TOROS ÜNİVERSİTESİ

Faculty Of Engıneerıng
Computer And Software Engıneerıng

Course Information

DIGITAL SYSTEMS					
Code	**Semester**	**Theoretical**	**Practice**	**National Credit**	**ECTS Credit**
		Hour / Week			
CSE205	Fall	3	2	4	

Prerequisites and co-requisites	None
Language of instruction	English
Type	Required
Level of Course	Bachelor's
Lecturer	Asst. Prof. Ziya Gökalp ALTUN
Mode of Delivery	Face to Face
Suggested Subject	None
Professional practise (internship)	None
Objectives of the Course	To develop the ability of analyzing combinational and sequential circuits and designing these circuits that satisfy given specifications under realistic conditions.
Contents of the Course	Digital systems and binary codes, Boolean algebra and logic gates, Karnaugh maps, combinational logic circuits - arithmetic circuits, decoders, encoders, MUX, DEMUX.

Learning Outcomes of Course

#	Learning Outcomes
1	Knowledge of Boolean algebra fundamentals, ability of writing Boolean functions in standard forms and simplifying them using Karnaugh maps.
2	Ability of analyzing combinational logic circuits, and commenting about the functions of these circuits.
3	Ability of designing combinational circuits which satisfy given specifications under realistic conditions.
4	Ability of presenting lab results in a proper technical report format.

Course Syllabus

#	Subjects	Teaching Methods and Technics
1	Number systems, binary codes	Lecture, discussion
2	Boolean algebra, logic gates	Lecture, discussion
3	Boolean functions	Lecture, discussion
4	Canonic forms	Lecture, discussion
5	Function simplification using Karnaugh maps	Lecture, discussion
6	Realization of two level functions	Lecture, discussion
7	Subject repetitions and midterm	Exam
8	Combinational circuit analysis	Lecture, discussion
9	Design of combinational circuits	Lecture, discussion
10	Arithmetic circuits I	Lecture, discussion
11	Arithmetic circuits II	Lecture, discussion
12	Magnitute comparators	Lecture, discussion

13	Encoders, Decoders	Lecture, discussion
14	MUX, DEMUX	Lecture, discussion
15	MUX, DEMUX	Lecture, discussion
16	Final Exam	Exam

Course Syllabus

#	Material / Resources	Information About Resources	Reference / Recommended Resources
1	Mano, M. Morris, Digital Design, 3nd Ed., Prentice-Hall, 2001		

Method of Assessment

#	Weight	Work Type	Work Title
1	40%	Mid-Term Exam	Mid-Term Exam
2	60%	Final Exam	Final Exam

Relationship between Learning Outcomes of Course and Program Outcomes

#	Learning Outcomes	Program Outcomes	Method of Assessment
1	Knowledge of Boolean algebra fundamentals, ability of writing Boolean functions in standard forms and simplifying them using Karnaugh maps.	2,3	1,2
2	Ability of analyzing combinational logic circuits, and commenting about the functions of these circuits.	2,3	1,2
3	Ability of designing combinational circuits which satisfy given specifications under realistic conditions.	2,3	1,2
4	Ability of presenting lab results in a proper technical report format.	2,3	1,2

PS. The numbers, which are shown in the column Method of Assessment, presents the methods shown in the previous table, titled as Method of Assessment.

Work Load Details

#	Type of Work	Quantity	Time (Hour)	Work Load
1	Course Duration	14	5	70
2	Course Duration Except Class (Preliminary Study, Enhancement)	14	3	42
3	Presentation and Seminar Preparation	0	0	0
4	Web Research, Library and Archival Work	0	0	0
5	Document/Information Listing	0	0	0
6	Workshop	0	0	0
7	Preparation for Midterm Exam	1	2	2
8	Midterm Exam	1	1	1
9	Quiz	0	0	0
10	Homework	0	0	0
11	Midterm Project	0	0	0
12	Midterm Exercise	0	0	0
13	Final Project	0	0	0
14	Final Exercise	0	0	0
15	Preparation for Final Exam	1	4	4
16	Final Exam	1	1	1