

B.U.T. Informatique

Computer Science/Information technology (Three-year Undergraduate Course)



The **B.U.T. (Bachelor Universitaire de Technologie) in Computer Science** is a French national undergraduate diploma for candidates owing a good "Baccalauréat" (equivalent of "A" Levels in maths and science). They attend a two-year course, with 35 hours per week divided up into lectures (20% of the total time), tutorials (30%) and practicals (50%), which ends in a 10-week work placement (12 weeks abroad). The bias is on practical work.

Three-year syllabus : 2 000 hrs

Algorithms and Programming (260 hrs)

- Algorithms, use of data structures
- Designing data structures (concept of abstract type, of encapsulation, of an event, of quality, of memory management, of persistence management)
- Object design and programming (Java)
- web development (PHP, HTML, Javascript)
- distributed programming
- design and development of mobile applications
- server sideweb programming
- web programming – Rich client
- design of documents and digital interfaces
- Graphical User Interface

Architectures, Systems and networks (200 hrs)

- Computer architecture, architecture and programming (manipulating machine language concepts)
- Understanding and using an operating system : fundamentals and implementation, Shell, script language under Unix
- Understanding and using networks : applications, data transfer, management of communication in a network, LAN technology, network installation and configuration, interconnection, administration.

Tutored projects (300 hrs)

Computing applications in groups supervised by a tutor: practical implementation of knowledge and know-how (documentary research, provision of solutions, production of all or part of a product or service), cross disciplinary experience, management methodology, preparation of specifications, group working, time and deadline management, written and oral communication, development of students' interpersonal skills: independence, team-work.

Software Engineering tools and models (235 hrs)

- Information system modelling : organisations and information systems, modelling languages, methods of analysis and design
- Additional software production techniques: implementing design principles for relational databases, Man Machine Interface design principles and a quality approach in the process of software production.
- Database principles : Oracle, SQL, MYSQL. Database management problems, DBMS (characteristics and features, relational data model)

« General » knowledge and skills

- Mathematics for computer science (200 hrs) :discrete mathematics,linear algebra,graphs and languages,analysis and digital methods,probabilities and statistics,mathematical modelling, cryptography.
- English (120 hrs) : technical language and communication (CV, job interview, discussions, presentations, reports, mails,telephoning, knowledge of the work place)
- Communication (120 hrs) : reports, presentations in French, communication, cultures and societies
- Economy and Management of organizations (240 hrs) : concepts and tools of economic analysis, modern economic questions, Understanding the principal operational fields of an organization, management methods, implementation of organization strategies, information technology management



The Internship period

The Internship/work placement period is scheduled for a minimum of 11 weeks during the 2nd year course.

A first compulsory work experience in a company in France or at the International.

Objectives

- To enable the students to carry out a synthesis of knowledge and know-how acquired at the IUT, to gain awareness of the socio-professional environment and to clarify their personal aptitudes.
- To adapt to a different environment and a different culture, in an English-speaking country : to adapt to new tools, to a new company culture, to improve their skills in professional English by working in that language

What kind of projects can she/he work on ?

Here are some examples of project :

- Applications development
- Database design and management
- Web programming
- Website design and development
- Mobiles applications
- Embedded applications
- Software design

When is the placement ?

The placement is from April to the end of June, but may be longer if the student so wishes.

Our students' skills

Students are trained to be able to design and implement computing systems corresponding to the need of users. They can design and develop databases, design and write programs, design and develop web pages. They are also trained to be systems analysts.

What do our graduates do ?

Students' job profile

Students are trained to integrate and to evolve in the real world of work in many different domains.

Here are some possible positions and responsibilities :

- Analyst-programmers/developers (system analysts, programmer-designers),
- Software designer,
- Junior development manager,
- Programme tester,
- "Integrator" (put together all the modules of an application),
- Software ergonomist,web developer.

For further information please contact

Bertrand DE VILLENEUVE (Head of Department)
bertrand.de-villeneuve@univ-rennes1.fr

