

General Information:

Name of Course:

TECHNICAL SYSTEM ENGINEERING (BSC)

Course Code:

PMTMINM213HA

Semester:

Number of Credits:

Allotment of Hours per Week:

1 Practical Lessons + 2 Lectures/Week

Evaluation:

Exam

Prerequisites:

Measurement and Signal Processing

Instructors:

Dr. Adam SCHIFFER, assistant professor

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Introduction, Learning Outcomes, Objectives:

The course is designed to introduce students to the key concepts of systems theory, correlations and mathematical tools of computational and simulation methods for linear systems, time and frequency domains. Theoretical knowledge is shown through concrete practical examples, and this will be helped by the problem-solving computer simulation sessions.

Schedule:

The rough outline of the schedule is as follows:

Week 1-2: Basic notions, symbols and classification of the systems, definitions, state, condition variables, state equations the general context of dynamic systems, the notion of stability.

Week 3: Pollack Exhibition

Week 4-5: Investigation in the time domain. Frequency domain and Laplace-operator

Week 6: Application of Transfer Function

Week 7-8: Bode and Nyquist diagrams

Week 9: Systems Modeling and Analogies

Week 10: Different linear systems I. (P,I,D,PI)

Week 11: SPRING HOLIDAY

Week 12: Different linear systems II. (PD, PH, PT1, PT2)

Week 13: IIR and FIR filtering I.

Week 14: IIR and FIR filtering II.

Attendance:

Attending is required all classes, and will impact the grade (max. 10%). Unexcused absences will adversely affect the grade, and in case of absence from more than 30% of the total number of lesson will be grounds for failing the class. To be in class at the beginning time and stay until the scheduled end of the lesson is required, tardiness of more than 20 minutes will be counted as an absence. In the case of an illness or family emergency, the student must present a valid excuse, such as a doctor's note.

The highest possible grade on the late project (in two weeks) is '2'. The Final Project cannot be turned in late.

Evaluation + Grading

Grading will follow the course structure with the following weight:

Homework: 40% + Exam: 60%

Grading Scale:

Numeric Grade:	5	4	3	2	1
Evaluation in points:	88%-100%	76%-87.5%	63%-75%	50%-62.5%	0-49%

Students with Special Needs:

Students with a disability and needs to request special accommodations, please, notify the Deans Office. Proper documentation of disability will be required. All attempts to provide an equal learning environment for all will be made.

Readings and Reference Materials:

Required:

1. Course Notes (available on the NEPTUN system)
3. Alan Oppenheim, Alan Willsky, S. Hamid: Signals and Systems