Bienvenue – Welcome

Mechanical Engineering
SGM Contacts

Director

Prof. François Gallaire

Deputy

Dr. Alain Prenleloup

Secretary

Mrs Anne Legrand

Exchange study advisor:

Prof. Giancarlo Ferrari Trecate

All about your SGM contacts

https://sti.epfl.ch/research/institutes/igm/education/directors-office/
SGM MSc domains/specializations

6 DOMAINS

Mechanics of solids and structures

Energy and thermal sciences

Biomechanics

Fluid mechanics

Control and mechatronics

Design and manufacturing

https://sti.epfl.ch/research/institutes/igm/education/master/
Rules and procedures

Bachelor & Master studies
- Study plans and regulations
- Academic calendar
- Internships
- Minors
- Master's projects
- Registering for courses and exams
- Timetables for courses and exams
- Requirements for passing
- Reassessment request and appeal
- Teaching languages
- Study taxes
- End of studies and reregistration
- Matriculation of new students
- Program transfer

Doctoral studies
- Regulations
- Doctoral course books
- About Doctoral courses
- Forms - Doctoral School
- Doctoral Studies Structure
- Internal Regulations
- Guideline IS-Academia
- Citations
- Compliance Guide
Courses: choice and registration

- Create your study plan for up to 3 semesters
- Can choose courses from other EPFL master programs, if your University allows for it

- MANDATORY: register for courses in IS-Academia before the end of the 2nd week of the semester
  - Your Learning Agreement is not enough
  - Registering implies automatic registration for the exam

- Exam withdraw until the 10th week’s semester
  - For some courses (tagged “sans retrait”) withdrawal is not allowed after the registration deadline - highlighted with an alert in the registration tab on IS-Academia.
Academic calendar

Memento Academic Calendar

Academic year
2018-2019
18.9 - 21.12.18: Courses
14.1 - 2.2.18: Exams
18.2 - 31.5.18: Courses
17.6 - 6.7.18: Exams
2019-2020
17.9 - 21.12.19: Courses
13.1 - 12.2.20: Exams
17.2 - 29.5.20: Courses
15.6 - 4.7.20: Exams
© Academic year

FILTER YOUR SEARCH

< September 2019 >

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Enrolment for new master students
11.09.2019 - 12.09.2019
Category: Academic Calendar

Course "Apprendre à étudier à l'EPFL"
12.09.2019
Category: Academic Calendar

Welcome day for new students
13.09.2019
Category: Academic Calendar

Online application deadline for prospective PhD students in the EDAM, EDAR, EDCE, EDCH, EDDH, EDEE, EDEY, EDMA, EDME, EDMI, EDPO and EDRS doctoral programs
15.09.2019
Category: Academic Calendar

Jeûne Fédéral (public holiday)
16.09.2019
Category: Academic Calendar

Autumn semester courses start
17.09.2019
Category: Academic Calendar

https://memento.epfl.ch/academic-calendar/?period=180
Courses: learning prerequisites

Advanced control systems

NR: 514

Enseignant(e)s: [Name]

Langue(s): English

Withdrawal: It is not allowed to withdraw from this subject after the registration deadline.

Summary

This course covers some theoretical and practical aspects of robust and adaptive control. The focus is on control design with an emphasis on performance, digital design with pole placement technique, direct and indirect adaptive control and implementation in a hands-on lab.

Content

- Stability, performance and robustness of single-loop control systems.
- Robust control design via loop shaping.
- Robust stability of control design in the frequency domain.
- Multi-variable decoupling control design.
- Quantification of controller design.

Two-degree-of-freedom/PI controllers, Pole placement technique and its relation to Internal Model Control (IMC), Model Reference Control (MRC) and Minimum Variance Control (MVC).

Robust pole placement with Q-parametrization. Parameter adaptation algorithms. Direct and indirect adaptive control. Switching adaptive control.

Keywords

Adaptive control, robust control, digital control.

