DEPARTMENT OF COMPUTER SCIENCE
COURSE SYLLABUS

Course Details				
Code		**Academic Year**		**Semester**
MEC105		1		Fall
Title		**T**	**A**	**L**	**ECTS**
Introduction to Computer Science and Programming		2	0	2	6

Language	German					
Level	**Undergraduate**	**X**	**Graduate**		**Postgraduate**	
Department / Program	Mechatronics					
Forms of Teaching and Learning	Lecture, Individual Study.					
Course Type	**Compulsory**	**X**	**Elective**			
Objectives	After successfully completing this module, students are able to describe elementary concepts and methods of computer science. You have knowledge of imperative programming and basic knowledge of basic data structures. They are able to algorithmically convert problems into programs and use the programming languages C and C ++.					
Content	**Introduction to Computer Science** - data representation in computers - coding theory **Introduction to Programming** - algorithm, specification, program - data types, variables, operators - logical expressions, flow control, loops - functions, areas of validity - pointers - enumerations, structures, fields - microprocessor programming with Arduino (optional for interested students) Students deal with these concepts by independently solving, programming and handing in predetermined, relevant programming tasks.					
Prerequisites	None					
Coordinator	Dr.-Ing. Volkan Gezer					
Lecturer(s)	Dr.-Ing. Volkan Gezer					
Assistant(s)	Erdem Onur ÖZYURT, Halit Cenap DEMİR, Ahmet YÜKSELTÜRK, Mustafa Hakan SANDIK					
Work Placement	None					

Recommended or Required Reading	
Books / Lecture Notes	- Hartmut Ernst, Jochen Schmidt, Gerd Beneken. Grundkurs Informatik. Springer Viewek, 2016
Other Sources	- Helmut Erlenkötter. C: Programmieren von Anfang an. Rowohlt Taschenbuch Verlag, 1999.

DEPARTMENT OF COMPUTER SCIENCE
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Additional Course Material		
Documents	-	
Assignments	-	
Exams	-	
Course Composition		
Mathematics und Basic Sciences	20	%
Engineering	20	%
Engineering Design		%
Social Sciences		%
Educational Sciences		%
Natural Sciences		%
Health Sciences		%
Expert Knowledge	60	%

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

ECTS Points and Work Load			
Activity	**Count**	**Duration**	**Work Load (Hours)**
Lectures	14	3	28
Self-Study	1	60	60
Assignments			
Presentation / Seminar Preparation			
Midterm Exam	1	3	3
Recitations			
Laboratory	15	4	60
Projects			
Final Exam	1	10	10
		Total Work Load	**161**

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

Learning Outcomes	
1	Know how different types of data are displayed in computers.
2	Knowledge of number arithmetic in computers.
3	Knowledge of fault-tolerant, compressing and encrypting coding methods
4	Independent development of algorithms in pseudo code and implementation in the programming language C.

Weekly Content	
1	Introduction to computer science, history, data display in computers
2	Number systems and binary arithmetic
3	Programming in C (basic terms: algorithm, flow chart)
4	Programming in C (data types, variables)
5	Programming in C (mathematical and logical operators)
6	Programming in C (if statements, flow control)
7	Programming in C (goto loop construction)
8	Programming in C (loops)
9	Midterm exams
10	Coding and encryption
11	Programming in C (arrays and structures)
12	Programming in C (functions and scope of variables)
13	Programming in C (recursive functions)
14	Programming in C (functions, call-by-value, call-by-reference)
15	Programming in C (pointer)

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

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