Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
INF481	Software Engineering and Object Oriented Design	8	4	0	0	4	5

Prerequisites	
Admission Requirements	

Language of Instruction	French
Course Type	Compulsory
Course Level	Bachelor Degree
Objective	In this course, tools that can be used in the object-oriented design process are introduced, and students are encouraged to develop the ability to apply these tools in practice. These tools support the design process both visually and textually. In addition, students gain the ability to use methods and tools that increase efficiency throughout the various processes encountered during the life cycle of a software project. Students learn the role of software engineering within computer engineering and understand the necessity of software design, followed by object-oriented design. They learn to use UML, a visual modeling language that is accepted worldwide as a standard for software design, and are able to design different software problems using the UML language. They also gain the ability to establish the architectural structure of a software system. Furthermore, students can explain the software development process and life cycle in detail and compare the software development processes commonly used in industry. They learn to test developed software using various techniques and to estimate the expected cost of a software project.
Content	1. Introduction to Software Engineering and Design, Introduction to Agile Project Management 2. Software Requirements Analysis 3. Conceptual Design of Software 4. Software Design Principles, Technical Design 5. UML Class Diagrams 6. Design Patterns – 1 7. Design Patterns – 2 8. Project Conceptual Design Presentations 9. Midterm Exam 10. Software Quality 11. Software Testing Techniques 12. Software Development Models 13. Estimation in Software Projects 14. Term Project Presentations
References	1. Software Engineering, Ian Sommerville, Addison-Wesley, 10th Edition, 2015. 2. Introduction to Software Engineering Design, Processes, Principles, and Patterns with UML2, Christophe Fox, Addison-Wesley, 2006.

Theory Topics

Week	Weekly Contents
1	Introduction to Software Engineering and Design, Introduction to Agile Project Management
2	Software Requirements Analysis
3	Conceptual Design of Software
4	Software Design Principles, Technical Design
5	UML Class Diagrams
6	Design Patterns – 1
7	Design Patterns – 2
8	Project Conceptual Design Presentations
9	Midterm Exam
10	Software Quality

Week	Weekly Contents
11	Software Testing Techniques
12	Software Development Models
13	Estimation in Software Projects
14	Term Project Presentations