

**TELECOM**  
ParisTech



## Graduate Engineering School for Information & Communication Technologies



**Communication & Electronics**  
**Computer Science & Networking**  
**Signal and Image processing**  
**Economics, Management & Social Sciences**

**ParisTech**  
INSTITUT DES SCIENCES ET TECHNOLOGIES  
PARIS INSTITUTE OF TECHNOLOGY

*Master of Engineering – Master of Science – PhD – Advanced Master*  
*All degrees are nationally accredited*

# Welcome to Telecom ParisTech

## EDITORIAL



Yves Poilane  
**Director**

The school was founded more than a hundred years ago, in 1878, and has continuously innovated from creating the word « telecommunications » in 1904, to having the biggest ICT incubator in France today.

Telecom ParisTech is one of France's leading graduate engineering schools and is considered the leading school in the field of information technologies.

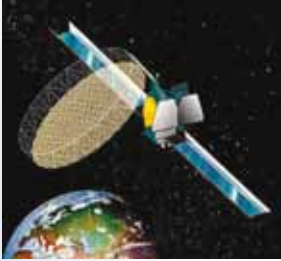
Its disciplines include all the sciences and technologies that fall within the term « Information and Communications » : Computer Science, Networks, Communications, Electronics, Signal and Image Processing, Social and Human Sciences as well as the study of the economic and social aspects associated with modern technology.

- The leading Engineering School in ICT, in France
- Top 3rd to 7th in national rankings of Engineering Schools in France (among 250)
- Highly international : 42% international students, 64 partner universities
- High professor / student Ratio : 1/7  
205 full-time professors for 1500 students
- Innovating : 130 sustainable companies & 1000 jobs created since 1999
- Strong links with industry
- Part of Institut Telecom, a major player in the field of ICT

# Fields of Teaching and Research

Telecom Paris Tech

## Optimizing information transport

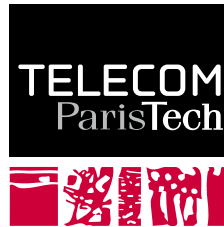


Networks and mobility  
High speed links and optical systems  
Digital communications  
Aeronautic and satellite systems  
Algorithm / Architecture matching

## Improving information processing



Statistical automatic learning methods  
Speech, images and audio processing  
Multimedia content production and processing  
Information system



## Establishing and restoring user confidence

Regulation  
Cryptography, security, biometric identification  
Private life, sociability, culture, ethics  
New technologies and society :  
electronic trade, teleworking, CAL

## Bringing services



Local access and proximity communications  
Ambient intelligence  
Services creation  
Virtual communities : games, education, citizenship

## Safeguarding and enriching our cultural heritage



Databases, indexing, consultation, data mining  
Signal, images, music, text processing  
Virtual reality, creation on-line  
Art and information technologies



3 teaching and research chairs with industry and research partners

- Extraction and Interpretation of Satellite-imagery
- Innovation and Regulation of Digital Services
- IT & Sustainable Development

# Teaching

## Programme Objectives

### Two guiding principles

- providing engineering training of the highest standards
- developing centres of excellence in research.

Training and education in all the sciences and technology related to Information Technologies.



Telecom ParisTech students develop the skills needed to design, develop, operate and manage information processing and transmission systems, skills that are also necessary to access networks and information systems strategically.

Both training and education are stimulated by the high level research activities conducted by the school which also places great emphasis on developing the human and social qualities of the future engineers it produces. Students acquire skills and knowledge of economics and management, as well as English and at least one other foreign language, preparing them for the multi-cultural environment of their future professional life.

A wide variety of post graduate programmes are offered in keeping with these principles.

### Example Electives

Virtual reality, Artificial intelligence, Robotics, Embedded information systems, Imagery analysis, Mobile radio networks, Speech, Sound, Music and Video equipment, Numerical Production, Micro processors and electronic cards, Microwave Radio Frequencies, Mathematical methods and finance, Starting a company, Management and Accountancy, Global Economic Relations.

## Telecom ParisTech

### benefits from internships in prestigious companies like

ALCATEL-LUCENT, BEARING POINT, BNP PARIBAS, ORANGE (France Télécom), IBM, MICROSOFT, MOTOROLA, ST MICROELECTRONICS, THALES RESEARCH & TECHNOLOGY, TOSHIBA Corporation, YAHOO! Inc R&D, .....



# Master of Engineering

## Diplôme d'ingénieur

A professional Master's degree, normally the final years of a five year programme, mostly taught in French.

