EURECOM
Sophia Antipolis

MASTER'S DEGREE (MsC) IN COMPUTER SCIENCE, MAJOR IN:
DIGITAL SECURITY

ACCREDITATION

National Accreditation by the French Ministry of Education, Higher Education and Research. SecNumedu certification by the National Cybersecurity Agency of France (ANSSI).
The degree can lead to enrollment in a Phd program.

KEY WORDS

Security, Network Security, Software Security, Malware Analysis, Intrusion Detection, Cryptography, Watermarking, Biometrics, Digital Forensics.

STRONG POINTS OF THE PROGRAM

> During their Master, students will have access to cutting edge technological platforms within EURECOM's Wireless
> Communications Laboratory
> Students are supervised by internationally renowned researchers
> A 6-month paid internship which provides a cutting-edge experience. EURECOM has its own database of internship offers
  in several countries
> A fully dedicated team providing administrative support to international students
> Strong international exposure providing essential intercultural tools (only school in France with 2/3 of international students and professors)
> The teaching program benefits from a unique location and from the expertise of renowned industrial partners
> EURECOM is located in Sophia Antipolis, Europe's largest technology park, a hotbed of internships and jobs opportunities for students
> EURECOM is a consortium of leading international universities and
  top ICT companies and has established a synergy with the local industrial environment on advanced research topics

SCHOOL OFFERING THE MASTER

EURECOM, a "Grande Ecole" with a 100% curriculum in English. It is located on the French Riviera, between Nice and Cannes.
The degree is co-accredited by Institut Mines-Télécom (IMT).

INDUSTRIAL PARTNERS

SAP, BMW, Symantec, IABG, Orange, Amadeus, Renault, Siemens, ARM, Fortinet, PSA, KMPG, Nokia, Accenture, HP.

LANGUAGE OF TEACHING

100% teaching in English. French is taught as a foreign language throughout the program. A 3-week program of intensive French courses is organised in September.

ENVIRONMENT

Ranging from simple spoofing or tampering of personal data to distributed denial of service attacks jeopardizing global network operation, security problems are viewed as the major impediment to further development in the computer and communications field. As the main countermeasure to these problems, security of communications and computer systems became an important requirement both for users of on-line services and for technical specialists involved in the design of networks and applications. Security mechanisms therefore are embedded as an essential building block of all computer and communications systems at early stages of the design. Recently designed systems like wireless and mobile standards, peer-to-peer applications all include sophisticated security mechanisms as opposed to their earlier counterparts like the original Internet protocols that were severely lacking security functions.

COURSE AIMS

The master in Digital Security aims at providing a solid background in the design and management of security in major areas of communications and computer science. The professional training in security will be offered as a complement to an advanced program in computer networking, mobile services and imaging. Graduates will thus be able to tackle security problems encountered in networking, distributed software applications and image processing. Various technical areas ranging from secure software to cryptographic mechanisms and practical countermeasures against network attacks through watermarking of images and biometric identification techniques will be addressed in several courses and laboratories.

PROGRAM

The Master's program is made of 4 full-time semesters: 3 semesters of courses followed by a 6-month Msc thesis in industry or in a research lab.

Scientific and technical modules

> Computer architecture
> Image & Video Compression
> Digital Image Processing Information theory
> Network Modeling
> Introduction to computer networking and internet
> Operating systems
> Software development methodologies
> Secure communications
> System and Network Security
> Emulation and simulation methodologies
> Information theory
> Mobility Modeling
> Mobile application and services
> Mobile communication systems
> Network Modeling

Soft skills/Management modules

> Introduction to Management
> Personal development and Team
> Leadership
> Entrepreneurship and Capital Venture
> Innovation and new product development
> Business Simulation
> Sociological approaches of telecom technologies (course given in French)
> Project Management
> Sustainable ICT's (Green IT)
> Intellectual Property Law
> General Introduction to Law

Also part of the program

> Company visits and seminars
> Scientific and Technical Projects
> French language
> Professional coaching (workshops on CV/professional interviews)
> 6-month thesis in Industry or Research lab

REQUIREMENTS

Entry requirements include a Bachelor's degree in the engineering fields covered by the Master program (Electrical engineering, computer sciences, communication engineering...).

DIGITAL SECURITY

MASTER'S DEGREE (MSC)

LANGUAGE REQUIREMENTS

English
> Mother tongue or English proficiency test such as:
>> TOEFL: 564 (PBT), 213 (CBT), 80 (IBT)
>> IELTS: 5.5
>> TOEIC: 750
>> Cambridge: CAE

No prerequisite in French.

COMPETENCES ACQUIRED

> Solid background in design & management of security in computer and communication systems
> Design of secure communications systems
> Protection of existing systems
> Expertise in theoretical foundations of security
> Hands-on experience with software and networked systems
> Knowledge of security applications in communications and information systems
> Security skills as a complement to networking (mobile & fixed), image processing and software engineering

TYPICAL JOBS

> Security architect
> Security officer
> Network manager
> Security consultant
> Software Engineer with strong security expertise
> System Engineer with strong security expertise
> Telecommunications Engineer with strong security expertise

PROFESSIONS

By providing security skills as well as a solid competence in widely demanded fields like mobile networking, web engineering and image processing this Master broadens the employment sector from security specialists to a range of companies in the IT field that need and highly value additional security expertise. Potential employers thus include companies specialized in security fields such as:

> Network and Software Security Manufacturers (Firewall, IDS, Antivirus...)
> Network and Software Security Service Providers (Security consulting, ethical hacking services)
> But also companies in the broader field of ICT as follows
> Hardware and software manufacturers
> Professional Services (consulting, project management)
> Communication equipment manufacturers
> Network operators
> Application providers

COST

Tuition fees for the full program (2 years):
> €12,000
> €6,000 (European Union and Erasmus zone)
Possible partial fee waivers and scholarships.

DURATION

2 years (starting in september):
3 semesters of courses followed by a 6-month paid internship in a lab or company. Some of the companies offering internship opportunities to our students: SAP, BMW, Symantec, IABG, Orange, Amadeus, Renault, Siemens, ARM, Fortinet, PSA, KMPG, Nokia, Accenture, HP, Magnetti Marelli, DLR...

LODGING

Accommodation is organised with the Administration Staff of EURECOM in student halls of residence, rooms or shared flats. EURECOM has an online platform of accommodation offers, from public student residents to flat-sharing in villas and individual studio options. EURECOM students live in several cities nearby: Antibes (a charming city by the seashore), Nice (5th biggest French city); Valbonne or Biot.
https://housing.eurecom.fr/en/

APPLYING

All applications should be made online:
https://admission.eurecom.fr/en/
The website provides full information on application procedures:
https://www.eurecom.fr/en/teaching/masters-degree-msc-computer-science

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MINISTÈRE DE L'ÉCONOMIE ET DES FINANCES
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