DEPARTMENT OF MECHATRONIC ENGINEERING
COURSE SYLLABUS

Course Details						
Code				**Academic Year**		**Semester**
ETE439				4		7
Title				**T**	**A**	**L**	**ECTS**
Power Electronics				3	1	1	6

Language	German					
Level	**Undergraduate**	X	**Graduate**		**Postgraduate**	
Department / Program	Electrical and Electronics Engineering					
Forms of Teaching and Learning	Face-to-Face					
Course Type	**Compulsory**		**Elective**	X		
Objectives	Teaching the application of electronics to energy conversion and control.					
Content	Modeling, analysis, and control techniques; design of power circuits including inverters, rectifiers, and DC-DC converters; analysis and design of magnetic components and filters; and characteristics of power semiconductor devices.					
Prerequisites						
Coordinator	Prof. Dr. -Ing. J. Krüger					
Lecturer(s)						
Assistant(s)						
Work Placement						

Recommended or Required Reading	
Books / Lecture Notes	
Other Sources	

Additional Course Material	
Documents	
Assignments	
Exams	

Course Composition		
Mathematics und Basic Sciences	10	%
Engineering	40	%
Engineering Design		%
Social Sciences		%
Educational Sciences		%

**DEPARTMENT OF MECHATRONIC ENGINEERING
COURSE SYLLABUS**

Natural Sciences		%
Health Sciences		%
Expert Knowledge	50	%

Assessment		
Activity	**Count**	**Percentage (%)**
Midterm Exam	1	40
Quiz		
Assignments	5	10
Attendance		
Recitations		
Projects		
Final Exam	1	50
Total		**100**

ECTS Points and Work Load			
Activity	**Count**	**Duration**	**Work Load (Hours)**
Lectures	42	1	42
Self-Study	42	1	42
Assignments	5	8	40
Presentation / Seminar Preparation			
Midterm Exam	1	20	20
Recitations	1	0	0
Laboratory	1	0	0
Projects			
Final Exam	1	24	24
Total Work Load			**169**
ECTS Points (Total Work Load / Hour)			**6**

Learning Outcomes	
1	Energy conversion and use of electronics in control
2	
3	
4	
5	
6	
7	

DEPARTMENT OF MECHATRONIC ENGINEERING
COURSE SYLLABUS

8	
9	
10	
11	
12	

Weekly Content	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

Contribution of Learning Outcomes to Program Objectives (1-5)												
	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12
1	5	5	5	5	5	5	5	5	5	5	5	5
2												
3												
4												
5												
6												
7												
8												
9												
10												

DEPARTMENT OF MECHATRONIC ENGINEERING
COURSE SYLLABUS

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