**Summary**

The course covers control theory and design for linear time-invariant systems: (i) Mathematical descriptions of systems; (ii) Multivariable 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.