

# Master of Science in Computer Engineering

## AIMS

Computer Engineering is a rapidly growing field which provides broad job opportunities. The course takes into account demands both from the industrial world and from the modern society, combining a solid scientific background with cutting-edge technological skills, tradition with innovation, quality with sustainability.

## COURSE DESCRIPTION AND CAREER PROSPECT

The MSc (laurea magistralis) in Computer Engineering provides students with a solid, in-depth scientific and technical background, in line with the innovation needs of the informatics field. The course further advances the student knowledge portfolio, in both the fundamental sciences and the engineering disciplines. This allows graduates to interact with engineering professionals from all different backgrounds, as well as to complete their mastering of computer engineering.

The course includes a first part which goes in-depth into engineering disciplines and completes the expertise on methodological disciplines and informatics. After that, students are presented with the following subjects:

- network applications and systems security
- design of mobile applications
- systems architecture and tools for web-based services
- intelligent systems and decision-support systems.

Graduates in Computer Engineering will easily find employment in small, medium, and large companies operating on products and services in the fields of network architectures and protocols, software engineering, multimedia information processing, industrial automation and robotics, web-based information systems, business intelligence, enterprise process management, strategic decision support systems.

Examples of possible professional profiles are:

- software engineer
- network engineer
- systems software consultant
- enterprise information manager
- ICT research and development engineer
- ICT scientist.

## COURSE CONTACTS

*Students Coordinator*

Dipartimento di Ingegneria dell'Informazione

Barbara Mancini

email: [barbara.mancini AT ing.unipi.it](mailto:barbara.mancini@ing.unipi.it)

WEB SITE: <http://ce.iet.unipi.it/index.php/en/mce>

## ENTRY REQUIREMENTS

**Non-EU applicants (citizens of countries not belonging to the European Union)**

**not resident in Italy:**

30 non-EU students/year can be admitted in the Msc Program. Admission is granted on a competitive basis to the candidates of superior ability in possession of the relevant requirements.

Candidates must first apply for admission.

By the stated deadlines, applicants must hold a three-year Bachelor of Science ("Laurea di I livello") or equivalent first-cycle degree awarded by a foreign University. Computer Engineering, Computer Science, Electrical Engineering, Electronic Engineering, Information Technology degrees are preferred.

In any case, the evaluation committee will evaluate the curriculum studiorum of the applicant. The committee may refuse application due to evident lack of sufficient background (e.g., in maths, physics, computer engineering/science, other engineering disciplines), or it may require applicants to sit for additional examination in some particular disciplines.

Applicants must be able to understand and speak English at an intermediate level or better. Their proficiency in English will be assessed by the evaluation committee during the interview.

Upon successful admission, the applicant enrolls in the MSc program, following standard procedures of enrollment at the University of Pisa.

**EU applicants (and non-EU applicants resident in Italy):**

Admission to the MSc course in Computer Engineering is open to all candidates in possession of the relevant requirements stated above.

Further info at the University Official

Website <http://matricolandosi.unipi.it/index.php?page=default&id=1&lang=it>

Admission of EU Applicants is extended also to non-graduated applicants. In this case, a successful application will be conditional to the subsequent completion of the degree and the transmission of adequate documentation not later than December of the current academic year.

In addition to the academic degree, applicants must also hold a good knowledge of English, at least corresponding to an intermediate level.

## STUDY PLAN

### Curriculum: Computer Systems and Networks

<b>First Year</b>	ECTS
<u>Computer Architecture</u>	9
<u>Concurrent and distributed systems</u>	9
<u>Security in computing systems</u>	9
<u>Performance evaluation of Computer Systems and networks</u>	9
<u>Electronics and Communication Systems</u>	9
<u>Advanced topics in Computer Systems and Networks</u>	9
<u>Intelligent Systems</u>	6

<b>Second Year</b>	ECTS
<u>Automated systems and robotics</u>	6
<u>Advanced Networking Architectures and Wireless Systems</u>	9
<u>Mobile and Pervasive Computing</u>	6
<u>Information Systems and Software Engineering</u>	12
Free activity	9
Final Examination	18

<b>Free Activity</b>	ECTS
<u>Networked Embedded Systems</u>	9
<u>Enterprise Information Management</u>	9

## Curriculum: Enterprise Systems

<b>First Year</b>	ECTS
<u>Business Processes Management</u>	9
<u>Performance evaluation of Computer Systems and networks</u>	9
<u>Concurrent and distributed systems</u>	9
<u>Electronics and Communication Systems</u>	9
<u>Computer Architecture</u>	9
<u>Security in computing systems</u>	9
<u>Intelligent Systems</u>	6

<b>Second Year</b>	ECTS
<u>Business Intelligence</u>	9
<u>Information Systems and Software Engineering</u>	12
<u>Mobile and Pervasive Computing</u>	6
<u>Systems for Strategic Management and Support</u>	6
Free activity	9
Final Examination	18

<b>Free Activity</b>	ECTS
<u>Networked Embedded Systems</u>	9
<u>Enterprise Information Management</u>	9

**1-year Master Degree (60 ECTS)**