



Course Specifications

Muharram 1437 H

Institution:	College of Engineering
Academic Department :	Electrical Engineering
Programme :	Undergraduate
Course :	Logic Design Lab
Course Coordinator :	Dr. Abdullah Alahmadi & Eng Muhammad Humran Khan
Programme Coordinator :	Dr. Abdullah Almuhaissen
Course Specification Approved Date :	.... / ... / ..... H



A. Course Identification and General Information

1 - Course title :	Logic Design Lab	Course Code:	EE 207
2. Credit hours :	(1)		
3 - Program(s) in which the course is offered:	General Course.		
4 – Course Language :	English		
5 - Name of faculty member responsible for the course:	Dr.Abdullah Ahmadi,Eng.Humran		
6 - Level/year at which this course is offered :	Fall Semester, Freshman Year		
7 - Pre-requisites for this course (if any) :	<ul style="list-style-type: none"> • None 		
8 - Co-requisites for this course (if any) :	<ul style="list-style-type: none"> • Logic Design EE 208 		
9 - Location if not on main campus :	(.....)		
10 - Mode of Instruction (mark all that apply)			
A - Traditional classroom	<input checked="" type="checkbox"/>	What percentage?	100 %
B - Blended (traditional and online)	<input type="checkbox"/>	What percentage? %
D - e-learning	<input type="checkbox"/>	What percentage? %
E - Correspondence	<input type="checkbox"/>	What percentage? %
F - Other	<input type="checkbox"/>	What percentage? %
Comments :	.....	

B Objectives

What is the main purpose for this course?

Students would be expected to achieve the following knowledge and skills:

- Well knowing of Logic Design Lab and equipment.
- Ability to analyze different logic gate circuits through applying the practical circuits and calculating their outputs.
- Familiarize and ability to use the tools like ETS-5000 Advance Logic training system and Basic level digital electronic training set for the analysis and implementation of logic circuits.
 - 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 course, prepare students to work efficiently for their graduation project.
 - Feasible and easy selection of tools and equipment as per need regarding





logical gate circuits.

Practical circuits concepts with physical implementation of proper lab equipment and their connections.

Briefly describe any plans for developing and improving the course that are being implemented :

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C. Course Description

1. Topics to be Covered

List of Topics	No. of Weeks	Contact Hours
Introduction to laboratory equipment and their use like ETS-5000 advance logical training system.	1	2
Digital electronic training system, Connectivity of ICs, logic Gates, equipment	1	2
Lab Familiarization, Basic Logic Gates (OR, AND & NOT, NOR, NAND XOR & XNOR Gates)	2	4
Boolean Functions, Adder & Subtractor	2	4
Decoders & Encoders, Multiplexers & Magnitude Comparator	4	8
Code Converters, Latches & Flip-Flops, Registers & Shift Registers.	3	6
Synchronous & Asynchronous Counters	2	4

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

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	0	0	30	0	0	30
Credit	0	0	1	0	0	1





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

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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	.....	.....	.....
1.2	.....	.....	.....
1.3	.....	.....	.....
1.4	.....	.....	.....
1.5	.....	.....	.....
1.6	.....	.....	.....
2.0	Cognitive Skills		
2.1	An ability to design and conduct experiments, as well as to analyze and interpret data	Lecture, small group work, , research activities, lab demonstrations, projects and individual presentation	Standardized exams, oral exams, micro projects
2.2	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
2.3	The ability to analyze, design, and implement	implement	Standardized





	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
	systems.	systems. Lecture, small group work, , research activities, lab demonstrations, projects and individual presentation	exams, oral exams, micro projects
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 and individual presentation	Standardized exams, oral exams, micro projects
4.2	.....	.....	.....
4.3	.....	.....	.....
4.4	.....	.....	.....
4.5	.....	.....	.....
4.6	.....	.....	.....
5.0	Psychomotor		
5.1	.....	.....	.....
5.2	.....	.....	.....
5.3	.....	.....	.....





	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
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 Mid Term Exam	7th Week	20%
2	Second Mid Term Exam	13th Week	20%
3	Final Term Exam	15th Week	40%
4	Quizzes	During Semester	10%
5	Homework and Assignments	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 :

- Laboratory Manual

3. List Recommended Textbooks and Reference Material :

- Digital Design, M. Morris Mano, Michael D. Ciletti , 4th Edition", Prentice Hall,

4. List Electronic Materials :

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5. Other learning material :

-
-
-

F. Facilities Required

1. Accommodation

- Laboratory for at least 20 students quipped with no more than 2 students for one 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 :

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

3 Processes for Improvement of Teaching :

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-
-

4. Processes for Verifying Standards of Student Achievement

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-
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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 (.....) Date ... / / *H*

Course's Coordinator

Name :

Signature :

Date : .../ ... / *H*

Department Head

Name :

Signature :

Date : .../ ... / *H*

