



HASAN KALYONCU UNIVERSITY
Faculty of Engineering
Course Description Form

COURSE: Introduction to Computer Engineering					
CODE: CENG101		SEMESTER: FALL			
LANGUAGE: ENGLISH		TYPE: COMPULSORY			
PRE-REQUISITES: NONE		THEORY	PRACTICAL	CREDIT	ECTS
CO-REQUISITES:					
WEEKLY HOURS:		3	0	3	5

CONTENT OF THE COURSE:

In this course, students will be introduced to the essential concepts of computer engineering at an introductory level. The students are introduced to the history and evolution of computing and to the impact of information technology on the society.

An overview of computing systems. Data storage. Data representation and manipulation. Introduction to how computers work: basics of computer architecture. Introduction to operating systems. Introduction to computer networks, Internet and World Wide Web. Database systems. Social aspects of computers and information technology.

OBJECTIVE OF THE COURSE:

Provide an essential concepts of computer engineering at an introductory level general and provide concept to students about the courses what they will learn in computer engineering area during the undergraduate education.

WEEKLY SCHEDULE

Week	Topics
1	An Overview of Computer Engineering: History of computing systems. The topics that the computer science covers.
2	Data Storage: Data representation.
3	Data Storage: Primary and secondary storage
4	Data manipulation: Parts of CPU. Machine language and machine cycle.
5	Data manipulation: Program execution. Arithmetic and logic instructions.
6	Main memory and communication of CPU with other devices. Other machine architectures.
7	Operating Systems: Introduction to the theory of operating systems and basic concepts.
8	Computer Networks, WWW and Internet: Network fundamentals.
9	Mid Examination Week
10	Basic concepts related with WWW and Internet.
11	Algorithms: Basic concepts. Algorithm representation.
12	Database Systems: Basic concepts. Relational model and SQL.
13	Software Engineering: The software engineering discipline. Software engineering life cycle.
14	Preparation for the Final Exam: Repeating the chapters. Solving exercises

TEXTBOOK:

Brookshear, J. G., "Computer Science: An Overview", 11th edition, Pearson Education Inc., 2012.

REFERENCE BOOKS:

Perry Donham, "Introduction to Computer Science", 1st Edition, 2018

David Reed, "A Balanced Introduction to Computer Science", 3rd Edition, 2010

Yale N. Patt and Sanjay J. Patel, "Introduction to Computing Systems: From Bits and Gates to C and Beyond", 2003.

EVALUATION SYSTEM:

IN-TERM STUDIES	QUANTITY	PERCENTAGE (%)
Midterm Exam	1	20%
Homework	3	30%
Laboratory works	-	-
Quiz	2	10%
Final Exam	1	40%
TOTAL	7	100%
CONTRIBUTION OF INTERM STUDIES TO OVERALL GRADE	6	60
CONTRIBUTION OF FINAL EXAMINATION TO OVERALL GRADE	1	40
TOTAL	7	100

COURSE CATEGORY:**PERCENTAGE (%)**

Mathematics and Basic Sciences	40%
Engineering	50%
Engineering Design	10%
Social Sciences	0%

TABLE OF ECTS / WORKLOAD:

Activities	QUANTITY	Duration (Hour)	Total Workload
Course Duration	13	3	39
Hours for off-the-classroom study (Pre-study, practice)	14	5	70
Laboratory works	-	-	
Mid-term	1	2	2
Final examination	1	2	2
Homework	3	6	18
Quiz	2	1	2
Total Work Load			133
Total Work Load / 30			4,43
ECTS Credit of the Course			5

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
LO1	1	0	0	1	0	0	0	1	0	0	2
LO2	2	0	0	2	0	0	0	2	0	0	2
LO3	2	0	0	1	0	0	0	2	0	0	1
LO4	3	0	0	2	0	0	0	3	0	0	2
LO5	3	0	0	2	0	0	0	3	0	0	1
LO6	3	0	0	2	0	0	0	2	0	0	1
PO: Program Outcomes LO: Learning Outcomes Values: 0: None 1: Low 2: Medium 3: High											

INSTRUCTOR(S):	Asst. Prof. Dr. Mohammed Madi
FORM PREPARATION DATE:	22.05.2019

LEARNING OUTCOMES OF THE COURSE:	PROGRAM OUTCOMES:
<p>LEARNING OUTCOMES OF THE COURSE: LO1: Describe the impact of computer engineering in society in the past and in the future LO2: Describe the basic concepts related with hardware and data representations. LO3: Describe how computers perform basic operations LO4: Describe simple problem-solving strategies and how these can be implemented through computers LO5: Describe basic concepts related with computer networks, WWW, and Internet. LO6: Describe the basic concepts related with operating systems and relational database systems.</p>	<p>PO1: Adequate knowledge in mathematics, science and engineering subjects pertaining to the relevant discipline; ability to use theoretical and applied knowledge in these areas in complex engineering problems. PO2: Ability to identify, formulate, and solve complex engineering problems; ability to select and apply proper analysis and modeling methods for this purpose. PO3: Ability to design a complex system, process, device or product under realistic constraints and conditions, in such a way as to meet the desired result; ability to apply modern design methods for this purpose. PO4: Ability to devise, select, and use modern techniques and tools needed for analyzing and solving complex problems encountered in engineering practice; ability to employ information technologies effectively. PO5: Ability to design and conduct experiments, gather data, analyze and interpret results for investigating complex engineering problems or discipline specific research questions. PO6: Ability to work efficiently in intra-disciplinary and multi-disciplinary teams; ability to work individually. PO7: Ability to communicate effectively in Turkish, both orally and in writing; knowledge of a minimum of one foreign language; ability to write effective reports and comprehend written reports, prepare design and production reports, make effective presentations, and give and receive clear and intelligible instructions. PO8: Recognition of the need for lifelong learning; ability to access information, to follow developments in science and technology, and to continue to educate him/herself. PO9: Consciousness to behave according to ethical principles and professional and ethical responsibility; knowledge on standards used in engineering practice. PO10: Knowledge about business life practices such</p>

	<p>as project management, risk management, and change management; awareness in entrepreneurship, innovation; knowledge about sustainable development.</p> <p>PO11: Knowledge about the global and social effects of engineering practices on health, environment, and safety, and contemporary issues of the century reflected into the field of engineering; awareness of the legal consequences of engineering solutions.</p>
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