L-8 – COMPUTER ENGINEERING

Program at a glance

PROGRAM NAME: Computer Engineering
DEGREE CLASS: Class L-8 INFORMATION ENGINEERING
DEPARTMENT: Engineering Sciences
LEGAL DURATION OF THE PROGRAM: 3 YEARS
UNIVERSITY EDUCATIONAL CREDITS (ECTS): 180

OBJECTIVES

The Bachelor in Computer Engineering (L-8) aims to provide an engineering education focused on the development and application of information technologies, through a broad-based training path that clearly distinguishes it from non-engineering computer science programs.

The educational path is strongly oriented toward a solid foundational preparation, in which students acquire the essential elements of the scientific disciplines that constitute the indispensable foundations of engineering studies (physics and, above all, mathematics, namely analysis, geometry, algebra, mathematical logic, statistics, and probability).

These basic skills are complemented by a solid foundational preparation in computer science, together with the fundamentals of other Information Engineering disciplines, such as Electronics and Telecommunications, as well as disciplines from Management Engineering.

Mainly during the third year, a group of courses is offered within three curricula focused on innovative topics:

- **Software Development:** this area provides knowledge of complex computer system architectures and basic principles of Software Quality;
- **Artificial Intelligence:** students acquire the main concepts and methods underlying the solution of artificial intelligence problems, the main programming languages most commonly used in AI and ML, such as Python, R, and PyTorch, and the impact of digital transformation on AI solutions within individual business functions;
- **Cybersecurity:** students acquire basic principles for identifying the most common malware, the main countermeasures, cryptographic and authentication techniques for computer systems, and the ability to define appropriate security policies or procedures for the protection of information resources.

Finally, the educational path includes additional integrative training activities on applications of computer science in emerging sectors such as energy and hybrid motorization for environmental compatibility.

CAREER OPPORTUNITIES

The main career opportunities envisaged for graduates of this degree class include: IT industries operating in hardware and software production; industries for automation and robotics; companies operating in the area of information systems and computer networks; service companies; IT services within public administration.

According to current regulations (DPR 328/2001), graduates may practice as freelancers after registration (through a State examination) in the Junior section of the following Professional Registers:

- **Order of Engineers – Section B – Sector C – Information Engineering.**

TEACHING MODE

The program is delivered online through the most modern information technologies applied to education. Students can access the course learning materials (audio/video lectures, lecture notes, simulations, exercises, tests, virtual laboratories) at any time of day or night and from anywhere, either via PC by accessing the Virtual C@ampus Platform, or via mobile phone through the Virtual C@mpus Mobile service (Mobile Learning). This system enables learning through mobile devices (mobile phones, PDAs, pocket PCs, smartphones) and integrates teaching, communication, and information.

Another opportunity offered to students is synchronous interaction with lecturers through virtual classrooms, which allow the delivery of lectures, exercises, and in-depth seminars online, with lecturers connected live with students. Access to virtual classrooms is scheduled and available through an agenda consultable on Virtual C@mpus.

TEACHING MODEL

The adopted teaching model provides assisted learning throughout the entire educational path, with access to specifically developed teaching materials (audio/video lessons, handouts, slides, etc.) and a range of individual and/or group learning activities (virtual and/or in-person laboratories, simulations, exercises, internships, and training placements) guided by lecturers and tutors. This ensures dynamic, interactive, multimedia, and collaborative learning.

The interactive lecturer-student relationship is further strengthened through the use of virtual classrooms. Throughout the duration of the program, students can rely on an individual tutoring service to support their studies and to address technological, logistical, and administrative issues.

ADMISSION REQUIREMENTS

The program has open admission and does not require an entrance test. Students holding a high school diploma may enroll at any time of the year.

The University guarantees enrolled students an assessment of incoming competencies through a non-selective orientation test (which may also be taken after enrollment). The purpose of this test is to enable the University to design suitable refresher and reinforcement pathways for basic skills, together with guided pathways for entry (or re-entry) into the university environment, in order to allow students to adequately face the program and increase their chances of success.

EXAMINATION METHODS

The verification of learning objectives is based on assessment tests, both intermediate and final, written and/or oral, for the courses and integrative activities included in the study plan.

Final examinations assessing students' learning outcomes and the discussion of the final thesis are held in person, with the student appearing before the examination board established in accordance with current regulations.

Link: https://www.unimarconi.it/l-8-corso-di-laurea-in-ingegneria-informatica/