جامعة المجمعة
Majmaah University

Course Specifications

Muharram 1437 H

Institution:	College of Engineering
Academic Department :	Electrical Engineering
Programme :	Undergraduate
Course :	Logic Design
Course Coordinator :	Dr. Tawfeeq Alkanhal
Programme Coordinator :	Dr. Abdullah Almuhaisen
Course Specification Approved Date :	22/ 3/ 1436 H

This form compatible with NCAAA 2013 Edition

A. Course Identification and General Information

1 - Course title : Logic Design	Course Code: EE 208
2. Credit hours : (3)	
3 - Program(s) in which the course is offered:	Electrical Engineering
4 – Course Language : English	
5 - Name of faculty member responsible for the course:	Dr.Tawfeeq Alkanhal
6 - Level/year at which this course is offered :	Fall Semester, Freshman Year
7 - Pre-requisites for this course (if any) : • No	
8 - Co-requisites for this course (if any) : • Logic Design Lab	
9 - Location if not on main campus : (Main Campus)	

10 - Mode of Instruction (mark all that apply)

A - Traditional classroom	Y	What percentage?	100 %
B - Blended (traditional and online)		What percentage?	..... %
D - e-learning		What percentage?	..... %
E - Correspondence		What percentage?	..... %
F - Other		What percentage?	..... %

Comments :

.....

B Objectives

What is the main purpose for this course?

The purpose of this course is to provide the students with:

- Well knowledge of Logic Design concepts and ideas.
- Understanding of number system
- Ability to construct and analyze different logic gate circuits
- Introduction to sequential clocked synchronous circuits
- Students should get ready and prepare to work in the field of electronics operation and maintenance.

• Specially focus on the topics and concepts taught as co-requisite in logic design lab, prepare students to work efficiently for their graduation project.
Briefly describe any plans for developing and improving the course that are being implemented : .....

C. Course Description

1. Topics to be Covered

List of Topics	No. of Weeks	Contact Hours
Introduction to course syllabus and distribution of marks	1	4
Introduction to Number System, Binary, Octal, Decimal and Hexadecimal numbers and base conversions, Complements, binary Codes	2	8
Boolean Functions, Basic Logic Gates (OR, AND & NOT, NOR, NAND XOR & XNOR Gates)	2	8
Adder & Subtractor	1	4
Decoders & Encoders	2	8
Multiplexers	1	4
Code Converters	1	4
Latches	1	4
Flip-Flops	1	4
Registers & Shift Registers	2	8
Synchronous & Asynchronous Counters	1	4

2. Course components (total contact hours and credits per semester):

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	45	15	0	0	0	60

Credit	3	0	0	0	0	3

3. Additional private study/learning hours expected for students per week. **2**

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	The ability to recall, understand, and present information, including knowledge of specific facts, knowledge of concepts, principles and theories, and knowledge of procedures	Lecture, debate, small group work, whole group and small group discussion, research activities, lab demonstrations, projects, debates, role playing, case studies, memorization and individual presentation.	Standardized exams, Seminars and Assignments
1.2	**.....**	.....	.....
1.3	**.....**	.....	.....
1.4	**.....**	.....	.....
1.5	**.....**	.....	.....

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.6	**.....**	.....	.....
2.0	**Cognitive Skills**		
2.1	An ability to design a system, component, or process to meet desired needs within realistic constraints	Lecture, small group work, , research activities, lab demonstrations, projects and individual presentation	Reports and presentations
2.2	An ability to identify, formulate, and solve engineering problems	Lecture, small group work, , research activities, lab demonstrations, projects and individual presentation	Standardized exams, oral exams, micro projects
2.3	**.....**	.....	.....
2.4	**.....**	.....	.....
2.5	**.....**	.....	.....
2.6	**.....**	.....	.....
3.0	**Interpersonal Skills & Responsibility**		
3.1	**.....**	.....	.....
3.2	**.....**	.....	.....
3.3	**.....**	.....	.....
3.4	**.....**	.....	.....
3.5	**.....**	.....	.....
3.6	**.....**	.....	.....
4.0	**Communication, Information Technology, Numerical**		
4.1	An ability to apply knowledge of mathematics, science, and engineering	Lecture, research activities, lab demonstrations, projects, case studies, memorization	Standardized exams, oral exams, micro projects

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
		and individual presentation	
4.2	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.	Lecture, research activities, lab demonstrations, projects, case studies, memorization and individual presentation	Exams, quizzes and reports
4.3	**.....**	.....	.....
4.4	**.....**	.....	.....
4.5	**.....**	.....	.....
4.6	**.....**	.....	.....
5.0	**Psychomotor**		
5.1	**.....**	.....	.....
5.2	**.....**	.....	.....
5.3	**.....**	.....	.....
5.4	**.....**	.....	.....
5.5	**.....**	.....	.....
5.6	**.....**	.....	.....

5. Schedule of Assessment Tasks for Students During the Semester:

	Assessment task	Week Due	Proportion of Total Assessment
1	**First Exam**	7th	20%
2	**Second Exam**	13th	20%
3	**Final Exam**	15th	40%
4	**Group Project**	13th	10%
5	**Quizzes and Homework**	During semester	10%

6	**.....**	.....	.....
7	**.....**	.....	.....
8	**.....**	.....	.....

D. Student Academic Counseling and Support

Available in office hours, 3 hours per week.

E. Learning Resources

1. List Required Textbooks : • Digital Design, M. Morris Mano, Michael D. Ciletti , 4th Edition", Prentice Hall
2. List Essential References Materials : • John Passafiume and Michael Douglas, "Digital Logic Design: Tutorial and Laboratory Exercises", Wiley, 2008
3. List Recommended Textbooks and Reference Material : • Digital Design, M. Morris Mano, Michael D. Ciletti , 4th Edition", Prentice Hall
4. List Electronic Materials : • ..... • ..... • .....
5. Other learning material : • ..... • ..... • .....

F. Facilities Required

1. Accommodation • The laboratory should be facilitated with 20 students and no more than 2 students for each experiment.
2. Computing resources • ..... • ..... • .....
3. Other resources

- .....
- .....
- .....

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching:

- Completion course evaluation questionnaire,
- Classroom observations to measure student behavior through how well the student groups are interacting in-class activity and how well the in-class activity went..

2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor :

- .....
- .....
- .....

3 Processes for Improvement of Teaching :

1. Plan: The instructor will develop a strategy for teaching.
2. Do: The strategy will be implemented for one semester.
3. Study: The experiences of the students will be collected through a survey.
4. Act: Effective teaching strategies will be implemented and revised as more experiences are gained.

4. Processes for Verifying Standards of Student Achievement

- Check marking of a sample of examination papers.

5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement :

- Continuous improvement is a circular process, encompassing student assessment, course planning and design, implementation, evaluation, and revision.
- A feedback from all relevant assessment tools must be considered in the continuous process of course objectives refinement and assessment.
- Continuous process for reviewing feedback from student on the quality of the course and planning for improvement.

Course Specification Approved
Department Official Meeting No (10) Date 22 / 3 / 1436 *H*

Course's Coordinator

Name : .....
Signature : .....
Date : …./ … / …… *H*

Department Head

Name : .....
Signature : .....
Date : …./ … / …… *H*