Objectives
The aim of this course is to provide the mathematical foundations for the analysis of linear control problems and controller synthesis.

Contents
Brief introduction to models for linear multivariable (MIMO) systems – state space models, transfer functions. Stabilization and state detection. Study of different control problems (reference tracking, linear optimal control, etc.)

Evaluation
1 take-home (TH) and 1 final exam (FE)

Final mark = 0.4 (TH) + 0.6 (FH)

Pre-requisites
Basic notions of differential equations, complex analysis and linear algebra

Bibliography – main reference

Bibliography – other references
Title: Análise de Sistemas Lineares
Author: Maria Isabel Ribeiro
Editor: IST Press
Year: 2002

Title: Introduction to Mathematical Systems Theory. Linear Systems, Identification and Control
Authors: Christiaan Heij, André Ran, F. van Schagen
Editor: Birkhäuser
Year: 2007