**Admission:** Highly selective: top 3% of French science students. Candidates may apply according to their academic degrees, either for a transition year, or directly for admission to the Master of engineering programme.

**Programme:** Includes theoretical and scientific teaching, with extensive coverage of social, cultural, economic and management issues, and periods of industrial or laboratory internships. The programme provides students with both broad spectrum and in-depth abilities, implying in general a heavy teaching load of more than 700 hours per year.



# Master of Science

## Master's programmes...

A professional, postgraduate degree with two semesters of taught course and one semester of internship. Courses are in English for one semester and in French for the second semester in Paris and totally in English in Eurecom.

**Admission:** A minimum requirement of a four year bachelor's degree in the scientific field of the Master.

Networked Computer Systems  
Computer Security (Eurecom)  
Mobile Communications (Eurecom)  
Digital Radio  
Digital Communications  
Embedded Systems  
Multimedia (Eurecom)  
Sciences & Technologies (University UPMC)  
Mathematics & Computing (University Paris Diderot)

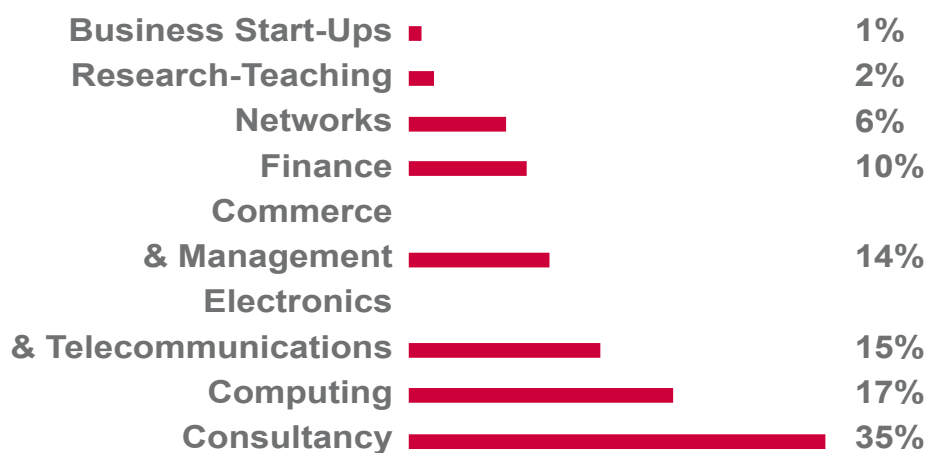


# Careers for Telecom ParisTech graduates



## First Job

91 % have an employment contract within 2 months of graduating and more than two-thirds before finishing their studies



## Where to find Telecom ParisTech graduates

Altran, Thales, Bouygues Telecom, TF1, Schlumberger, Cap Gemini, Ernst & Young, Peugeot Citroën, Michelin, BNP, Alcatel, IBM, Crédit Agricole, France Télécom, Renault, France Boissons, Butagaz, EDF, Groupe Danone, L'Oréal, Nortel Networks, Sony, Google, HSBC, Mc Kinsey, Accenture, Amadeus, Hitachi, Cisco...

# Research Competitive Clusters

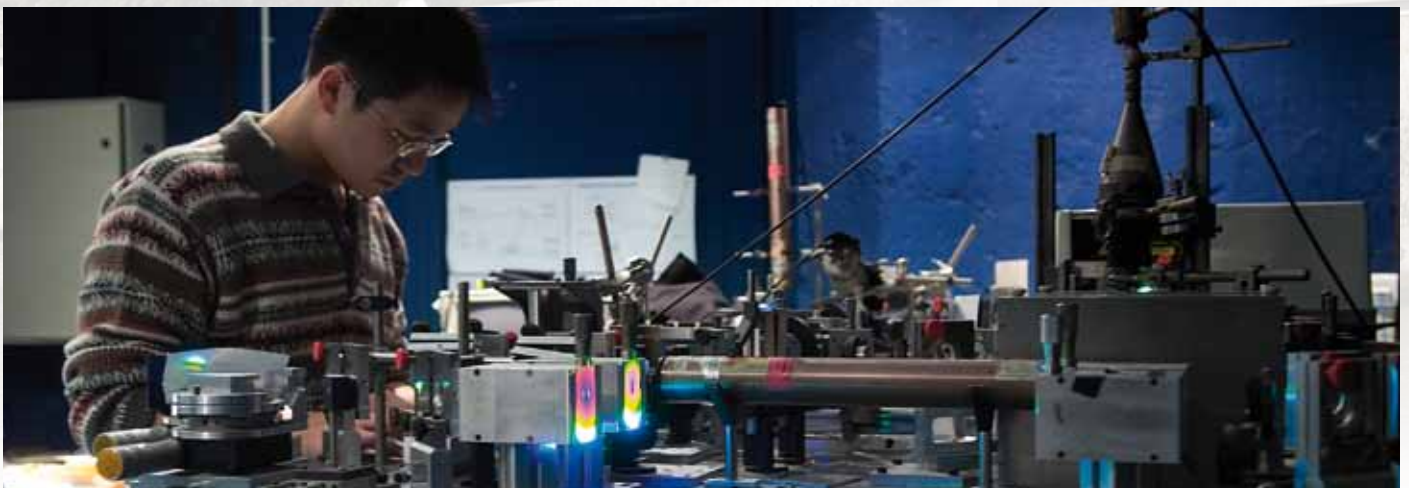
The Fondation Telecom brings together industrial partners from the fields of telecommunications and multimedia to pool funding for training initiatives and research conducted by Institut Telecom: scholarships, innovation prizes, project incubation, chairs, incentive projects or funding for specific projects.

