

DEPARTMENT OF MECHATRONICS ENGINEERING
COURSE SYLLABUS

Course Details						
Code			Academic Year			Semester
MEC218			1			Spring
Title			T	A	L	ECTS
Object Oriented Programming			2	0	2	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 completing this module, the students have knowledge of object-oriented programming and basic knowledge of basic data structures. They can name and apply elementary structuring and processing mechanisms (object orientation, modularization, recursion).				
Content		<p>The following concepts are introduced using an object-oriented programming language (Java):</p> <ul style="list-style-type: none">- Object-oriented data modeling with UML- encapsulation- inheritance and polymorphism- abstract classes and interfaces- exception handling- genericity <p>Students deal with these concepts by independently solving, programming and handing in predetermined, relevant programming tasks.</p>				
Prerequisites		None				
Coordinator		Dipl.-Ing. Dr. Burcu Yıldız				
Lecturer(s)		Dipl.-Ing. Dr. Burcu Yıldız				
Assistant(s)		MSc. Nihal Zuhail Kayalı				
Work Placement		None				
Recommended or Required Reading						
Books / Lecture Notes		<ul style="list-style-type: none">- Ulllenboom C. Java ist auch eine Insel. Galileo Computing, 2014.- Grundkurs Programmieren in Java. D. Ratz, J. Scheffelt, D. Seele, J. Wiesenberber. Hanser Verlag, 2006.				
Other Sources		<ul style="list-style-type: none">- Concepts of Programming Languages, Robert W. Sebesta, Pearson Education, 2012.				
Additional Course Material						
Documents		-				
Assignments		-				

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Exams	-		
Digital Applications and Materials			
Learning platform	Google Classroom, Google Meet		
Digital applications	Programming tasks - Submission via Google Classroom		
Course Composition			
Mathematics und Basic Sciences			%
Engineering	40		%
Engineering Design			%
Social Sciences			%
Educational Sciences			%
Natural Sciences			%
Health Sciences			%
Expert Knowledge	60		%
Assessment			
Activity	Count		Percentage (%)
Midterm Exam	1		40
Quiz			
Assignments	6		0
Attendance			
Recitations			
Projects			
Final Exam	1		60
Total			100
ECTS Points and Work Load			
Activity	Count	Duration	Work Load (Hours)
Lectures	14	2	28
Self-Study	1	60	60
Assignments	6	10	60
Presentation / Seminar Preparation			
Midterm Exam	1	3	3
Recitations			
Laboratory			
Projects			
Final Exam	1	10	10

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Total Work Load	159
ECTS Points (Total Work Load / 28)	6

Learning Outcomes

1	Ability to analyze problems, taking into account the required and generated data.
2	Ability to perform object-oriented modeling with UML elements.
3	Knowledge of principles of object-oriented programming.
4	Ability to perform object-oriented programming in Java.

Weekly Content

1	Introduction to object-oriented programming (explanation of the advantages in terms of quality and reusability)
2	Introduction to object-oriented data modeling, class diagrams in UML
3	Introduction to object-oriented data modeling, class diagrams in UML
4	Creation of classes and objects, constructor methods
5	Inheritance and polymorphism
6	Method overloading
7	Type queries and conversions
8	Repetition
9	Mid term exams
10	Genericity
11	Abstract classes and interfaces
12	Interface programming
13	Exception handling
14	Introduction to GUI programming with Java (Java Swing, JavaFX)
15	Repetition

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

	P1	P2	P3	P4	P5	P6	P7
1	5	5	5			3	1
2	5	5	5			3	1
3	5	5	5			3	1
4	5	5	5			3	1

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

<http://bm.tau.edu.tr/learning-objectives-of-the-program>

Compiled by:	RA Ayşe Betül Yüce
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