

Master Electronique, énergie électrique, automatique

## Parcours Master in Systems, Control and Information Technologies (MiSCIT)

### Présentation

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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.

<http://www.gipsa-lab.fr/MiSCIT/home/>

### Admission

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This two-semester program is a specialty (second and last year, master 2nd year in the French system) of the master Electronique, Electrotechnique, Automatique et Traitement du Signal (EEATS). The French master is 2 year, but when you apply a centralized University board examines your application to grant you, if suitable, the first year as equivalent and at the end of the one-year MiSCIT program you obtain a diploma corresponding to 2 years of studies (master EEATS, 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*).

Requirement: 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 in Automatic Control
- 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.

For applicants whose country of residence does not fall under the "Study Portal in France" (PEF), the schedule of the application campaigns for the eCandidat application is available.

For more informations : <http://www.gipsa-lab.fr/MiSCIT/admission.php>

Public continuing education : You are in charge of continuing education :

- 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

Vous souhaitez candidater et vous inscrire à cette formation ? Rendez-vous sur le site internet de l'UGA, [rubrique candidater et s'inscrire](#)

## Insertion professionnelle

Lors de l'enquête 2014-2015, 3 diplômés répondants sont sur le marché du travail (emploi+recherche). Parmi eux, 100% occupent un emploi 30 mois après leur diplôme.

## Infos pratiques :

- > Composante : UFR PHITEM (physique, ingénierie, terre, environnement, mécanique)
- > Durée : 2 ans
- > Type de formation : Formation initiale / continue
- > Lieu :

## Contacts

### Responsable pédagogique

Ferrante Francesco  
 francesco.ferrante@univ-grenoble-alpes.fr

### Secrétariat de scolarité

Gestionnaire  
 phitem-master-eea@univ-grenoble-alpes.fr

Demande de candidature  
 phitem-candidature-etudiant@univ-grenoble-alpes.fr

### Responsable formation continue

Contact FC STS  
 fc-sts@univ-grenoble-alpes.fr

## Programme

### Master Systèmes d'énergie électrique (SEE) 1re année

#### Semestre 7

UE Représentation d'Etat	3 ECTS
UE Gestion de projet entrepreneurial	3 ECTS
UE Automates et systèmes embarqués	6 ECTS
UE Réseaux de puissance	3 ECTS
UE Machines électriques	3 ECTS
UE Synthèse de convertisseurs	3 ECTS
UE Structures de convertisseurs	3 ECTS
UE Composants passifs	3 ECTS

UE Projet SEE part 1 3 ECTS

#### Semestre 8

UE SISO Feedback control	3 ECTS
UE Compatibilité électromagnétique	3 ECTS
UE Stage	6 ECTS
UE Variation de vitesse	3 ECTS
UE Modélisation des systèmes de puissance	3 ECTS
UE Electronique de puissance avancée	3 ECTS

<b>UE Projet SEE part 2</b>	3 ECTS
<b>UE Projet SEE part 3</b>	3 ECTS
1 option(s) au choix parmi 2	
<b>UE Anglais</b>	3 ECTS
<b>UET</b>	

## Master Systèmes électroniques (SE) 1re année

### Semestre 7

<b>UE Représentation d'Etat</b>	3 ECTS
<b>UE Gestion de projet entrepreneurial</b>	3 ECTS
<b>UE Automates et systèmes embarqués</b>	6 ECTS
<b>UE Traitement du signal avancé et aléatoire</b>	3 ECTS
<b>UE Electronique radio-fréquence</b>	3 ECTS
<b>UE Systèmes de transmission analogique et numérique</b>	3 ECTS
<b>UE Systèmes d'exploitation (C,C++)</b>	3 ECTS
<b>UE Projet SE part 1</b>	3 ECTS
<b>UE Projet SE part 2</b>	3 ECTS

### Semestre 8

<b>UE SISO Feedback control</b>	3 ECTS
<b>UE Compatibilité électromagnétique</b>	3 ECTS
<b>UE Stage</b>	6 ECTS
<b>UE Antennes</b>	3 ECTS
<b>UE Codage et théorie de l'information</b>	3 ECTS
<b>UE Systèmes d'exploitation temps réels (OS, RTOS)</b>	3 ECTS
<b>UE Conception en micro-nano électronique</b>	3 ECTS
<b>UE Projet SE part 3</b>	3 ECTS
1 option(s) au choix parmi 2	
<b>UE Anglais</b>	3 ECTS
<b>UET</b>	

## Master 2e année

### Semestre 9 option CST

<b>UE Multi-objective control</b>	6 ECTS
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<b>UE Modeling and system identification</b>	3 ECTS
<b>UE Discrete event systems</b>	3 ECTS
<b>UE Modeling and control of PDE</b>	6 ECTS
<b>UE Nonlinear and predictive control</b>	6 ECTS
1 option(s) au choix parmi 2	
<b>UE Design project 1</b>	3 ECTS
<b>UE Efficient methods in optimization</b>	3 ECTS
1 option(s) au choix parmi 2	
<b>UE Anglais</b>	3 ECTS
<b>UE Français Langue Etrangère (FLE)</b>	3 ECTS

### Semestre 9 option IPA

<b>UE Multi-objective control</b>	6 ECTS
<b>UE Modeling and system identification</b>	3 ECTS
<b>UE Discrete event systems</b>	3 ECTS
<b>UE Embedded control and modeling labs</b>	3 ECTS
<b>UE Communication systems</b>	3 ECTS
<b>UE Supervision and diagnosis</b>	3 ECTS
<b>UE Network applications</b>	6 ECTS
1 option(s) au choix parmi 2	
<b>UE Français Langue Etrangère (FLE)</b>	3 ECTS
<b>UE Anglais</b>	3 ECTS

### Semestre 10 option CST

<b>UE Project management and seminars</b>	3 ECTS
<b>UE Internship</b>	24 ECTS
<b>UE Design project 1</b>	3 ECTS

### Semestre 10 option IPA

<b>UE Introduction to data assimilation</b>	3 ECTS
<b>UE Project management and seminars</b>	3 ECTS
<b>UE Internship</b>	24 ECTS