Telecom ParisTech is part of Institut Telecom. In 2006, Institut Telecom was awarded the Carnot label, in recognition of the quality of all the Institute's industrial partnership relations. This scheme aims to bring forth centers of excellence on a national and international level through the creation of consortia.



Set up in 2005 by the French government, this scheme aims to bring forth centers of excellence on a national and international level through the creation of consortia. Telecom ParisTech together with Eurecom have stepped up their partnerships with large-scale companies, SMEs and academic laboratories, becoming key players in six competitive clusters:

- Systematic Paris Région
- Cap Digital Paris Région
- Secured Communicating Solutions
- Medicen Paris Région
- Aerospace Valley
- E-secure transactions (TES)



# Post-Master's Programmes

PhD...

The programmes train students through innovative research work and taught courses, developing their creative, technical and managerial capacities.

**Admission:** PhD students are chosen among the MSc., MEng graduates of recognised world class master programmes.

**Programme:** The PhD programme lasts about three years. Research work may respond to industrial or academic objectives. PhD students are attached to specific laboratories in different schools under supervision of professors according to their fields.



Computer Science  
Electronics  
Networks  
Economics and ICT uses

Signal & Image Processing  
Communications  
Applied Mathematics

## Advanced Master...

A professional course of one to one and a half years, taught entirely in French.

**Admission:** Essentially after a Master's degree, but possibly also after a bachelor's degree supported by several years of professional experience. For French speaking candidates.

**Programme:** A taught and project oriented Master's, including an industrial internship followed by a professional thesis. It aims to assist students in further specialisation, conversion, reorientation, with a clearly defined professional objective.

**Application:** through an admission board.



**Ratio Professor/Student : 1/7**

**205 full-time professors for 1500 students, 500 part-time professors from industry.**

At Telecom ParisTech, professors are also researchers. Students benefit thus of direct access to Research labs.



## Innovation

### Technology Transfer and Entrepreneurship

**STREAMEZZO** is a software publisher for the Rich Media mobile market. Founded in 2004, it is the fruit of joint spin-off between an INSTITUT Telecom / Telecom ParisTech professor and researchers from France Telecom R&D. It raised capital of € 11 million in 2006. [www.streamezzo.com](http://www.streamezzo.com)

**STRIBE**, launched on september 09, enables any website to easily create a branded, customized social network. Stribe provides an innovative service that connects a community of site visitors, and gives them the ability to talk and share information across all areas of a site. Stribe helps companies easily integrate a robust social network on their existing site.

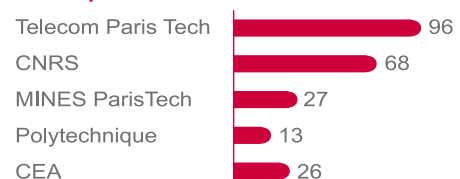
Research activities build up close ties between companies and laboratories, the major players in STIC on the international level. These links are strengthened by long-term partnerships, technology transfers and platform sharing, etc. Industrial players can therefore access laboratories' results and expertise to create new economic activities.

Through support programs for business start-ups and its two incubators, students, graduates, doctoral students as well as teaching and research staff are encouraged to propose and become involved in business start-up projects.

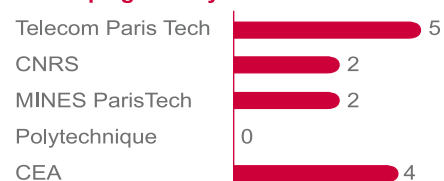
With one hundred eighty five businesses started since 2000 and more than forty-five hosted at any given time, the Telecom ParisTech incubator is the largest in France for the field. It is presently extended to become the incubator of ParisTech.

