HASAN KALYONCU UNIVERSITY
Faculty of Engineering
Course Description Form

COURSE: Operating Systems				
CODE: CENG304	**SEMESTER:** SPRING			
LANGUAGE: ENGLISH	**TYPE:** COMPULSORY			
PRE-REQUISITES: - **CO-REQUISITES:** -	**THEORY**	**PRACTICAL**	**CREDIT**	**ECTS**
WEEKLY HOURS:	3	0	3	4

CONTENT OF THE COURSE:
Computer architecture, process management, interprocess synchronization, semaphores and monitors, deadlocks, CPU scheduling algorithms, file systems, input/output systems, disk scheduling.

OBJECTIVE OF THE COURSE:
Main purpose of this course is to improve the skills of students to develop applications on the subsystems of operating systems.

WEEKLY SCHEDULE	
Week	**Topics**
1	Introduction to Operating Systems and Strategies of Operating Systems
2	Architecture of computer systems
3	Process management
4	Interprocess synchronization
5	Critical section problems
6	Interprocess communications
7	Semaphores, Monitors and applications
8	Midterm
9	CPU scheduling algorithms
10	Deadlocks and solutions
11	Memory management, Paging, segmentation
12	Virtual memory, File systems, access and protection mechanisms
13	Input/Output systems, disk scheduling
14	Review

TEXTBOOK: Operating System Concepts, by Silberschatz, Galvin and Gagne Wiley.

REFERENCE BOOKS: Modern Operating Systems, 3rd Edition, by Tanenbaum, Prentice Hall.

EVALUATION SYSTEM:		
IN-TERM STUDIES	**QUANTITY**	**PERCENTAGE (%)**
Midterm Exam	1	30
Homework	0	0
Laboratory works	0	0
Quiz	5	30
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	10
Engineering	45
Engineering Design	45
Social Sciences	

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	0	0	0
Mid-term	1	2	2
Final examination	1	2	2
Homework	0	0	0
Quiz	5	0.5	2.5
Total Work Load			**115.5**
Total Work Load / 30			**3.85**
ECTS Credit of the Course			**4**

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

INSTRUCTOR(S):	Asst. Prof. Dr. Ulaş GÜLEÇ
FORM PREPARATION DATE:	23.05.2019

LEARNING OUTCOMES OF THE COURSE:	**PROGRAM OUTCOMES:**
LO1: Understand design and implementation of operating systems. **LO2:** Understand data structures and memory organization mechanisms of a complex software systems. **LO3:** Understand resource sharing mechanisms of a complex software system. **LO4:** Understand concurrent data exchange mechanisms of a complex software system. **LO5:** Design algorithms for problems requiring concurrency and synchronization.	**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 as project management, risk management, and change management; awareness in entrepreneurship, innovation; knowledge about sustainable development.

	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.