NEAR EAST UNIVERSITY

Faculty of Engineering
Department of Computer Engineering

Course Unit Title	Computer Organizations		
Course Unit Code	COM254		
Type of Course	Compulsory Departmental Course		
Level of Course Unit	Bachelor's Degree (First Cycle)		
University Credits	3		
ECTS Credits	5		
Theory (hours/week)	4		
Practice(hours/week)	-		
Laboratory (hours/week)	-		
Prerequisities and co-requisities	COM211 Logic Design		
Recommended Optional Programme Components	-		
Year of Study	2		
Semester	Spring		
Language of Instruction	English		
Mode of Delivery	Face to face		
Teaching Methods	Telling/Explaining, Questioning, Problem Solving		
Course Coordinator	Assist. Prof. Dr Kaan Uyar		
Lecturer (s)	Assist. Prof. Dr Kaan Uyar Office: 16H-19 e-mail: kaan.uyar@neu.edu.tr web: www.uyar.com		
Assistant (s)	-		
Course Description	Introduction to computers. Micro-programming control. Memory organization. Input/output system. Non-standard computer architectures, pipeline, RISC and vector computers.		
Course Objectives		To give the the fundamental organization of the computers	
		To teach the MIPS assembly language programming	
Learning Outcomes	When this course has been completed the student should be able to		Assesment Methods
	1	Measure and compare performances of different systems	1
	2	Understand how the datapath and control unit operate inside a CPU	1, 2
	3	Write programs in MIPS assembly language	1, 2
	Assesment Methods: 1. Written Exam, 2. Assignment 3. Project/Report, 4.Presentation, 5 Lab Work		
Course's Contribution to Program	*#*	*Program Competencies*	*LC*
	1	Ability to understand and apply knowledge of mathematics, science, and engineering	4
	2	An ability to analyze a problem, identify and define the computing requirements appropriate to its solution	5
	3	An ability to apply mathematical foundations, algorithmic principles, and computer engineering techniques in the modelling and design of computer-based systems	4
	4	An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social aspects	
	5	Planning and carrying out experiments, as well as to analyze and	1

		interpret data	
	6	Ability to use the techniques, skills and modern engineering tools necessary for engineering practice	4
	7	An understanding of professional, ethical, legal, security and social issues and responsibilities that apply to engineering.	4
	8	An ability to work productively in a multidisciplinary team, in particular to carry out projects involving computer engineering skills.	3
	9	An ability to communicate effectively with a range of audiences	1
	10	A recognition of the need for, and an ability to engage in life-long learning	5
	LC (Level of Contribution): 1.Very Low, 2.Low, 3.Moderate, 4.High, 5.Very High		

Recommended Sources	*Textbook*	David A. Patterson and John L. Hennessy, Computer Organization and Design,The Hardware/Software Interface, 4th Edition, Morgan Kaufmann, 2009
	Web	www.uyar.com

Course Contents	*Week*	*Topic/Exam*
	1	Introduction
	2	Computer Abstractions and Technology
	3	Computer Abstractions and Technology
	4	Instructions Language of the Computer
	5	Instructions Language of the Computer
	6	Arithmetic for Computers
	7	Arithmetic for Computers, Review
	8	Midterm Exam
	9	The Processor
	10	The Processor
	11	Large and Fast Exploiting Memory Hierarchy
	12	Large and Fast Exploiting Memory Hierarchy, Storage and Other IO Topics
	13	Storage and Other IO Topics
	14	Multicores, Multiprocessors, and Clusters
	15	Multicores, Multiprocessors, and Clusters, Review of the Semester
	16	Final Exam

Evaluation System	*Requirements*	*Quantity*	*Method*	*Percentage*
	Attendance/Participation	-	-	-
	Laboratory Experiments	-	-	-
	Application	-	-	-
	Field Work	-	-	-
	Special Course Internship	-	-	-
	Quizzes/Studio Critics	7	Written	20
	Homework Assignments	2	Written	10
	Presentation	-	-	-
	Project	-	-	-
	Seminar	-	-	-
	Midterms Exams/ Jury	1	Written Exam	20
	Final Exam/ Jury	1	Written Exam	50
	Total			100

Assessment Criteria	Final grades are determined according to the Near East University Academic Regulations for Undergraduate Studies	
Course Policies	1	Attendance to the course is necessary but not mandatory.
	2	Late assignments will not be accepted unless an agreement is reached with the leturer.
	3	Students may use calculators during the exam.
	4	Cheating and plagiarism will not be tolerated.Cheating will be penalized according to the Near East University General Student Discipline

		Regulations			
	5	Attacks performed against University/lecturer resources are expressly prohibited.			
ECTS Allocated Based on the Student Workload	*Activities*		*Number*	*Duration (Hours)*	*Total Workload*
	Course Hours (Including Exam Weeks)		16	4	64
	Application		-	-	-
	Special Course Internship		-	-	-
	Field Work		-	-	-
	Study Hours Out of Class		14	3	42
	Presentation/Seminar Preparation		-	-	-
	Project		-	-	-
	Homework Assignments		2	3	6
	Quizzes		7	2	14
	Laboratoryand Tutorials		-	-	-
	Laboratory Preparation		-	-	-
	Laboratory Exams		-	-	-
	Preparation of Midterm Exams/Jury		1	10	10
	Preparation of Final Exams/Jury		1	14	14
	Total Workload (h)				150
	Total Workload/30 (h)				5
	ECTS Credits of the Course				5
Prepared by	Assist. Prof. Dr Kaan Uyar				
Date	July 9, 2014				