International Master - MR11601C

Computer Networks and IoT Systems

Introduction
• Language of instruction: English.
• Mode of learning: daytime, full time, on-site and remote classes.
• Length: M1: 1 year, M2: 1 year, M1+M2: 2 years.
• Official title appearing in the degree: “Master Sciences, technologies, santé - mention Informatique”, meaning Master of Science, Technologies and Health - track in Computer Science.
• Master website: https://master.roc.cnam.fr

Program’s presentation
The Master program takes place at Conservatoire national des arts et métiers (Cnam), Paris downtown, France, in the heart of the Ville Lumière (the City of Light), Marais district, in a vibrant multi-cultural international and stimulating environment.

The Master program covers:
• basics about network architectures and operating systems;
• advanced technologies related to the design IoT computing systems, protocols and applications;
• novel network architectures emerging with network virtualization (NFV), edge computing (MEC) and softwarization (SDN, SD-x);
• modeling and performance evaluation of networks and computing systems, including 5G and beyond 5G systems;
• integration of artificial intelligence and novel decision-making frameworks for the operations and automation of communication networks and IoT Systems.

The Program’s faculty body includes world-class academics and industry experts. They participate actively in various areas such as: international, European and national collaborative projects, industrial research projects (H2020, ANR), standardization and open-source bodies (ONF, IETF, ETSI) etc. Lecturers are also active researchers and engineers, who contribute significantly with standards, open source projects, scientific articles and publications to the contents of the Master program.

Scholarships and travel grants available based on excellence criteria.

Objectives and Skills Learned
The Master program is meant for students willing to become expert of digital infrastructure technologies, going from network and Internet/cloud infrastructures to edge computing and IoT systems and applications.

Students attending the Computer Networks and IoT Systems Master program will learn and experiment current and novel technologies underpinning the Internet infrastructure, related to Network Virtualization, Internet-of-Things (IoT) protocols and architectures, IoT device design, Artificial Intelligence and Machine Learning integration in network and embedded systems, Software-Defined-Networking, Cloud Networking, 5G and beyond-5G architectures – a set of novel technologies driving the digital society evolution.

Admission requirements
International, extra-European and non-French European students willing to pursue a Master degree program in English, and possessing a Bachelor-level degree in one of following fields: Computer Science, Electronics, Computer Engineering, Electrical Engineering, Software Engineering, ICT Engineering.

Admission is also possible at the M2 (2nd year level) if you can justify 4 years of university study in one of the fields mentioned above with equivalent M1 (1st year) courses.

Application:
• 2-page curriculum vitae (CV);
• copy of Bachelor degree, and Master degree (if any);
• transcripts of grades of all previous degrees;
• signed motivation letter indicating if asking admission at the M1 or M2 level, and asking for scholarship;
• English certificate equivalent to B1 for M1 (1st year), B2 for M2 (2nd year), according to the CEFRL (Common European Framework of Reference for Languages);
• coordinates (email, telephone, address) of two reference professors.

Students coming from outside the European Union have to apply via Campus France:
https://www.campusfrance.org
Online application is possible via the « Études en France » platform:
https://pastel.diplomatie.gouv.fr/etudesenfrance

More details on the application procedure:
https://master.roc.cnam.fr
Calendar
• Registration: till end of June
• Visa: till end of July
• Arrival: till end of September
• Start of classes: October
• End of classes: June

Fees
6000 € per year
Your employer or a sponsoring company can cover the registration fees.
Scholarships covering tuition fees and/or living expenses can be attributed to outstanding students.

Courses (examples)
• Internet routing architecture
• Internet of Things (IoT)
• IoT device system design
• Artificial Intelligence and Machine Learning
• Cybersecurity architectures
• Network security
• Wireless and mobile networks
• Network Functions Virtualization
• Network Automation
• Software Defined Networking
• 5G and 6G architectures

Career opportunities
• Computer Scientist
• Network engineer
• IoT engineer
• Computer Systems Engineer
• Internet Engineer
• Network Expert
• Embedded Systems Engineer
• Expert Consultant in Computer Networks and Systems

Corporate partners/employers (examples)
• Orange
• SFR
• OVH
• Nokia
• Thales
• Huawei Technologies France
• Ericsson
• SQUAD
• Gandi

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<tr>
<th>Code UE</th>
<th>Courses</th>
<th>Credits</th>
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<tr>
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<td><strong>Master 1</strong></td>
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<tr>
<td>USEEJ6</td>
<td>Telecommunication Networks</td>
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<td>USEEJ7</td>
<td>Networks - Complements and Applications</td>
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<td>USEEJ8</td>
<td>Wireless Mobile Networks</td>
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<td>USEE7</td>
<td>Network security</td>
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<td>USEEN1</td>
<td>Computer Systems Modeling and Verification</td>
<td>6</td>
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<tr>
<td>USEN2</td>
<td>Operating Systems and Computer Architecture</td>
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<td>USEEN3</td>
<td>Operations Research</td>
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<td>USEEJ9</td>
<td>French as foreign language</td>
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<tr>
<td>USEK1</td>
<td>English</td>
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<tr>
<td>USEK2</td>
<td>Engineer Job</td>
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<tr>
<td>USEK3</td>
<td>Company Organisation and Sustainability</td>
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<td><strong>Master 2</strong></td>
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<td>USEEK8</td>
<td>Advanced Projects in Networks and IoT Systems</td>
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<tr>
<td>USEEK9</td>
<td>Internet of things</td>
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<td>USEEN4</td>
<td>Network Evolutions with Virtualization and Automation</td>
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<td>USEEN5</td>
<td>Embedded Systems: Applications and Cybersecurity</td>
<td>6</td>
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<tr>
<td>USEEN6</td>
<td>Artificial Intelligence and Machine Learning for Networks and IoT</td>
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<tr>
<td>USEEN7</td>
<td>Scientific Communication</td>
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<td>USEEJ9</td>
<td>French as foreign language</td>
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<tr>
<td>USEK1</td>
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<tr>
<td>UAE2B</td>
<td>Internship</td>
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French mother tongue non-French students can choose instead of French (USEEJ9) another language among English, Arab, Russian, sign language.

Contact
Stefano Secci,
Master Coordinator
+33 1 40 27 26 38
stefano.secci@lecnam.net

Le Cnam
EPN5 – Computer Science Department
292, rue Saint-Martin
75003 Paris
France

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La formation continue à l’université

Contact