IN FIGURES

Source: National Institute of Statistics and Economic Research - www.insee.fr

- **100% of France's population** to have high-speed Internet by 2022
- **3rd place** in Europe for online corporate procurement (2016)
- **4th place** in OECD in number of high-speed connections per capita(2016)
- **150,000** companies in the information science sector in France (Kompass 2017)
- **413,400** permanent employees in computing and data services (2017)

INTERNATIONAL

France is one of the most advanced countries in the OECD in terms of the penetration of high-speed Internet (4th place). Only Switzerland (with 51.4% penetration) is far ahead of the pack. The development of the information society in France is generally above the European average. The nation's plan for very high speed Internet, with €20 billion in funding, will provide 100% of France's population with very high speed access between now and 2022: www.francethd.fr

France also shows good results in terms of individual Internet use (banking services, online shopping, e-government) and corporate procurement. With 55% of French companies making use of online purchasing, France places third among European countries on this score, behind the Czech Republic (62%) and Austria (66%). The rate of growth is significant for certain other professional uses of the Internet, particularly the share of businesses having a website (68% in France, against the European Union average of 77%).

In 2016, for the third consecutive year, French businesses made up the largest largest European delegation (supported by French Tech) at the Consumer Electronics Show in Las Vegas. The world's largest digital incubator, Station F in Paris, can accommodate no fewer than a thousand innovative start-ups: https://stationf.co/fr/

The TERATEC Forum is Europe's most important event in high-performance digital design and simulation, drawing a thousand international experts each year. www.teratec.eu

France's National Institute for Research in Computer Science and Automation (INRIA) maintains international labs and a program of collaborative teams open to all countries. With joint units in Asia and Latin America; a joint laboratory in China; research groups in Europe, the United States, and Brazil; and programs of scienti c collaboration

with numerous countries, the Institute of Information Sciences and Interactions (ISN2I, a part of CNRS) supports international cooperation on cutting-edge research in the information sciences.

RELATED FIELDS

• Communication • Digital technology • Education • Electronics • Engineering • Health • Information • Manufacturing • Mathematics • Physics • Telecommunications

SUBFIELDS

• Artificial intelligence • Big data • Components • Computers • Connectivity • Databases • Digital • Digitization • E-commerce • Fiber optics • Internet • Modeling • Multimedia • Networks • Platforms • Robotics • Security • Softare design • Systems • 3D printing • Very high-speed Internet • Virtualization • Web

USEFUL LINKS

- **Allistene (Digital Sciences and Technologies Alliance) : www.allistene.fr**
- **CNIL (National Commission on Computers and Freedom): www.cnil.fr**
- **National Digital Council: https://cnnumerique.fr**
- **INS2I (Institute of Information Sciences and Interactions): www.cnrs.fr/ins2i/**
- **INRIA (National Institute for Research in Computer Science and Automation): www.inria.fr**
- **La French Tech: www.lafrenchtech.com**
- **Digital Observatory: https://www.entreprises.gouv.fr/observatoire-du-numerique**
- **Station F: https://stationf.co/fr/**

Octobre 2018

COMPUTER SCIENCE & DIGITAL

As the science of automated and systematic processing of information, computer science applies electronics to the processing of data, knowledge, and communications in technical, economic, and social contexts. As the discipline has expanded, a stream of new terms have represented its advances, from ICT (information and communication technologies) to digital imaging to big data.

Secondary schools introduced courses in computer science in the 1980s. By the next decade, computer science had emerged as subject in its own right, with other disciplines recognizing its relevance by requiring students to acquire computer skills. In 2006, a certificate program in computer and Internet studies was available in all secondary schools.

Today's digital revolution has been made possible by the rapid advance of computer science as an autonomous discipline with countless digital offshoots, such as big data analytics, very large scale networks, and onboard systems. Computer science and digital technology continue their rapid expansion in aeronautics, automotive engineering, construction, health, agriculture, and many other sectors.

Postsecondary educational programs distinguish between digital technology, which can relate to any activity based on digitization and data processing (e.g., digital photography, digital sound, digital publishing, digital sciences, digital arts) and computer science, which, from two-year undergraduate programs to specialized master's degrees, teach techniques for the development and management of systems, networks, and telecommunications. Various majors and concentrations in computer applications and modeling are available in the basic sciences (biology, chemistry, mathematics, physics, and others) as well as the humanities and social sciences (e.g., law, geography, linguistics).

COMPUTER SCIENCE & DIGITAL

LICENCE LEVEL

BREVET DE TECHNICIEN SUPÉRIEUR (BTS)
(BACCALAURÉAT + 2 YEARS OF POSTSECONDARY STUDY) – **L2**

The BTS in organizational computer services is offered in many public and private secondary schools. Two options are possible:

> infrastructure, systems, and network solutions;

> software solutions and professional applications.

The BTS in digital systems has options in computer science and networks.

