Course name: XXXXXX- Real Time Programming	Department: Computer Engineering

Semester	Methods of Education							Credit (ECTS)
	Lecture	Recitation/ (Etud)	Lab	Project/Field Study	Homework	Other	Total	7
2	42	28		100		15	185	

Language	English
Compulsory/Elective	Elective
Prerequisites	None
Course Contents	Design and programming of real-time embedded systems with low latency and high availability. Time domain events to state diagrams. Real-time programming for high-performance multi-core processors is explored. A detailed comparison of some popular real-time operating systems
Course Objectives	Some embedded systems have strict constraints on non-functional behavior such as computational delay and periodicity. Such systems are referred to as real-time systems. Examples of real-time systems are control systems for cars, aircraft and space vehicles as well as computer games and multimedia applications. This course is intended to give basic knowledge about methods for the design and analysis of real-time systems.
Learning Outcomes and Competences	After the course the students shall be able to: • Formulate requirements for embedded systems with strict constraints on computational delay and periodicity. • Construct concurrently-executing tasks for real-time applications that interface to hardware devices . • Describe the principles and mechanisms used for designing run-time systems and communication networks for real-time applications. Apply the basic analysis methods used for verifying the temporal correctness of a set of executing tasks.
Textbook and /or References	1. Real-Time Concepts for Embedded Systems, Qing Li, CMP Books 2. Real-time systems Design and Analysis, Philip A. Laplante, IEEE Press

Assessment Criteria		If any, mark as (X)	Percentage (%)
	Midterm Exams	X	20
	Quizzes		
	Homeworks		
	Projects	X	60
	Term Paper		
	Laboratory work		
	Other		
	Final Exam	X	20

Instructors	Assist. Prof. Dr. Mehmet Efe Özbek
Week	**Subject**
1	Real-time systems: Characteristics
2	Real-time design methods
3, 4	Real time operating System Concepts
5, 6	Scheduling
7, 8	Intertask communication and synchronization
9, 10	Comparison of popular real-time operating systems
11, 12	Memory Management
13, 14	POSIX