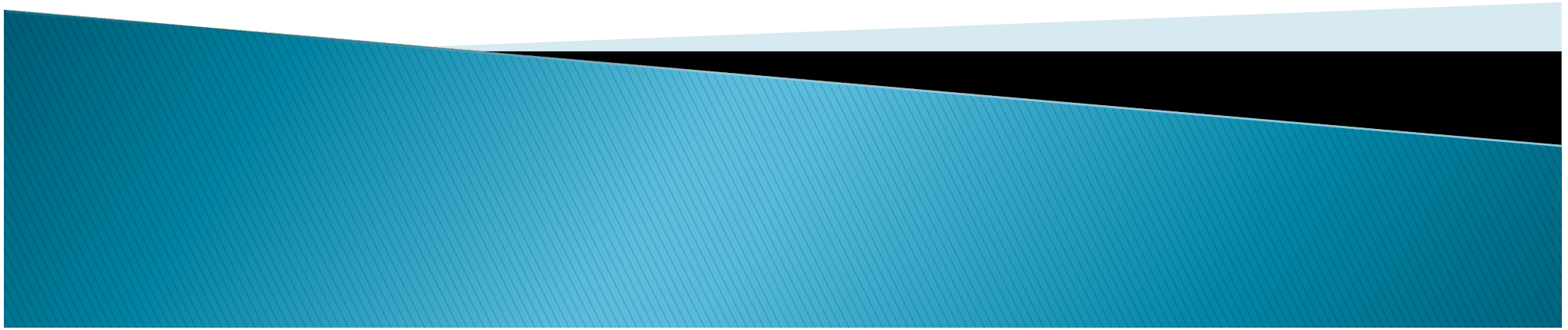
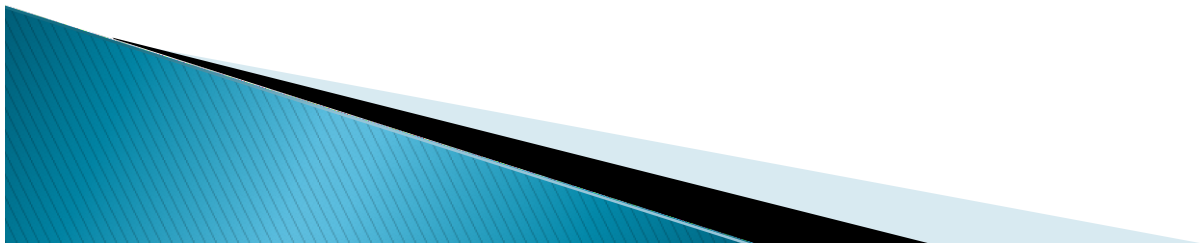
ISS0023
Intelligent Control Systems
Arukad juhtimissüsteemid

Eduard Petlenkov,
Associate Professor,
TUT Department of Computer Control
eduard.petlenkov@ttu.ee



Introductory lecture

- How study work is organized?
- Content/ Preliminary plan
- Exam / evaluation criteria



Study work

Groups: IASM12, MAHM31, MAHM32 + Exchange students

Lectures + practices

Lecturs: SOC-212- Even weeks

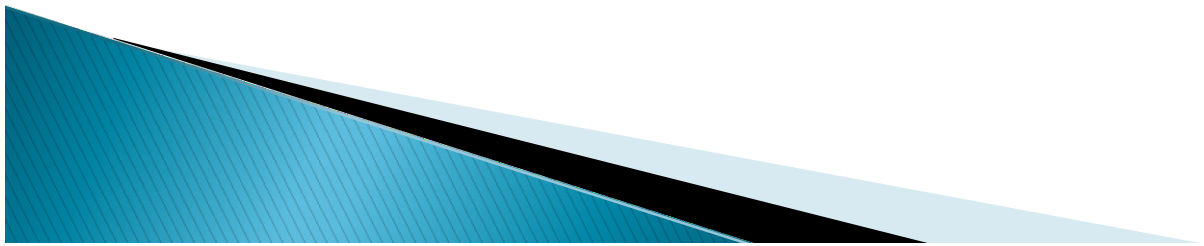
Practices: laboratories U02-303,304
(max. 30 persons) - ODD WEEKS
Wednesday 14:00
Wednesday 16:30
Thursday 14:30

