Course Description	
Course Code	YS 443
Course Name	Compiler Design
Prerequisite Courses	none
Language of the Course	The English
Course Coordinator	
Instructor(s)	
Course Assistants	none
The aim of the course	Learning the basics of programming languages, compiler functions and stages, understanding the interaction between the compiler and programming languages and programs
Course Content	Compilation Phases, Lexical Analysis, Syntax Analysis, Semantic Analysis, Interface Code Generation, Target Code Generation, Code Optimization

Weekly Course Content	
Week 1	Course Description and Basic Concepts
Week 2	Introduction to Compilation, Stages of Compilation
Week 3	Explanation of compilation functions with a simple one-pass compiler
Week 4	Lexical Analysis, Relic production
Week 5	Programming Language Definitions with BNF and CFG
Week 6	Syntax Analysis, Parse Tree
Week 7	Semantic Analysis
Week 8	Midterm Exam 1
Week 9	Interface code display
Week 10	Interface code generation
Week 11	Target Code Generation
Week12	Midterm 2
Week 13	Machine Independent Code Optimization
Week 14	Command Level Parallel Processing
Week 15	Final exam.

Course Learning Outcomes	
1	Students are familiar with the algorithms used in all stages of compilation.
2	Students know how to design new programming languages and can use analysis and techniques in required modules.
3	Students are familiar with the optimization methods and algorithms used by the compiler.
4	Students are familiar with platform-specific compiler algorithms.
5	Students know compiler development methods.

Contribution of the Course to Program Qualifications		Contribution Level
01	The student will have the ability to apply analytical approach, mathematics and science knowledge in software and engineering issues.	5
02	The student will have the ability to identify, define, formulate and solve a problem in software and computer systems.	4
03	The student will have gains scientific research skills in software and engineering problems, has the ability to design a system, part or process.	5
04	The student will have the ability to use the design capability, techniques and tools required for engineering applications.	3
05	The student will have the ability to design, implement and interpret experimental work and software projects by analyzing the results.	4
06	The student will have the ability to work between disciplines and teamwork.	3
07	The student will have the ability to work in international environments and adapt to different cultures.	4
08	The student will have verbal and written communication skills in Turkish and English.	2
09	The student will have the awareness of the necessity of lifelong learning and the ability to realize it.	1
10	The student will gain knowledge of legal issues with the awareness of professional and ethical responsibility.	2
11	The student will have managerial skills (leadership, organization, time and risk management, quality awareness, efficiency, etc.).	3
12	The student will have the ability to participate in social activities, to acquire regular sports habits and to use time in the best way.	1
13	The student will have the ability to find unusual ways and produce projects.	4
14	The student will have professional self-confidence, being an entrepreneur and taking initiative.	3
15	It is sensitive about the problems of the age and looks after the national interests.	2

ECTS WORKLOAD			
	Number	**Duration (hours)**	**Number*Duration**
Face to face education	14	2	28
Out-of-class study time (pre-study, reinforcement)	14	1	14
Homeworks	1	8	8
Presentation / Seminar preparation	1	1	1
Quizzes	0	0	0
Preparation for midterm exams	2	7	14
midterm exams	2	2	4
Project (Semester assignment)	1	15	15
Lab	0	0	0
Field work	0	0	0
Preparation for the final exam	1	10	10
Semester final exam	1	2	2
Research	0	0	0
TOTAL WORKLOAD			96
ECTS			**3**

Evaluation		
SEMESTER EVALUATION	**Number**	**Contribution Percentage**
Midterm	2	20
Quiz	0	0
Homework	1	20
SEMESTER TOTAL		**40**
Contribution rate of mid-term evaluations to success		40
Contribution rate of the final exam to success		60
GRAND TOTAL		**one hundred**

Resources	
Textbook	Aho, Sethi, Ullman, "Compilers: Principles, Techniques, and Tools 2E", Addison-Wesley, 2006
Helpful Resources	