

DEPARTMENT OF MATERIALS SCIENCE AND TECHNOLOGY
COURSE SYLLABUS

Course Details				
Code		Academic Year		Semester
NWI102		1		2
Title		T	A	L
Introduction to Programming		2		6
Language	German			
Level	Undergraduate	X	Graduate	Postgraduate
Department / Program	Materials Science and Technology			
Forms of Teaching and Learning	Face to face			
Course Type	Compulsory	X	Elective	
Objectives	<ul style="list-style-type: none"> Understanding the structure, functionality and application of computer systems and computer networks Practical handling of computers and their interfaces Fundamentals of PLC and microcontroller programming Knowledge of the applicability for engineering tasks 			
Content	Computational Information Representation, Boolean Algebra, Matlab - Simulink, Computer Architecture, Operating Systems, Programming Languages (Java and C ++), Computer Networks, Algorithms, Unified Modeling Language, Databases, PLC Programming, IT Security, Microcontrollers			
Prerequisites				
Coordinator	Associate Prof.Dr. Şahin Uyaver			
Lecturer(s)				
Assistant(s)				
Work Placement	No			
Recommended or Required Reading				
Books / Lecture Notes	Algorithmik: Die Kunst des Rechnens, David Harel, Springer, Deutschland, 2006 (Orjinal: Algorithmics: The Spirit of Computing, David Harel, Addison-Wesley, Great Britain , 2004)			
Other Sources	<ul style="list-style-type: none"> Einführung in die Informatik, Heinz-Peter Gumm, Oldenbourg Wissenschaftsverlag, München, 2013. Algorithmik: Die Kunst des Rechnens, David Harel, Springer, Deutschland, 2006 (Orjinal: Algorithmics: The Spirit of Computing, David Harel, Addison-Wesley, Great Britain , 2004) 			
Additional Course Material				
Documents				
Assignments				
Exams				
Course Composition				

DEPARTMENT OF MATERIALS SCIENCE AND TECHNOLOGY
COURSE SYLLABUS

Mathematics und Basic Sciences		40%
Engineering		40%
Engineering Design		%
Social Sciences		%
Educational Sciences		%
Natural Sciences		20%
Health Sciences		%
Expert Knowledge		%

Assessment

Activity	Count	Percentage (%)
Midterm Exam	1	40
Quiz		
Assignments		
Attendance		
Recitations		
Projects		
Final Exam	1	60
Total	2	100

ECTS Points and Work Load

Activity	Count	Duration	Work Load (Hours)
Lectures	15	2	30
Self-Study	15	3	45
Assignments	5	15	75
Presentation / Seminar Preparation			
Midterm Exam	1	2	2
Recitations			
Laboratory	15	2	30
Projects			
Final Exam	1	2	2
Total Work Load			184
ECTS Points (Total Work Load / Hours)			6

Learning Outcomes

1	Understanding the structure, functionality and application of computer systems and computer networks
2	
3	

DEPARTMENT OF MATERIALS SCIENCE AND TECHNOLOGY
COURSE SYLLABUS

4	
5	
6	
7	
8	
9	
10	
11	
12	

Weekly Content

1	How does a computer think? How to interact with it? How does it work?
2	How does a computer think? How to interact with it? How does it work?
3	How does a computer think? How to interact with it? How does it work?
4	How does a computer think? How to interact with it? How does it work?
5	Introduction to data types and structures, logical operators, functions, data analysis
6	Introduction to data types and structures, logical operators, functions, data analysis
7	Introduction to data types and structures, logical operators, functions, data analysis
8	Introduction to data types and structures, logical operators, functions, data analysis
9	Introduction to data types and structures, logical operators, functions, data analysis
10	package management, code profiling and optimization.
11	package management, code profiling and optimization.
12	package management, code profiling and optimization.
13	package management, code profiling and optimization.
14	package management, code profiling and optimization.
15	package management, code profiling and optimization.

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

	P1	P2	P3	P4	P5	P6	P7
1				3		2	
2							
3							
4							
5							
6							
7							
8							



DEPARTMENT OF MATERIALS SCIENCE AND TECHNOLOGY
COURSE SYLLABUS

9							
10							
11							
12							
Contribution Level	1: Low 2: Low-intermediate 3: Intermediate 4: High 5: Very High						
Compiled by:							
Date of Compilation:							