DIGITAL LOGIC DESIGN2 COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and   demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	University of Baghdad/ College of Science for Women
2. University Department/Centre	Computer Science Department
3. Course title/code	Digital Logic Design 2/113 CLD2
4. Programme(s) to which it contributes	Computer Science
5. Modes of Attendance offered	Physical Attendance
6. Semester/Year	First Year/ Second Semester

7. Number of hours tuition (total)	60 total (30 theoretical, 30 practical)
8. Date of production/revision of this specification	23/6/2016

9. Aims of the Course

This course aims to enable the student to know the design of combinational circuits such as Adder – subtractor circuits, Comparators, Decoder and Encoder, Multiplexer and Demultiplexer circuits, analysis and design of sequential circuits such as flip-flop circuits, Resistors and counters.

10· Learning Outcomes, Teaching ,Learning and Assessment Method

I-   Knowledge and Understanding
 A1. Identify the combinational circuits such as Adder – subtractor circuits.

 A2. Identify the Decoder and Encoder circuits.

 A3. Identify the Comparator, Multiplexer and Demultiplexer circuits.

 A4. Identify the analysis sequential circuits such as flip-flop circuits and
  Registers.

 A5. Identify the types of counters.

 B- Subject-specific skills

 B1. Ability to design Adder and Subtractor circuits.

 B2. Knowledge of designing encoder and decoder circuits and use it to design
  other circuits.

B3. Knowledge the Comparator, Multiplexer, Demultiplexer and   places of use.

B4. Learn how to design an asynchronous and synchronous counters.

Teaching and Learning Methods

• Education: provide lectures and printed sources from the modern, diverse and rich sources including examples

• Education: Harnessing smart blackboard to the goal of teaching students and explain the steps the solution and extraction results

• Education: resolving some questions, with intent to contain mistakes and make the students extracted error

• Learning: asking questions and inquiries and making the student turn into a teaching explanation and solution on the blackboard at that point, brainstorming method

• Learning: questions directly and consequently all students to learn the extent of interaction and the rest to be paid attention to

• Learning: Each specific group and explain its interaction between students with questions and answers and provide an environment that enables the student to lecture management or debate

Assessment methods
• Quizzes (quiz) semi-weekly • Reporting and in the form of aggregates by a report for each set and presented over students • Questions sudden and overlapping put up with to explain Article • laboratory tests on the computer and is written to enable the student to the solution without a computer • monthly and quarterly tests
C. Thinking Skills C1-providing range solutions to the same problem and discussed both individually and determine the appropriate method of solution to the problem at hand with a stand on the disadvantages of the rest of the solutions C2- put forward solutions contain inaccuracies and identifying these mistakes After discussion and processed C3-oral exceptional questions that need exceptional answers where heavyweight grades are assigned and some tipoff grades also provides C4- choose the most appropriate algorithm used to manipulate the image checking out the image descriptions

Teaching and Learning Methods
Discussions that arise during the time of lecture, and an attempt to involve the largest possible number of students in the conversations and discussion, and direct the discussions to be objectively purpose.
Assessment methods
• Oral evaluated by involving students in discussions • Quizzes (quiz) • laboratory tests on the computer and is written • exams monthly and quarterly

D. General and Transferable Skills (other skills relevant to employability and personal development)

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D1- distribution of specific topics for each group of students to prepare research reports from the World Wide Web, the sources or the library and drafted in accordance with the basis of the approved formulation research.

D2-giving leadership debate administration, however, the group discussion and enable them to drive and manage the dialogue

D3- alert on errors in the answers to the oral and discuss them to learn their mistake.

D4- alert on errors in the answers of students in the written exams to clarify to the student.

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
١	٢		Half adder and full adder, different logic circuit design	According to point 10 hereinabove and on demand	According to point 10 hereinabove and on demand
٢	٢		Half Subtractor and full subtractor, different logic circuit	According to point 10 hereinabove and on demand	According to point 10 hereinabove and on demand
٣	٢		4-bits BPA and, different logic circuit design using 4-bits BPA	According to point 10 hereinabove and on demand	According to point 10 hereinabove and on demand
٤	٢		1-bit, 2-bits, and 4-bits magnitude comparator, different	According to point 10 hereinabove and on demand	According to point 10 hereinabove and on demand
٥	٢		Logic circuit design using SSI and MSI	According to point 10 hereinabove and on demand	According to point 10 hereinabove and on demand

٦	٢		2, 3, 4 variables decoders	According to point 10 hereinabove and on demand	According to point 10 hereinabove and on demand
٧	٢		Function implementation using decoder	According to point 10 hereinabove and on demand	According to point 10 hereinabove and on demand
٨	٢		Encoders	According to point 10 hereinabove and on demand	According to point 10 hereinabove and on demand
٩	٢		2, 3, 4 variables multiplexer	According to point 10 hereinabove and on demand	According to point 10 hereinabove and on demand
١٠	٢		Function implementation using multiplexer	According to point 10 hereinabove and on demand	According to point 10 hereinabove and on demand
١١	٢		De-multiplexer	According to point 10 hereinabove	According to point 10 hereinabove and on demand

				and on demand	
١٢	٢		Flip-flops	According to point 10 hereinabove and on demand	According to point 10 hereinabove and on demand
١٣	٢		Asynchronous counters	According to point 10 hereinabove and on demand	According to point 10 hereinabove and on demand
١٤	٢		Synchronous counter	According to point 10 hereinabove and on demand	According to point 10 hereinabove and on demand
١٥	٢		Examination		

12. Infrastructure

Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	1-Digital Design, 4th Edition, by M. Morris Mano. Prentice-Hall, Inc. 2006 2-Logic Design ,Digital Principles and Application", Malvino, 2000 3-"Introduction to Logic Design" (2nd edition), Sajjan G. Shiva, 2007

Special requirements (include for example workshops, periodicals, IT software, websites)	NI Multisim software
Community-based facilities (include for example, guest Lectures , internship , field studies)	

13. Admissions	
Pre-requisites	
Minimum number of students	Subject to classroom size, 20 student as minimum
Maximum number of students	Subject to classroom size, maximum 30 students