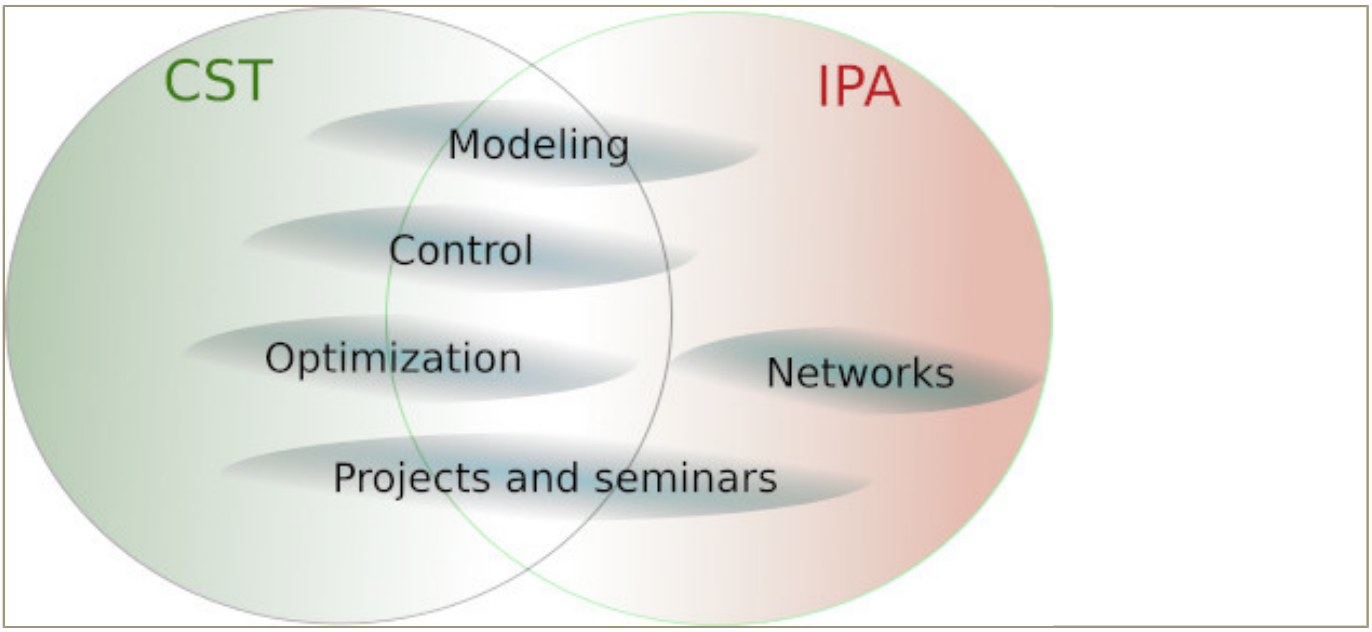
Master Electronique, énergie électrique, automatique

# Parcours Electrical Engineering and Control Systems / MISCIT 2è année

## Présentation

Control and information technology components are increasingly used in complex engineering systems. The pervasive infiltration of computer systems (embedded systems and networks) in engineered products and in society requires new insights and ideas in engineering research, education and entrepreneurship. Model-based system integration methodology combined with an overall emphasis on compositional design methodology then appears as a crucial issue in modern process automation and research in automatic control. The proposed curriculum consequently includes advanced topics in control-oriented modeling, systems theory, supervision communication networks and real-time operation, along with the more classical multi-objective and discrete-events control issues. Our aim is to provide high level knowledge and skills for research and developments (R&D) in process automation, from the latest theories to their applications.




## Admission

### Conditions d'admission

This two-semester program is a specialty (second and last year, master 2nd year in the French system) of the master Electrical Engineering and Control Systems (EECS). The French master is 2 year, but if you have the appropriate background, the first year may be validated as equivalent and at the end of the one-year MiSCIT program you obtain a diploma corresponding to 2 years of studies (master EECS, MiSCIT specialty diploma). We welcome students who obtained (by the end of spring at the latest) :

- at least 180 ECTS for the students in an exchange program who wish to join MiSCIT for one semester in order to validate specific classes in their home institution
- at least 240 ECTS (typically 4 years of University studies) for students wishing to validate the master 2nd level

For students from foreign countries who completed a full Bachelor program of 4 years or more, your application will be evaluated by a specific jury (called the *Commission de Validation des Acquis*).

Requirements. In order to apply to this master program, the prospective student should:

