### Control Engineering 2. - IVB198ANVM

Lecture/Practice/Lab: 2/1/0

Credit points: 3

Requirement: Exam

Semester: Spring, 4/7

Prerequisites: Engineering Mathematics 2.

Lecturer: Zsolt Kisander

Department: Department of Automation

This subject introduces students to LTI systems engineering with the necessary mathematical and modeling toolset.

#### Lecture topics

Lecture topics follow the recommended textbook’s chapters.

1. Introduction to LTI systems
2. Modeling in the frequency domain
3. Modeling in the time domain
4. State-space representation
5. Time response
6. Reduction of multiple subsystems
7. Stability

#### Lab topics

Lab topics follow the lectures with MATLAB exercises.

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#### Midterm requirements and fulfillment

Students must be present on more than 70% of contact classes and/or consultations. Having more than 30% absence results in signature refusal.

Midterm assessments:

* One written test after the 10th week (lecture topics). The exact schedule will be voted on by the students.
* One MATLAB homework with 15th week deadline (practice topics)

Students have to complete each assessment with a passing grade to get the signature and the midterm grade. The midterm grade is the arithmetic mean of the assessment results.

| Mark | 5 | 4 | 3 | 2 | 1 |
| --- | --- | --- | --- | --- | --- |
| Grade | Passing | | | | Failed |
| Limits (%) | 85 | 70 | 55 | 40 | < 40 |

#### Exam requirements

Students who pass midterm requirements are eligible to take the exam (oral). The exam topics follow the Lecture topics and the up-to-date exam topics will be available after the spring break.

#### Failing the requirements

The Code of Studies and Examinations of the University of Pécs is applicable in general.

* Students have one midterm test retake opportunity before the exam period.
  + Schedule: 15th week’s lecture
  + Format: same as the test
* Students without signature have one opportunity to earn a passing midterm grade and signature in the exam period.
  + Schedule: 1st week of the exam period, lecture time
  + Format: written test and a new homework with oral presentation

#### Recommended literature

Control Systems Engineering 7th ed., Norman S. Nise, 2014.