

SYLLABUS: SYSTEM DESIGN 2

Date / Revision August 22, 2017 / 22.08.17 /MaS
Faculty Engineering
Study Programm Mechatronics

SUBJECT: System Design 2

1 Basic Information

1.01	Subject Name	System Design 2
1.02	Semester	6
1.03	Level	2
1.04	SKS	3
1.05	Mandatory / Curriculum	Mandatory / F-15
1.06	Subject Code	SYSD
1.07	Subject Code	ENG-F-SYSD-6215
1.08	Year	2017 (7)
1.09	Quality Control	Final Test, see evaluation
1.10	Limitations	Min 12 and Max 32 students in one class
1.11	Combined with	MEE, ELE
1.12	Perquisite	Mechanical-, Electronics, Microcontroller, Sensor and programming
1.13	Responsible	Dean of Engineering Faculty
1.14	Revision	22-08-2017/MaS

2 Description of Subject

This course is designed to provide basic information and an overview of the telecommunications principle. The course covers the telecommunication principles, standardization and regulation, the evolution of data communications, the data protocols, analog- and digital-modulation and demodulation.

3 Objectives

- to integrate the mechatronics knowledge into designing and building of a mechatronic system

4 Competency

After having the course, students are expected have to:

- Apply product design techniques to the development of mechatronic systems;
- Design and build a simple mechatronic product using the correct method and tools;
- Manage a mechatronic-engineering project, from a scratch into the product;
- write the documentation of the project;
- Demonstrate the presentation skills in front of the class to explain the project-product
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5 Learning Approach / Methodology

- Lectures/ Class contact (time-tabled) supplemented with interactive questions and answers;
- Discussion, design a simple mechatronics product, sample problem, group work;
- Student Study Effort: writing project proposal, project work design and building, writing project report, presentation,

6 Evaluation

5.1	Absence maximum	25%
5.2	Participation in Discussion	05 Points
5.3	Homework / Classwork	05 Points
5.4	Presentation /Simulation	10 Poin
5.5	Daily Quiz	20 Points
5.6	Final Examination	60 Points
	Total	100 Points

7 Text Book and Reference

1	<p>Main Text Book: Bolton W., " <i>Mechatronics: Electronic Control Systems in Mechanical and Electrical Engineering - 6th Edition</i>", Pearson Education - International Edition, 2015, ISBN: 978129207668-3</p>
2	<p>Supplementary Text books:</p> <ul style="list-style-type: none"> • Alciatore, D.G. and Histand, M.B., " <i>Introduction to Mechatronics and Measurements Systems</i>", Mc-Graw-Hill, 2003 • R. Isermann, " <i>Mechatronische Systeme – Grundlagen</i>", Springer-Verlag, Berlin, 1999

8 Content / Topics of Lecture

Week	Content/ Topics of Lecturing	Text Book	Remark
1	<ul style="list-style-type: none"> • Introduction and Explanation of the course structure • Distributing the task to each student • Project Proposal writing and discussion 		
2	Discussion on Project Design <ul style="list-style-type: none"> • Mechanical system: Technical Drawing (CAD), calculation of forces and torque, review of design • Electrical/electronic circuit design, review and discussion 		
3	Presentation 1: Progress of project design		
4-6	Discussion on Project Design <ul style="list-style-type: none"> • Mechanical system: review and discussion • Electrical/electronic circuit: review and discussion 		
7	Presentation 2: Progress of project design		
8	MIDTERM SEMESTER BREAK		
9-10	Discussion on Project <ul style="list-style-type: none"> • Mechanical system: design implementation and discussion • Electrical/electronic circuit: design implementation and discussion 		
11	Presentation 3: Progress of project design		
12-14	Discussion on Project <ul style="list-style-type: none"> • Mechanical system: design implementation and discussion • Electrical/electronic circuit: design implementation and discussion 		
15	Presentation 4: Progress of project design		
16	Final Examination		