SCIENCES, TECHNOLOGIES AND HEALTH

Wireless integrated circuits and systems (WICS)

Master in Electronics, electrical energy, automation

Duration
2 years

Component
UFR PhITEM (physique, ingénierie, terre, environnement, mécanique)

Language(s) of instruction
English

Presentation

The WICS (Wireless integrated circuits and systems) master is a master degree focusing in integrated circuit and system design for Analog/Mixed/RF & millimeterwave applications. It gives students the opportunity to learn advanced skill sets with projects led by high-level research units ; the techniques and methodologies they will need to promote their research on an international level will be studied.

With a **curriculum focusing on theoretical knowledge supported by practical applications**, the WICS master prepares students for a career in both the **international research community and the professional applications**. As they finish their training, graduate students are fully ready to pursue a career in thriving fields such as the Internet of Things, future wireless communication systems, sensor networks, or medical applications.

Foreign place(s) : Turin

International education : Internationally-oriented programmes

International dimension

- The **WICS master is taught in English** by French and foreign teachers and/or researchers from universities and companies. It will allow preparing students for a career in both the international research community and the professional applications
- A **double degree with Politecnico di Torino** has been created. It concerns master WICS in France (at the UGA and Grenoble INP), Laurea magistrale in Ingegneria elettronica in Italy (at Politecnico di Torino). The first year of this program is taught at PoliTo, the second year at UGA/ Grenoble INP.

Admission

Access conditions

- **1st year of master WICS degree :** The prospective student should have completed at least **three full years of university** studies (180 ECTS)
- **2nd year of master WICS degree :** The prospective student should have completed at least **four full years of university** studies (a first year of Master's degree, bachelor or equivalent degree with 240 ECTS), have followed basic classes in Electronics and Radio Frequency, 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

- **Double degree program :** The prospective student should have completed at least three full years of university studies (180 ECTS) in the fields of Electronics or Applied physics, prove an English proficiency with CEFR (B1), IELTS (5.0), or equivalent as a minimum. Both certificates from an accredited institution and/or statements from the home institution are accepted

For candidates whose country of residence is not included in the "Studies in France" portal (PEF) scheme, the calendar for the eCandidat application campaigns is available here

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

If you do not have the diploma required to integrate the training, you can undertake a validation of personal and professional achievements (VAPP)

Candidature / Application

You want to apply and sign up for a master ? Please be aware that the procedure differs depending on the diploma you want to take, the diploma you have already obtained and, for foreign students, your place of residence. Let us be your guide – simply follow this link

Fees

Tuition fees 2019-2020: 243 €

And after

Further studies

PhD

Targeted trades

- Assistant professor
- Researcher
- Doctor-engineer
- R&D

Useful info

Contacts

Program director

Fabien Ndagijimana

Fabien.Ndagijimana@univ-grenoble-alpes.fr

Program administration

Application

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

Program administration

Registrar's Office for the Master in Electronics, electrical energy, automation

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

Partner laboratories

IMEP-LAHC

http://www.imep-lahc.grenoble-inp.fr

LCIS

http://www.lcis.grenoble-inp.fr/

TIMA

http://www.tima.imag.fr/

CEA-Leti

http://www-leti.cea.fr/

Course location(s) - City

Grenoble

Campus

Grenoble - Scientific Polygon

Program

Master in Electronic Systems (SE) 1st year

Semestre 7

	Nature	CM	TD	TP	Crédits
UE State-space representation	Teaching Unit (UE)	15h	9h	4h	3 credits
UE Entrepreneurial project management	Teaching Unit (UE)		25h		3 credits
UE Automata and embedded systems	Teaching Unit (UE)			35h	6 credits
UE Advanced random signal processing	Teaching Unit (UE)	7,5h	9h	8h	3 credits
UE Radiofrequency electronics	Teaching Unit (UE)	7,5h	7,5h	9h	3 credits
UE Analog and digital transmission systems	Teaching Unit (UE)	11h	7h	12h	3 credits
UE SE project part 1	Teaching Unit (UE)	9h			3 credits
UE SE project part 2	Teaching Unit (UE)				3 credits
UE Operating systems (C,C++)	Teaching Unit (UE)			18h	3 credits

Semester 8

	Nature	CM	TD	TP	Crédits
UE SISO Feedback control	Teaching Unit (UE)	15h	9h	15h	3 credits
UE Electromagnetic compatibility	Teaching Unit (UE)	15h	15h		3 credits
UE Internship	Teaching Unit (UE)				6 credits
UE Antennas	Teaching Unit (UE)	7,5h	7,5h	9h	3 credits

UE Real-time operating systems (OS, RTOS)	Teaching Unit (UE)			18h	3 credits
UE Design in micro-nano electronics	Teaching Unit (UE)	12h	4h	9h	3 credits
UE SE project part 3	Teaching Unit (UE)				3 credits
UE Coding and information theory	Teaching Unit (UE)	10,5h	9h	8h	3 credits
UE English	Teaching Unit (UE)				3 credits
UE Transverse teaching of choice	SUBJECT				

Master 2nd year

Semester 9

	Nature	CM	TD	TP	Crédits
UE Radiofrequency Communication Systems	Teaching Unit (UE)			16h	6 credits
UE Radiofrequency Integrated Circuits	Teaching Unit (UE)			24h	6 credits
UE Microwave Circuits	Teaching Unit (UE)			24h	6 credits
UE Antennas and Electromagnetic Compatibility	Teaching Unit (UE)	16h	10h		3 credits
UE Integrated technologies & process of fabrication	Teaching Unit (UE)			8h	3 credits
UE Specialty courses	Teaching Unit (UE)				3 credits
UE Research lab work	Teaching Unit (UE)				3 credits

Semestrer 10

	Nature	CM	TD	TP	Crédits
UE Research internship	Teaching Unit (UE)				24 credits
UE Research lab work	Teaching Unit (UE)				3 credits

UE French as a foreign language	Teaching Unit (UE)		3 credits
UE English	Teaching Unit (UE)	30h	3 credits