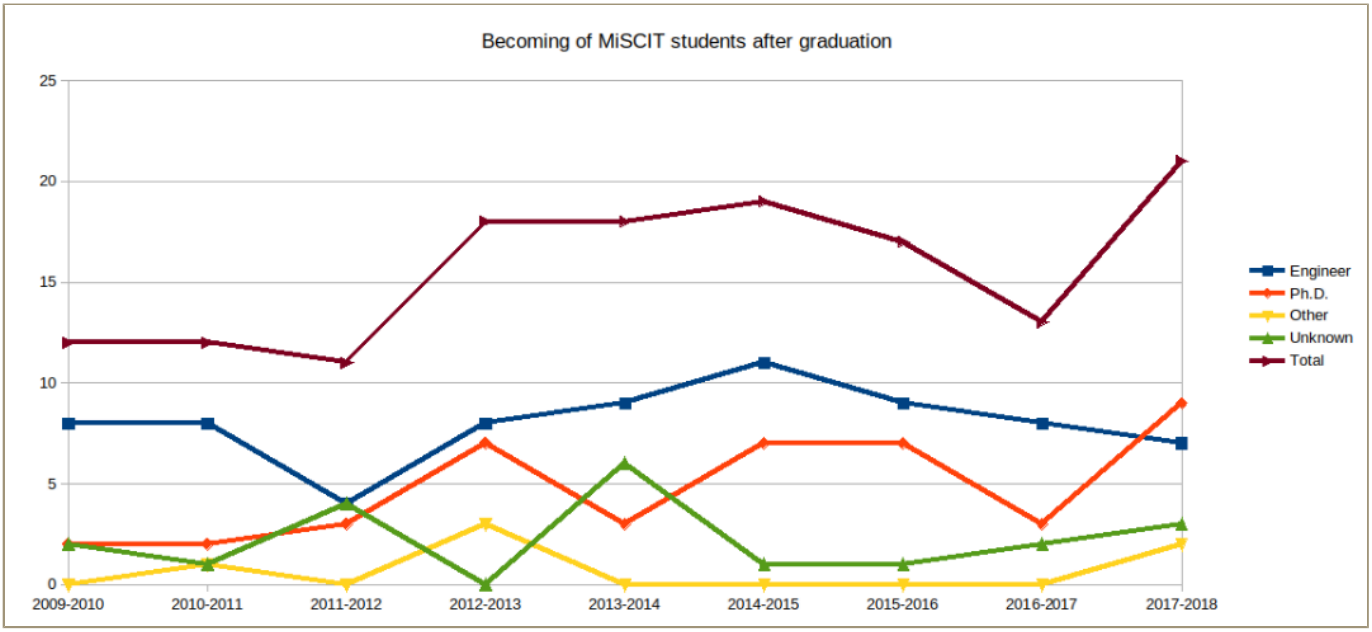
- hold a master 1, bachelor or equivalent degree completed after four full years of University studies
- have followed basic classes and obtained top grades in Automatic Control and, for IPA prospective students, in Communication Systems.
- prove an English proficiency with CEFR (B2), TOEFL (IBT 87-109), IELTS (5.5-6.5), TOEIC (785-945) or equivalent. Students coming from English-speaking countries or/and who had a University curriculum in English are considered proficient enough. If you don't have the opportunity to take the test in your home University, an English test is organized during the first week of the classes, to check the level of everyone.

Public continuing education. Your application is handled by the "continuing education" office:
• if you resume your studies after 2 years of interruption of studies
• or if you followed training under the continuous training regime one of the previous 2 years
• or if you are an employee, job seeker, self-employed

### Droits de scolarité

Droits de scolarité 2023-2024: 243€ + 100€ CVEC

## Insertion professionnelle




## Infos pratiques :

> Composante : UFR PhITEM (physique, ingénierie, terre, environnement, mécanique)
> Lieu : Grenoble - Polygone scientifique

# Contacts

## Responsables pédagogiques

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## Secrétariat de scolarité

Gestionnaire
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## Responsable formation continue

Di Ruzza Laura
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# Programme

## Master 2e année

### Semestre 9 OPTION CST

| | |
|---|---|
| **UE Multi-objective control** | 6 ECTS |
| **UE Modeling and system identification** | 3 ECTS |
| **UE Nonlinear and predictive control** | 6 ECTS |
| **UE Adaptive control systems** | 3 ECTS |
| **UE Design project 1** | 3 ECTS |

1 option(s) au choix parmi 2

| | |
|---|---|
| **UE Efficient methods in optimization** | 3 ECTS |
| **UE Modeling and control of PDE** | 6 ECTS |
| **UE Embedded control and modeling labs** | 3 ECTS |
| **UE Supervision and diagnosis** | 3 ECTS |

1 option(s) au choix parmi 1

| | |
|---|---|
| **UE Anglais - Master 2 - Semestre 9** | 3 ECTS |
| **UE Français Langue Etrangère (FLE)** | 3 ECTS |

### Semestre 9 OPTION IPA

| | |
|---|---|
| **UE Multi-objective control** | 6 ECTS |
| **UE Modeling and system identification** | 3 ECTS |
| **UE Adaptive control systems** | 3 ECTS |
| **UE Design project 1** | 3 ECTS |
| **UE Embedded control and modeling labs** | 3 ECTS |
| **UE Supervision and diagnosis** | 3 ECTS |
| **UE Network applications** | 6 ECTS |

1 option(s) au choix parmi 1

| | |
|---|---|
| **UE Anglais - Master 2 - Semestre 9** | 3 ECTS |
| **UE Français Langue Etrangère (FLE)** | 3 ECTS |

### Semestre 10 OPTION IPA

| | |
|---|---|
| **UE Project management and seminars** | 3 ECTS |
| **UE Internship** | 24 ECTS |
| **UE Systems Reliability and Maintenance** | 3 ECTS |

### Semestre 10 OPTION CST

| | |
|---|---|
| **UE Project management and seminars** | 3 ECTS |
| **UE Internship** | 24 ECTS |
| **UE Reinforcement learning and optimal control** | 3 ECTS |