Exam is practical - in the laboratory.
First possibility to take the exam is 16th study week

http://www.a-lab.ee/edu
http://www.a-lab.ee/edu/ISS0023

Semester plan

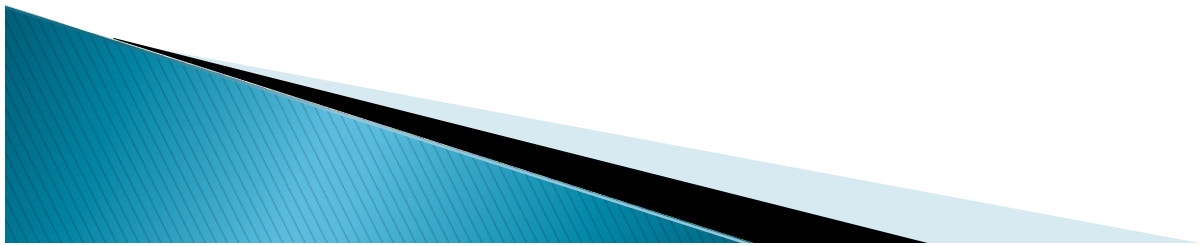
- Adaptive Systems
- Artificial Neural Networks
  - Structures of artificial neural networks and training algorithms;
  - Artificial neural networks based identification of nonlinear systems;
  - Artificial neural networks based control of nonlinear systems;
  - Artificial neural networks based image recognition and pattern classification;
  - Self-organizing systems;



Preliminary semester plan by weeks

- Dynamic Feedback Linearization based Control of Nonlinear Systems
- Introduction to Fuzzy Systems and
- Genetic algorithms, combined approach;
- Fractional order modelling and control (see http://fomcon.net/)
  - Lecture weeks nr. 2, 4, 6, 8, 10, 12, 14.
  - Practice weeks nr. 3, 5, 7, 9, 11, 13, 15

Week nr. 16 – exam



Lab reports

6 labs = 6 reports

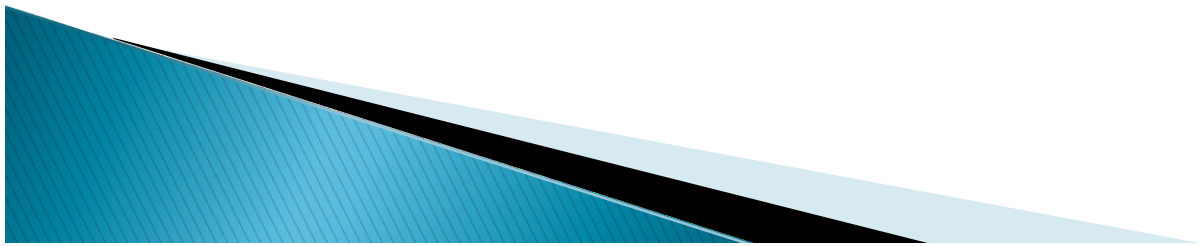
Each report gives up to 1 point.

Each report has to be presented during 2 weeks after the lab!

Later presented reports (before December 23) – multiplied by coefficient 0.8

After December 23 – coefficient 0.6

5 best report will give up to 5 points.



Exam

- Exam prerequisites:
  - Course ISS0023 is declared (included into Your semester plan),
  - Laboratory trainings are performed,
  - Reports are presented and accepted

- Exam – up to 72 hours
  - Small practical project – design of a control system according to given control criteria;
  - Simulation of the control system;
  - Analysis of results and writing a report;
  - 2 tasks – each one gives maximum 5 points.

Average of 2 exam tasks and labs = YOUR COURSE GRADE