Faculté des Sciences
Aix*Marseille Université

2019 / 2020

# MASTER'S DEGREE Science and Technology
# Master (LMD) - Networks and telecommunications

**Description**

Type of degree: Master's degree

Domain: Science and Technology

**Information**

Registration fees: 243 €
*(initial training in 2019/2020)*

http://formations.univ-amu.fr

Department: Faculty of Science

## AIM

Computer networks are an important economic sector worldwide, generating highly skilled jobs. The activity of operators and SMEs focuses on IT developments : networks, Internet of Things, cloud, ToIP, video streaming… Computer networks rely heavily on telecommunications networks whose rapid development is due to perpetual innovation in this field (GSM, ADSL, TNT, WIFI…). Because telecommunication support technology has now reached maturity, the job market is now focused on network architecture, security and Internet of Things (IoT) solutions. These areas are targeted by the cursus. The IoT cursus is co-accredited with the Ecole Nationale Superieure des Mines de Saint-Etienne, Campus of Gardanne.

## STUDENTS

The master is for students with a bachelor in computer science, sciences and physics for engineers, networks and telecommunications, mathematics, EEA, physics, physics and chemistry. This Master is available in :

- Standard formation
- Ongoing training for employees or jobseekers
- Part-time students

## ADMISSION CONDITIONS

Master's integration is subject to an eligibility stage consisting of an examination of the student's scores from end of high-school to bachelor. Final admission is done via (skype) interview.
Application for :

- Master 1 : You must have a bachelor in computer science, sciences and physics for engineers, networks and telecommunications, mathematics, EEA, physics, physics and chemistry. Other license courses may allow integration on dispensation.
- Master 2 : You must hold a first year of Master in Networks and Telecommunications or Computer Science.

## STRUCTURE AND ORGANISATION

The first year of Master is common to both cursi. Network training is based on e-learning (CISCO Net-Academy) and after two years, graduated students get CCNA and/or CCNP accreditation. Part-time students have a personalized timetable to allow them to spend half of the week at the University and the other in the company, until the internship period. The mandatory internships are at least 3 months in the first year and 4 months in the second year.

## TRACKS

- Network Architecture and Cybersecurity
- Internet of Things
- Computer science accelerated curriculum

## ACADEMIC CONTENT

The Master allows you to acquire high-level skills in the field of architecture and security of wide area networks as well as in Internet of Things. Cloud Computing, Storage, ToIP, Virtualization, Security, Quality of Service, M2M, Embedded Software Development are at the core of the Master. Finally, the programs have been designed to also give students the basics of telecommunications that an executive staff needs to know.

## PROFESSIONAL SKILLS

- Use and implement the concepts of data transmission, databases, cybersecurity, monitoring and administration of local or wide area networks, communication protocols in telecommunications and network domains.
- Design optimal technical solutions fitting to the needs and compatible with the existing digital networks and telephony infrastructure by integrating the concepts of scalability and energy saving.
- Present, argue and transmit technical

information, either by writing technical and financial proposals, summary and activity reports or technical documentation, or in front of an audience, using especially the modern means of videocommunications.
- Develop and implement individual and collective projects to propose network architecture, telephony or sensor solutions, to plan and coordinate the interventions of teams and subcontractors involved, by monitoring the project up to at the recipe phase.
- Offer operational, innovative and upgradeable digital solutions to companies through the implementation of disciplinary and multidisciplinary knowledge and by relying on a digital tool specific to the management of IT projects.
- Develop an own professional project corresponding to skills and motivations favouring their integration in professional organizations.
- **Network Architecture and Cybersecurity Cursus** : Design, implement and manage wide area networks and telephony solutions taking into account cybersecurity and quality of service.
- **Internet of Things Cursus** : Design, implement and manage smart and secure networks of connected objects by offering green energy saving solutions and sensors suitable for different environments : civil, military, hostile.

## CAREERS

The Master degree mainly leads to the following jobs : network manager, networks and systems architect, network security manager and many digital IT jobs in varied sectors such as telecom operators, digital companies, banks, large retailers, M2M, transport and smart housing, data centers, Internet of Things (IoT). Thanks to its performance in terms of professional insertion and quality of insertion, the Master is ranked in the top 10 French Masters in the field of networks (https://www.meilleurs-masters.com).

## PARTNERSHIPS

- Teaching units are dedicated to learning IT systems management such as CISCO and Master 2 graduated students have CCNA and CCNP accreditations, the highest in the field.
- Cie Orange, one of the greater European FAI, has targeted the Master by signing a partnership with Aix-Marseille University.
- The IoT cursus is co-accredited with Ecole Nationale Supérieure des Mines de Gardanne.
- Master has just been accredited by the A*MIDEX Academy of Excellence through the financing of the Education With Connected Objects project.
- 30% of the training is provided by external contributors from major operators and integrators.

*Last modification: 2019/03/26*