OSTIM TECHNICAL UNIVERSITY
FACULTY OF ENGINEERING
SOFTWARE ENGINEERING
UNDERGRADUATE COURSE

COURSE SYLLABUS FORM
2021-2022 FALL

YZL 308 System Programming							
Course Name	**Course Code**	**Term**	**Hour**	**Practice**	**Lab**	**Credit**	**ECTS**
System Programming	YZL 308	6	3	0	0	3	5

Language of the Course	English
Type of Course	Mandatory
Course Level	Undergraduate
Method of Teaching	Face-to-face
Course Learning and Teaching Techniques	Lecture, Q/A, Homework

Purpose of the Course

The aim of this course is to allow students to gain knowledge about the design of system programs and to gain skills in the implementation of these designs using modern development tools.

Learning Outcomes

Students who successfully complete this course;

- Adequate knowledge of system programs (interpreters, associators, loaders, macro handlers, text editors, debugging programs, interpreters, operating systems).
- Ability to design and implement system software under realistic constraints and conditions, using theoretical and applied knowledge in these fields.
- Ability to experiment, collect data, analyze and interpret results using assembly language and unix shell programming.
- Ability to find, select and use modern tools and techniques necessary to design and implement system software.
- gain the ability to work effectively in individual and in-disciplinary teams.

Course Content

Number systems, basic computer architecture, programming in the assembly language, converters, relocation, associatives, loaders, macro handlers, text editors, debugging programs, canonical specification of programming languages, interpreters, introduction to operating systems, Linux shell programming, term project.

Weekly Plan and Related Preparation Studies	
Week	**Subjects**
1	Introduction (Number systems, basic computer hardware, converter language, addressing modes)
2	Programming in the assembly language I (M6800 instruction set, conditional commands)
3	Programming in assembly language II (loops, index addressing, subprograms)
4	Converters
5	Relocation and loaders
6	Associatives
7	Macro handlers, C preprocessor
8	Midterm Exam
9	Text editors, debugging programs
10	Canonical specification of programming languages
11	Interpreters, Shell programming
12	Introduction to operating systems I, Shell programming
13	Introduction to operating systems II, Shell programming
14	Project Presentations
15	Project Presentations
16	Final Exam

Resources (Textbook and supplementary book)
1. Wray, J. Greenfield, R. Bannatyne, "Using Microprocessors and Microcomputers", Prentice-Hall 2. D.H. Marcellus, "Systems Programming for Small Computers", Prentice Hall

Evaluation System		
Studies	**Number**	**Contribution**
Attendance		
Lab		
Application		
Field Study		
Course Specific Internship (if applicable)		
Quizzes/Studio/Critical		
Homework		
Presentation		
Projects		
Report		
Seminar		
Midterm Exams/Midterm Jury	1	%40
General Exam/Final Jury	1	% 60
	Total	**% 100**
Contribution of Mid-Semester Studies to Success Grade		% 50
Contribution of End of Semester Studies to Success Grade		% 50
	Total	**% 100**

Course Category	
Basic Vocational Courses	
Specialization/Field Courses	x
Support Lessons	
Communication and Management Skills Lessons	
Transferable Skills Lessons	

Course Learning Outcomes and Program Qualifications							
No	**Program Qualifications / Outcomes**	**Contribution Level**				
		1	**2**	**3**	**4**	**5**
1	Ability to apply mathematics, science and engineering				x	
2	Ability to design and conduct experiments and to analyze and interpret experimental results.					
3	Ability to design a system, component, and process and according to specified requirements.				x	
4	Ability to work in an interdisciplinary team.				x	
5	Ability to identify, formulate and apply engineering problems.					x
6	Identifies, defines, formulates, solves complex Software Engineering problems and chooses and applies analysis and modelling methods suitable for this purpose.				x	
7	Develops, selects, uses modern techniques and tools necessary for the analysis and solution of complex problems encountered in Software Engineering applications and uses information technologies effectively.				x	

ECTS/Workload Table			
Activities	**Count**	**Duration (Hour)**	**Total Workload**
Lesson hours (Including the exam week: 16 x total lesson hours)	16	3	48
Lab			
Application			
Course Specific Internship			
Field Study			
Out of Class Study Time			
Presentation/Seminar Preparation			
Projects			
Reports			
Homework			
Quizzes/Studio Critic			
Preparation Time for Midterm Exams/Midterm Jury	1	40	40
Preparation Time for the General Exam/General Jury	1	62	62
Total Workload	**(ECTS 150/30 = 5)**		**150**