DEPARTMENT OF MECHATRONICS ENGINEERING
COURSE SYLLABUS

Course Details			
Code		**Academic Year**	**Semester**
INF202		2	Spring
Title	**T** **A** **L**		**ECTS**
Software Engineering	1 0 3		6

Language	German
Level	**Undergraduate** X **Graduate** **Postgraduate**
Department / Program	Computer Science
Forms of Teaching and Learning	Lecture, Individual Study
Course Type	**Compulsory** X **Elective**
Objectives	After successfully completing this module, students have the ability to plan and implement small and medium-sized software projects. They can differentiate between process models and select the right model for their projects. They are aware of the importance of requirements engineering and can use different methods to determine requirements and document them according to standard specifications. They can use modeling tools such as UML to analyze and document requirements. Through independent project work, they are trained in the implementation of a project and can use GUI programming technologies such as Java Swing and / or JavaFX.
Content	The following concepts are introduced: - Software engineering challenges - Process models for software projects - Requirements engineering - System planning: architectural patterns and design patterns - Static and dynamic tests - Clean code guidelines
Prerequisites	Desirable: INF102 Object Oriented Programming
Coordinator	Dipl.-Ing. Dr. Burcu Yıldız
Lecturer(s)	Dipl.-Ing. Babür Somer
Assistant(s)	MSc. Nihal Zuhal Kayalı
Work Placement	None

Recommended or Required Reading	
Books / Lecture Notes	- Ian Sommerville. Software Engineering. Pearson, 2015. - Helmut Balzert. Sofware Entwicklung: Basiskonzepte. Spektrum Verlag, 2009.
Other Sources	- Erhan Sarıdoğan. Yazılım Mühendisliği Temelleri. Papatya Yayıncılık, 2011.

Additional Course Material	
Documents	-
Assignments	-
Exams	-

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Digital Applications and Materials

Learning platform	Google Classroom, Google Meet
Digital applications	Project tasks - Submission via Google Classroom

Course Composition

Mathematics und Basic Sciences	10	%
Engineering	30	%
Engineering Design		%
Social Sciences		%
Educational Sciences		%
Natural Sciences		%
Health Sciences		%
Expert Knowledge	60	%

Assessment

Activity	Count	Percentage (%)
Midterm Exam		
Quiz		
Assignments		
Attendance		
Recitations		
Projects	1	60
Final Exam	1	40
Total		**100**

ECTS Points and Work Load

Activity	Count	Duration	Work Load (Hours)
Lectures	14	1	14
Self-Study			
Assignments			
Presentation / Seminar Preparation			
Midterm Exam	1	1	1
Recitations			
Laboratory			
Projects	1	150	150
Final Exam	1	1	1
Total Work Load			**166**

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ECTS Points (Total Work Load / 28)	6

Learning Outcomes

1	Comprehensive understanding of software engineering challenges and ability to address them
2	Ability to analyze an application problem, to plan and implement a software project as a solution
3	Ability to determine and document requirements
4	Competence to carry out extensive tests

Weekly Content

1	History of software engineering as an engineering discipline
2	Challenges of Software engineering and project management
3	Process models: phase models and growth models
4	Agile process models
5	Requirements engineering: determination of requirements
6	Requirements engineering: documentation of requirements
7	Unified Modeling Language
8	Clean code guidelines
9	Mid term exams
10	System planning: architectural patterns
11	System planning: design patterns
12	Test procedures: static tests, component tests
13	Test procedures: Dynamic test procedures, integration tests
14	Quality assurance
15	Repetition

Contribution of Learning Outcomes to Program Objectives (1-5)

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11
1	5	5	5	3	3	3	1	5	3	3	4
2	5	5	5	3	3	3	1	5	3	3	4
3	5	5	5	3	3	3	1	5	3	3	4
4	5	5	5	3	3	3	1	5	3	3	4

Contribution Level	1: Low 2: Low-intermediate 3: Intermediate 4: High 5: Very High

https://obs.tau.edu.tr/oibs/bologna/progLearnOutcomes.aspx?lang=en&curSunit=196

Compiled by:	Dipl.-Ing. Dr. Burcu Yıldız
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