Learning Prerequisites

Required courses

- Control systems + Lab

Recommended courses

1. Control Systems
2. System Identification
3. Multivariable systems

Important concepts to start the course

- Analyze a linear dynamical system (both time and frequency responses)
- Represent a linear system by a transfer function
- Identify a dynamic system using experimental data
- Design a PID controller
- Design a simple controller for a dynamic system

Learning Outcomes

By the end of the course, the student must be able to:

- Design an advanced controller for a dynamic system, A11
- Assess the stability, performance and robustness of a closed-loop system, A12
- Define specifications (adequate control performance for dynamic systems, A13

Semaine de référence

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Légende

- Cours
- Exercice, TP
- Projet, autre

SGM
Restricted courses

https://www.epfl.ch/education/international/fr/venir-etudier-a-l-epfl/semestres-cours/conditions/
Semester projects

- Semester projects in Mechanical Engineering
  - Project I: mandatory for EPFL students (10 ECTS)
  - Project II: elective for EPFL students (10 ECTS)
    - Starting date: semester’s starting day
    - Report handing-in date: a few days before the corresponding exam session

- Registration procedure
  - Find the project by yourself
    https://inside.epfl.ch/projets-etudiants-sti/students-projects-sgm/
  - Register for the project in IS-Academia and print the registration form
  - Get the form signed by the SGM teacher in charge of the project
  - Submit the signed form to SGM

https://sti.epfl.ch/research/institutes/igm/education/useful-documents/
Other types of projects

- Specific for exchange students
  - EPFL-301 “Project specifique pour etudiant d’échange et visiteur”. The number of credits can be adapted.
    - As for semester projects, you have to find the project by yourself

- Bachelor-level project
  - “Projet d'Ingegnerie Simultanée» – 5 credits
    - During the spring semester
    - MANDATORY registration before November 30th – send an email to the SGM secretary Mme Legrand
SHS (Social and Human Sciences)

The SHS program is over two semesters (fall and spring)
REGISTER NOW!
Important for exchange students

For students who followed courses at EPFL as exchange students and apply for an EPFL Master's Program:

- If some Master credits obtained during your exchange program were not used at your university of origin, you will be able to validate them for your Master's Program at EPFL (30 credits maximum).

https://www.epfl.ch/education/admission/master-admission-criteria-application/
Welcome page for exchange students

STUDENTS ASSOCIATION IN MECHANICAL ENGINEERING

-> Your association!

https://amac.epfl.ch/
Association for exchange students

Welcome Week
September 9th - 15th
2019

Welcome Weekend

ESN Lausanne
Welcome Week | Olympic Museum
11/09/2019 - 10:00 to 12:00

ESN Lausanne
Welcome Week | Olympiads BBQ
11/09/2019 - 13:00 to 21:00

ESN Lausanne
Welcome Week | Free Breakfast
12/09/2019 - 09:00 to 11:30

17/07/2018 - 22:52
Registration for the Welcome Week coming soon!

17/07/2018 - 22:18
Fall 2018 - Buddy System registrations open!

29/05/2018 - 19:33
Newly Elected Board Members for Fall 2018!

01/09/2017 - 11:35

ESN EPFL is a student association whose purpose is to help international and exchange students in Lausanne make the best of their stay in Switzerland. To achieve this, we organize a wide range of events, from city tours to sport weekends, thematic parties, international dinners, and trips throughout the country. To answer the desire for integration and cultural understanding of students, we also set up a Buddy Matching system each semester, and are always willing to collaborate with other associations from EPFL and UNIL.

Our association is part of the Erasmus Student Network and of AGEpol.

https://epfl.esn.ch/
Individual support for students

Problèmes financiers
Stress et difficultés d’organisation
Mal-être (anxiété, tristesse, isolement, dépendances, pression...)
Soucis familiaux et relationnels (intégration, harcèlement...)
Questionnements sur les études (motivation, orientation...)
Aménagement des études (maladie chronique, situation de handicap, difficulté d’apprentissage...)

go.epfl.ch/soutien-individuel

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+41 21 693 43 45
Questions ?