#### Number 1 Incubator in the field

##### Start-ups between 1999 and 2008

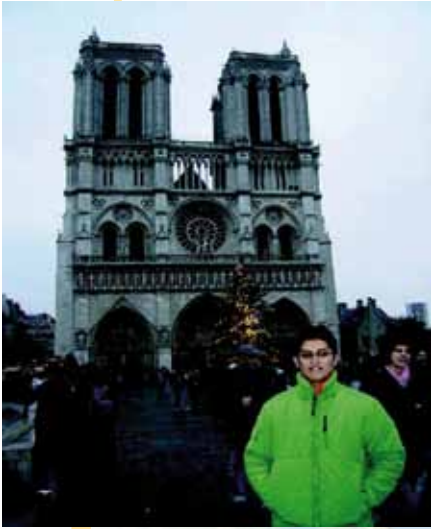


##### Start-ups gone beyond M€ turnover



# Students' Words

**Angel Mercado. Peruvian. Class of 2009.**



One of my goals was to study at a prestigious institution specialised in telecommunications. When we speak of telecommunications, we think of France and Telecom ParisTech, a school recognised both for its demanding standards and for the quality of its students originating from all over the world and even all over France ! Study at Telecom ParisTech provided me with solid and specialized knowledge in the field of mobile networks as well as offering me the possibility of working in major companies specialised in the field. Having completed my former background with newly acquired knowledge at Telecom ParisTech, I now feel able to achieve my main goal : « Manage a big company and, why not, own and manage my own company. » To study at Telecom ParisTech is to enter a « mini-world », as we meet our counterparts from all over the planet. Its a very pleasant multicultural environment where we can compare our experience and receive invaluable advice for our private and professional lives. And one certainly must mention the qualities of the faculty and administrative staff, always ready to meet our needs.

**Simon Maalouf. Lebanese. Class of 2007. Analyst at Morgan Stanley UK.**



Telecom ParisTech is one of the best French engineering schools. You can benefit from a world-class education that you can customize according to your needs and interests, benefit from the knowledge of exceptional professors, high achieving professionals and renowned researchers, and connect into a large network of Alumni actively present in multinational companies all over the world. This makes Telecom ParisTech a unique school. I thus managed to carry out two internships, one in London and another in Barcelona, in Spain, and then sign a work contract with Morgan Stanley to work in their London office, six months prior to graduation. Integrating with the French and international students is pretty simple and easy. You can enjoy a week-end in South France, organised by the Students Club, join the English debating Club, carry a project for Telecom carriers through the Junior Company of Telecom ParisTech or even attend Spanish courses. This allowed me to enjoy my time and work with self-motivated and enthusiastic people in a multicultural environment, which prepared me to successfully start my first employment, nailing a nomination for the "Morgan Stanley IT Europe Monthly Recognition Award" on my second month on the job.

# Partner Universities

## AUSTRALIA

Queensland University

## AUSTRIA

TU Vienna

## BELGIUM

Université Catholique de Leuven KUL, Université Catholique de Louvain-la-Neuve UCL, Université de Gent

## BRASIL

Pontifica Universidade Catolica de Rio de Janeiro, Universidade de Sao Paulo

## CANADA

Polytechnique de Montréal

## CHINA/TAIWAN

Southeast in Nanjing, University of Tsinghua, University of Beijing, Beijing University of Postes and Telecommunications, University of Tongji, University of Jiatong, University of Wuhan, Nanjing University, Fudan University

## CZECH REPUBLIC

University of Technology of Prague

## GERMANY

University of Stuttgart, RWTH Aachen, TU Darmstadt, TU München

## HOLLAND

University of Technology of Delft

## HUNGARY

BME Budapest

## ITALY

Politecnico di Torino, Università degli Studi di Genova, Politecnico di Milano, Sapienza Università di Roma, Università degli Studi di Napoli Federico II

## JAPAN

Tokyo Institute of Technology, Tohoku

## KOREA

KAIST, SNU

## LEBANON

École supérieure d'ingénieurs de Beyrouth, Université de Liban  
Monterrey Tech

## MEXICO

## MOROCCO

Institut national des Postes et Télécommunications de Rabat

## NORWAY

Norwegian University of Science and Technology

## POLAND

University of Cracow (AGH), Warsaw UT (WUT)