DIPLÔME UNIVERSITAIRE DE TECHNOLOGIE (DUT)
(BACCALAURÉAT + 2 YEARS OF POSTSECONDARY STUDY) – **L2**

The DUT in computer science and the DUT in electrical engineering and industrial computing (GE2I) are offered in about 50 French cities. The DUT in networks and telecommunications is available in 30.

LICENCE PROFESSIONNELLE
(L2 +1 YEAR OF POSTSECONDARY STUDY) – **L3**

French institutions offer four different Licence professionnelle degrees in the Science, Technology, and Health track. Students may choose one of the following majors:

> Computer science, with specializations in application development, Internet and intranet development, information systems and database management, software testing and quality assurance;

> Computer networks and telecommunications, with specializations in web design, content development, and construction;

> Logistics and information systems;

> Home automation.

LICENCE
(BACCALAURÉAT + 3 YEARS OF POSTSECONDARY STUDY) – **L3**

The general licence in computer science is offered by about 60 universities in the Science, Technology, and Health track. A major in mathematics and computer science in the humanities and social sciences is available in about 20.

www.campusfrance.org >Students>Studying>Finding a Bachelor's level programme

MASTER LEVEL

MASTER
(BACCALAUREAT +5 YEARS OF HIGHER EDUCATION) – **M2**

Students enrolled in master's programs in science and technology may elect to concentrate in computer science. Additionally, they may choose specializations in database development, communication, data management, security and reliability, software integration, information, business intelligence, industrial computing, engineering and networks, artificial intelligence, software, modeling, multimedia, data prospecting, interactive digital games and media, project management, networks, robotics, statistics, information systems, onboard systems, web development, and more.

Other concentrations prepare graduates for specialized applications and modeling tasks. Among these are the concentrations in mathematics, computer science, decision-making, and organization; mathematics and computer science for the humanities and social sciences, computer methods applied to business management (specialization in information systems engineering); and computer science and electronics applied to databases and artificial intelligence.

Computer science competencies are integrated into master's programs in a variety of other areas. Examples include automation, robotics, and industrial computing; biology; chemistry; law; electronics; energy management; finance; economics; engineering; linguistics; mathematics; marketing; mechanics; medicine; neuroscience; space and earth sciences; and telecommunications.

www.campusfrance.org >Students>Studying>PRogrammes>Finding a Master's level programme

www.trouvermonmaster.gouv.fr : Portail national des Masters

More than 30 master's-level programs are taught in English, including some 15 that lead to a national diploma or the equivalent:

Advanced wireless commmunication systems, Big data, Bioinformatics, Cybersecurity, Data science, Cloud computing, Communication networks, Computer sciences, Decision systems, Digital security, Distributed systems and services, Global navigation satellite systems, Information and knowledge, Mobile automatic systems, Systems, Information technologies, Internet, Software verification,

Telecommunications and networks, and more.

www.campusfrance.org >Students>Studying>Programmes>Taking a Program in English in France

DIPLÔME/TITRE D'INGÉNIEUR – EQUIVALENT TO MASTER
(BACCALAURÉAT+5 YEARS OF POSTSECONDARY STUDY) – **M2**

French schools of engineering, both general and specialized alike, confer degrees accredited by CTI, the French commission on engineering degrees. The following offer programs in computer science:

> 3iL Ingénieurs (Limoges Rodez) - Université de Limoges

> École d'ingénieurs des TIC (Villejuif)

> École internationale des sciences du traitement de l'information (Cergy)

> École nationale supérieure d'électrotechnique, électronique, informatique, hydraulique, télécommunications - INP Toulouse

> École nationale supérieure d'électronique, informatique, télécommunications, mathématiques et mécanique - Bordeaux INP

> École nationale supérieure d'ingénieurs en informatique automatique mécanique énergétique et électronique - Université de Valenciennes

> École supérieure d'ingénieurs en informatique et génie des télécommunications (Villejuif)

> École nationale supérieure d'informatique pour l'industrie et l'entreprise - Université d'Evry-Val-d'Essonne

> École nationale supérieure d'informatique et de mathématiques appliquées - Grenoble INP

> École supérieure d'ingénieurs Paris-Est Marne-la-Vallée (Champs-sur-Marne) - Université Paris-Est Marne-La-Vallée

> Institut informatique d'Auvergne (Aubières) - Univ. Clermont Auvergne

> Institut des techniques d'ingénieur de l'industrie Dauphiné-Vivarais

> Institut des techniques d'ingénieur de l'industrie, Provence AlpesCôte d'Azur (Istres, Lille, Toulon)

BEYOND THE MASTER LEVEL

MASTÈRE SPÉCIALISÉ
(**MASTER +1** YEAR OF POSTSECONDARY STUDY)

Year-long programs leading to the Mastère Spécialisé credential are accredited by the Conférence des Grandes Écoles. Ten institutions of higher education offer Mastère Spécialisé programs in computer science applied to banking decisions, project management, networks, system security, and communication systems, among other topics.