FACULTÉ DES SCIENCES ET TECHNIQUES

Computer science

SAINT-ÉTIENNE

Degree **Sciences, technologies, health**
Specialisation **Computer science**
Specialisation **Computer science**

Aims

The computer science degree gives students a solid basis in I.T., including elements of algorithms, theoretical computer science, programming, architecture, networks, managing databases and internet techniques.

It also fosters language skills (English), interdisciplinary skills (skills in analysis and synthesis, written and oral expression, individual and collective work, project management, locating and using textual sources, use of digital tools) and pre-employment skills (knowledge of the range of professions linked to the course, developing a personal career project, capacity to reinvest what is learned in a professional context).

Access to the courses in the first year is via the general and multidisciplinary portal Mathematics-Computer Sciences-Physics-Chemistry (MIPC), which takes place over the first two terms of the Computer Sciences degree.
Through a clearly interdisciplinary orientation, this portal helps students to acquire and reinforce the fundamental scientific skills and knowledge needed to go on to a specialisation in the second year.

Admission

§ Baccalaureate, preferably scientific.
§ A BTS or DUT vocational diploma, a first year in a French preparatory class with possible access to the computer science degree course in the 2nd or 3rd year.

Skills

§ Setting up techniques and adapted solutions (programming / software)
§ Organising the administration and development of a database
§ Applying internet applications in different technical environments
§ Working on architecture, systems and networks
§ Applying adapted mathematical tools

After the course

Continuing studies

§ Passing the first 4 terms of the degree allows students to apply for vocational degrees such as the “Organiser of Technologies of Information and the Internet” course, a partnership between the Faculty of Sciences and Techniques and the IUT in Saint-Étienne.
§ A degree in computer science allows students to continue their studies with a computer science master’s degree, particularly at the Faculty of Sciences and Techniques: “Data and Connected Systems”, “Machine Learning and Data Mining”, “Cyber-Physical Social Systems”.
§ The computer science degree is also a gateway to an ESPE (teacher training school) or an engineering school.

Job openings

After a specialisation, the course provides job openings in a range of sectors:

§ Education and research: primary and secondary school teaching in mathematics, teacher-researcher in higher education (universities, engineering schools, business schools, technical colleges)
§ Industry: research engineer in a range of sectors: meteorology and space sector, civil engineering, banking, finance, insurance, decision aid, cryptography and security, medicine and pharmaceuticals, image processing

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Contacts

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Tuition fees

Fees 2017/2018

Main registration: €184
Preventive medicine: €5.10
Social security: €217

Courses

term 1 - Mathematics, Engineering Sciences,	Hours	ects
CU MATHEMATICS	60	**6**
CU COMPUTER SCIENCES	60	**6**
CU PHYSICS	60	**6**
CU CHEMISTRY	60	**6**
CU MATHEMATICAL TOOLS	30	**3**
CU METHODOLOGICAL AND SCIENTIFIC TOOLS		**3**
Expression and communication in languages	16	1
Textual tools	1	1
Digital tools and culture	14	1

term 2 - Computer science	Hours	ects
CU FUNCTIONAL PROGRAMMING	72	**7**
CU DATABASES I	60	**7**
CU I.T. TOOLS	10	**4**
CU MATHS FOR COMPUTER SCIENCES I	60	**6**
CU DECISION-TAKING SCIENCES	36	**4**
CU GENERAL ENGLISH B2	18	**2**

term 3 - Computer science	Hours	ects
CU IMPERATIVE PROGRAMMING I	72	**6**
CU DATABASES II	58	**6**
CU FORMAL LANGUAGES I	48	**5**
CU COMPUTER ARCHITECTURE	48	**5**
CU MATHS FOR COMPUTER SCIENCES II	44	**4**
CU GENERAL ENGLISH B2	18	**2**
CU PERSONAL CAREER PROJECT	14	**2**

term 4 - Computer science	Hours	ects
CU IMPERATIVE PROGRAMMING II	56	**6**
CU WEB DEVELOPMENT WEB I	60	**6**
CU ALGORITHMICS OF GRAPHS I	56	**5**
CU OPERATING SYSTEMS	46	**5**
CU MATHEMATICS FOR COMPUTER SCIENCES	30	**3**
CU GENERAL ENGLISH B2	24	**3**
CU OPEN CREDITS (INC. ARTIFICIAL INTELLIGENCE AND ROBOTICS)	20	**2**

term 5 - Computer science	Times	ects
CU OBJECT-ORIENTED PROGRAMMING	54	**5**
CU PROBABILITIES - STATISTICS	54	**5**
CU ALGORITHMICS AND COMPLEXITY	54	**5**
CU SYSTEM PROGRAMMING	54	**5**
CU COMPILATION	54	**5**
CU ENGLISH AND SCIENTIFIC COMMUNICATIONS	24	**3**
CAREER PREPARATION 1		**2**
STUDENTS CHOOSE 1 CU FROM:		
Preparation for continuing studies or professional integration	20	
Development tools	20	
Introduction to primary school teaching	20	
ASTEP: Support in science and technology in primary school 1	35	

term 6 - Computer science	Times	ects
CU FORMAL LANGUAGES II	30	**3**
CU IMAGE SYNTHESIS AND ANIMATION	60	**5**
CU WEB DEVELOPMENT II	54	**5**
CU ALGORITHMICS OF GRAPHS II	30	**3**
CU AUTOMATIC PROCESSING OF NATURAL LANGUAGES	54	**5**
CU ENGLISH & SCIENTIFIC COMMUNICATIONS	24	**3**
CU OPEN CREDITS	20	**2**
CU METHODOLOGY/PROJECT MANAGEMENT	10	**1**
CAREER PREPARATION 2 (SUPPORTED PRACTICE)		**3**
STUDENTS CHOOSE 1 CU FROM:		
Internship in a company or laboratory		
Tutored project in programming		
Internship in primary school		
ASTEP: Support in science and technology in primary school 2		