Course Information

COURSE INFORMATION

Course Title	Code	Semester	L+U Hour	Credits	ECTS
Digital Electronics	FZK382	6. Semester	2 + 2	3.0	7.0

Prerequisites	None

Language of Instruction	English
Course Level	Bacheclor's Degree (First Cycle)
Course Type	Elective
Mode of delivery	Face to face
Course Coordinator	Assoc. Prof. Dr. Hüseyin ÇAVUŞ
Instructors	Prof. Dr. Serhat ÖZDER
Assistants	
Course Objectives	This course aims to analyse the digital logic and some composite circuits in digital electronics.
Course Content	Introduction, Digital and Analog Quantities, Binary Digit, Byte, Bit, Binary Arithmetics, Number Systems, Logic Gates, Digital Logic, NOT Gate, AND Gate, OR Gates, NAND Gate, NOR Gates, EXOR Gates, Boolean Algebra, Mid-term Exam, Composite Circuits (Decoders), Composite Circuits (Encoders, Adders), Composite Circuits (Comparators, Multiplexers), Composite Circuits (Demultiplexers), Counters, Registers, DAC Converters, ADC Converters, Final Exam
Course Learning Outcomes	1) determine the digital and analog quantities. 2) establish simple logic circuits using logic gates. 3) simplify digital signals using Boolean Algebra. 4) establish composite circuits like decoders, encoders, adders and comparators. 5) make comment about Digital-to-Analog converters. 6) make comment about Analog-to-Digital converters.

WEEKLY COURSE CONTENT

Week	Topics	Teaching and Learning Methods and Techniques	Study Materials
1. Week	Introduction, Digital and Analog Quantities, Binary Digit	Oral Lectures, Homework	
2. Week	Byte, Bit, Binary Arithmetics	Oral Lectures, Homework	
3. Week	Number Systems	Oral Lectures, Homework	

Quick Access

Physics
Qualification Awarded
Level of Qualification
Qualification Requirements and Regulations
Specific Admission Requirements
Recognition of Prior Learning
Profile of the Program
Program Key Learning Outcomes
Occupational Profile of Graduates
Access to Further Studies
Course Structure & Credits
Exam Regulations & Assessment & Grading
Graduation Requirements
Mode of Study
Programme Director(or Equivalent)
Evaluation Questionnaire
TYYÇ

Course Information
Course Information
Weekly Course Content
Resources
Assessment
Course Category
CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME OUTCOMES
ECTS credits and course workload

4. Week	Logic Gates, Digital Logic	Oral Lectures, Homework	
5. Week	NOT Gate, AND Gate, OR Gates	Oral Lectures, Homework	
6. Week	NAND Gate, NOR Gates, EXOR Gates	Oral Lectures, Homework	
7. Week	Boolean Algebra	Oral Lectures, Homework	
8. Week	Composite Circuits (Decoders),	Oral Lectures, Homework	
9. Week	Composite Circuits (Encoders, Adders)	Oral Lectures, Homework	
10. Week	Composite Circuits (Comparators, Multiplexers)	Oral Lectures, Homework	
11. Week	Composite Circuits (Demultiplexers), Counters	Oral Lectures, Homework	
12. Week	Registers	Oral Lectures, Homework	
13. Week	DAC Converters	Oral Lectures, Homework	
14. Week	ADC Converters	Oral Lectures, Homework	
15. Week	General Review	Oral Lectures	
16. Week	Final Exam	Written Exam	

RESOURCES

Recommended Sources
Harun Bayram,1996, Dijital Elektronik, Harun Bayram Yayınları
Alvis J. Evans , 1996, Basic Digital Electronics, Master Publishing Inc.

ASSESSMENT

Measurement and Evaluation Methods and Techniques		
40% Mid Term Exam 60% Final Exam		
In-Term Studies	**Quantity**	**Percentage**
Mid Term Exam 1	1	15
Mid Term Exam 2	1	30
Application/Practice	1	15
Total	3	60
End-Term Studies	**Quantity**	**Percentage**
Final Exam	1	40
Total	1	40
Contribution Of In-Term Studies To Overall Grade		60
End-Term Studies		40
Total		100

COURSE CATEGORY

Course Category	Percentage

Support Courses	% 100

CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME OUTCOMES

Programme Outcomes	Contribution Level	DK1	DK2	DK3	DK4	DK5	DK6
PY1	4	5	3	5	3	5	3
PY2	3	3	3	3	3	3	3
PY3	3	3	3	3	3	3	3
PY4	4	4	5	3	4	4	4
PY5	1	1	1	1	1	1	1
PY6	4	3	3	4	5	5	4
PY7	5	5	5	5	5	5	5
PY8	4	5	4	3	4	4	4
PY9	3	3	3	3	3	3	3
PY10	3	3	3	3	3	4	2
PY11	3	3	3	3	3	3	3
PY12	3	3	4	3	3	2	3
PY13	1	1	1	1	1	1	1
PY14	4	4	4	4	4	4	4
PY15	3	4	2	3	3	3	3

*DK = Course's Contrubution.

	0	1	2	3	4	5
Level of contribution	None	Very Low	Low	Fair	High	Very High

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ECTS CREDITS AND COURSE WORKLOAD

Event	Quantity	Duration (Hour)	Total Workload (Hour)
Class Hours (14 weeks)	14	4	56
Final Exam Preparation	1	22	22
Mid Term Exam Preparation	1	15	15
Assignment 1	1	10	10
Presentation/Seminar	2	2	4
Further Study	14	2	28
Mid Term Exam 1	1	2	2
Final Exam	1	2	2
Research&Project	2	8	16
Preliminary Study	14	1	14
Assignment 2	1	10	10
		Total Workload	179
		Total Workload / 25.5 (s)	7.02
		ECTS Credit of the Course	7