills

The student should be able to;

b1- Set a program of exercises according to the type of the course.

b2- Classify the topics of the course into groups according to their application.

b3- Differentiate between the different methods introduced in the course for suitable use in dealing with problems in mathematics, computer science, and engineering.

c- Professional and practical skills

The student should be able to;

c1- Collect the electrical gates like adders based on the tools he learned in the course.

c2- Weight the outcomes of the course through its use in practical application in different scientific fields.

d- General and transferable skills

The student should be able to

d1- design circuits using algebraic simplification taught in the course.

d2- Deal with Boolean algebra related to the topics covered in the course.

d3- Provide an extend and modification of the methods of the course for more complicated problems.

3- Contents

Topic	No. of hours	Lecture	Tutorial/ Practical
• Logic States • Number Systems • Data Representation • Boolean Algebra	6	2	2
• Basic Logical Operations • Gates and Truth	9	3	3

tables • Combinatorial Logic			
• Simplifications of Circuts • K-Map Simplification • Algebric Simplification	9	3	3
• Adder • Subtractors • Multiplexer • Encoders and Decoders	9	3	3
• Sequential Logic • MSI • Filp Flop • Analog to digital conversion	9	3	3

4– Teaching and learning methods

4.1- Lectures

4.2- Working on hand in assignments

4.3- Attending practical classes

5- Student assessment methods

5.1 Mid term written exam to assess understanding competencies

5.2 Mid term practical Exam to assess programming skills

5.3 Oral Exam to assess attendance and interesting.

5.4 Semester hand in assignments to assess understanding professionalism.

5.5 Final lab exam to assess a whole lab skills

5.6 Final term written Exam to assess comprehension.

Assessment schedule

Assessment 1	**Mid term + practical**	**Week 7**
Assessment 2	**semester activities**	**Week 5 and 8**
Assessment 3	**Final term oral exam + lab**	**Week 13**
Assessment 4	**final term written exam**	**Week 14**

Weighting of assessments

Mid-Term Examination
20%
Semester Work (homework assignments + oral tests)
20 %
Other types of assessment
00%
Final-term written Examination
60%
Total
100%

Any formative only assessments

6- List of references

6.1- Course notes

Collected and prepared notes that cover the main topics in the course content

6.2- Essential books (text books)

Elementary text books under the title: Digital Logic and Computer Design*: Morris Mano*

6.3- Recommended books :

6.4- Periodicals, Web sites, … etc

Non.

7- Facilities required for teaching and learning

Lecture: PC's - packages for ready made scientific programs. - Data Show
Lab: Advanced lab contains Java Creator package and JDK 1.4.0

Course coordinator: Dr.Mohamed Amin

Head of Department: Prof. Dr. Mohamed A. Ramadan
Date: / /