EPFL

EE-611	**Linear system theory**
	Müllhaupt Philippe

Cursus	Sem.	Type
Electrical Engineering		Opt.
Robotics, Control and Intelligent Systems		Opt.

Language of teaching	English
Credits	4
Session	
Exam	Multiple
Workload	120h
Hours	**56**
Courses	28
Exercises	28
Number of positions	

Frequency

Every 2 years

Remark

Next time: Fall 2020

Summary

The course covers control theory and design for linear time-invariant systems : (i) Mathematical descriptions of systems (ii) Multivariables realizations; (iii) Stability ; (iv) Controllability and Observability; (v) Minimal realizations and coprime fractions; (vi) Pole placement and model matching.

Content

The course contents include the following main chapters:
 • Mathematical description of linear systems
 • State-space solutions and realizations
 • Stability
 • Controllability and observability
 • Minimal realizations and coprime fractions
 • State feedback and state estimation

Keywords

Linear dynamic models, Linear systems, Stability, State feedback, State estimation.

Learning Prerequisites

Recommended courses

 • Linear Algebra
 • Differential Equations
 • Automatic Control

Assessment methods

Written exam and oral presentation.