A strong mathematical background and motivation for research, a very good knowledge of English language, an excellent academic records, a students’ first degrees in Electrical & Computer Engineering or Applied Mathematics. For students following the French academic system, top performance in a related M1 program is required.

**Prerequisites**

**PARCOURS : Systèmes de radiocommunications / Advanced Wireless Communications Systems (SAR)**

The Master Program SAR is a research-oriented Master degree in wireless communication and networking. It corresponds to the second year of the 2-year European Master degree curriculum and all its courses are taught in English. This program aims to convey solid fundamental knowledge in the field of wireless communications as a means to prepare the students for their future research-oriented careers. Courses focus on the theoretical and fundamental methodologies and techniques. The curriculum spans a large spectrum of material, ranging from information theory and coding to communication theory and networking theory. The first semester starts with few “refresher” courses in mathematical tools (probability theory, estimation theory, optimization). It is followed by specialized courses on wireless communication and networking, in which baseline tools and key concepts that are necessary for understanding advanced research topics are studied in detail. In the second semester, students attend a series of research seminars on advanced topics in wireless communications and in parallel they prepare a research project. From April, students pursue a research-oriented internship for a minimum period of four months. The internship can be done in industrial R&D labs or universities in France or abroad.

**Électronique, énergie électrique, automatique (E3A)**

All courses take place at CentraleSupelec, Gif-sur-Yvette.

**Contact**

- **Secretariat**
  - Françoise BELLANGER, francoise.bellanger@supelec.fr

- **Responsible**
  - Hikmet SARI, hikmet.sari@centralesupelec.fr

**NOTES...**

**www.universite-paris-saclay.fr/en**
**PEDAGOGICAL OBJECTIVES**

The main scientific objective of M2R SAR is to provide a deep fundamental understanding of cutting edge advances in wireless communication and networking. It offers all necessary theoretical foundations to launch a successful research-oriented career and prepare the students to excel in top international environments. M2R SAR professional objective is to prepare future leading researchers and professors (academic career), and excellent R&D engineers (industrial career).

**PESTRICTIVES**

The career of M2R SAR graduates could be oriented towards all industrial and economic sectors in the field of telecommunications. A survey about the first employment of former M2SAR students has shown that M2SAR students find very shortly after their graduation either funding for pursuing a PhD thesis (CIFRE, doctoral contracts, public grants and scholarships) or a permanent position in the telecommunication sector.

**RESEARCH**

M2R SAR is a research-oriented Master program with direct link with research. During the academic period, the students attend research seminars on advanced topics and also obtain a first hands-on research experience by doing a project under the supervision of a M2R SAR instructor. Furthermore, in order to obtain their degree, students pursue a research internship in an academic or industrial environment. The curriculum is designed with the aim to provide solid knowledge of foundational character in wireless communications. This Master is also an excellent preparation for pursuing a PhD.

**LABORATORIES**

- E3A/TELECOM
- L2S CNRS

**SOCIO-ECONOMIC PARTNERSHIPS**

M2R SAR has an extended network of industrial partners, including:
- Alcatel-Lucent Bell Labs
- Orange Labs
- Thales Communications
- Sagem Communications
- Intel Mobile Communications
- CEA-LETI, CEA-LIST
- Mitsubishi Electric
- SEQUANS Communications
- Parot/Dibcom

Many Master SAR students join the above companies for their research internship.