Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
INF443	Distributed Systems and Applications	7	3	0	0	3	4

Prerequisites	INF114/INF243
Admission Requirements	INF114/INF243

Language of Instruction	French
Course Type	Compulsory
Course Level	Bachelor Degree
Objective	The aim of this course is to provide an understanding of the basic design principles of distributed systems. While achieving this aim, it is aimed to give both theoretical and practical approaches in a balanced way. Accordingly, in the context of computer networks, new methods are shown in which the communication methods that students have seen before will be applied in particular applications. It is aimed to reinforce their knowledge through the practice assignments given throughout the course.
Content	1 Definition of Distributed Systems and Introduction to Python 2 Distributed System Architecture Models 3 Programming with Threads I 4 Multilayer structures in Distributed Systems. 5 Parallel Programming with Processes 6 Parallel Programming with Processes II 7 Client-Server architectures, distribution of computation, horizontal and vertical deployments 8 Midterm Exams 9 Client-Server architectures II 10 Architectures for horizontal computing distribution, load distribution 11 Middleware design 12 P2P systems: Requirements, Architectures, Applications 13 Cloud Computing Systems: Definition, Architectures, Role in distributed systems and integration strategies 14 Distributed AI Applications
References	1. Distributed Systems: Concepts and Design, 4. basım, George Coulouris et al, Addison Wesley, 2006. 2. Distributed Systems - Principles and Paradigms, 1. basım, Andrew S.Tanenbaum & Maarten van Steen, Prentice Hall, 2002.

Theory Topics

Week	Weekly Contents
1	Definition of Distributed Systems and and Introduction to Python
2	Distributed System Architecture Models
3	Programming with Threads
4	Multilayer structures in Distributed Systems.
5	Parallel Programming with Processes I
6	Parallel Programming with Processes II
7	Client-Server architectures, distribution of computation, horizontal and vertical deployments
8	Midterm exam

Week	Weekly Contents
9	Client-Server architectures
10	Architectures for horizontal computational distribution, load distribution
11	Middleware design
12	P2P systems: Requirements, Architectures, Applications
13	Cloud Computing Systems: Definition, Architectures, Role in Distributed Systems and Integration Strategies
14	Distributed AI Applications