## PORTUGAL

Instituto Superior Técnico (IST) Lisboa

## ROMANIA

Universitatea Politehnica din Bucuresti

## RUSSIA

Novosibirsk State University, Tomsk State University

## SINGAPORE

National University of Singapore

## SPAIN

Universidad de Zaragoza, ETSIT & Informatica de UPM - Madrid, Universidad Ramon Llull Barcelona, ETSIT de UPC - Barcelone

## SWEDEN

KTH Royal Institute of Technology, Chalmers

## SWITZERLAND

ETH Zurich, Ecole polytechnique Fédérale de Lausanne (EPFL)

## TUNISIA

SUPCOM, Tunis

## TURKEY

Istanbul Bogazici, Bilkent University, ITU Istanbul

## UNITED KINGDOM

Imperial College of London, Queen Mary College, University of Bristol, University of Cambridge

## USA

Columbia University, Carnegie Mellon, Urbana Champaign

# One Degree Telecom ParisTech

## Two campus location, Paris and Sophia Antipolis

The Paris campus created in 1878 is the birthplace of the term « telecommunications », coined in 1904 by Edouard Estaunié, the school's director at the time. The Paris campus offers courses which cover the full range of information and communication technologies. Students can also take courses in economics, management and entrepreneurship. The structure of the offer is modular. Students are free to create their professional profiles according to their interests and aspirations.

The courses offered are in direct response to the increasing diversity of professions in today's information society. The human dimension is emphasised, developing managerial skills, the ability to work in a multicultural context, and a sense of responsibility with regard to the technologies Telecom ParisTech graduates will master.

With 42% foreign students of 40 different nationalities, the international environment is experienced on a daily basis on the Paris campus. What's more, its central location in the capital city facilitates close links with research and innovation.



As well as studying in Paris, students have the option to study in Eurecom in the second and third years of their degree. Eurecom\* founded in 1991 is situated on the French Riviera in Sophia-Antipolis, the leading European Technology Park, providing a unique environment in the field of Information Technologies.

The goal of the founding schools was to pool their resources to create a small structure of higher education and research in communication systems.

- Close links with industry and the professional world: training courses in France and abroad, partnerships with companies

- Eurecom is the first school outside the United States to receive the Major Educational Innovation Award awarded by the IEEE.

Based in Europe's top science park, Institut Eurecom hosts permanent facilities for many leading telecommunications companies providing the perfect environment for practical research whilst immersed in an industrial environment. Students carry out projects in conjunction with firms. An international dimension: 70% of professors are of foreign origin. 100% of courses are taught in English. 70% of students are of foreign origin, 80% of placements are done abroad. More than 50% of previous students have gone on to work abroad.

\*Eurecom is a subsidiary of Institut Telecom.

# Campus ParisTech

Telecom ParisTech is a founding member of ParisTech, a research and higher education cluster of excellence.

ParisTech is composed of twelve French Grandes Écoles (Engineering and Business Schools) that cover a sweeping spectrum in science, technology and management. Many of them were founded back in the 18th century, and are located in Paris or nearby.

ParisTech offers top Master of Engineering, Master of Science, MBA and PhD courses covering every area of science and engineering. Students receive science and managerial training preparing them to hold key positions in companies, in civil service or in academic research institutes. By joining one of these programmes, students meet international students and researchers and are in constant contact with the business world.

## Facts and figures

19 700 students

More than 2,000 PhD students

3,500 professors and lecturers

165 000 alumni

## International Networks

ParisTech is the French member of the IDEA League network, which brings together five of Europe's finest technical universities:

- Imperial College London (United Kingdom)
- TU Delft Technische Universiteit Delft (The Netherlands)
- ETHZ Eidgenössische Technische Hochschule Zürich (Switzerland)
- RWTH Rheinisch-Westfälische Technische Hochschule, Aachen (Germany)

## Industrial Partnerships

Some of the firms which financially support the Master and PhD courses of ParisTech are: Danone, France Télécom, Lafarge, Renault, Thales, Total, Société Générale, Veolia...

# ParisTech

Institute of Technology situated in Paris, France

[www.paristech.fr](http://www.paristech.fr)



# For incoming students, Telecom ParisTech offers innovative online services

Before your arrival and to help you quickly integrate into the academic environment, Telecom ParisTech invites you to acquaint yourself with the « methodology of the French academic and scientific milieu and the requirements of the teaching staff ».

This web-based course draws on our multicultural experience to familiarize you with types of academic communication typical at Telecom ParisTech - how to effectively follow a lecture and actively participate, read and exploit course materials with a view to taking examinations, working in small groups, etc.

## and provides/in situ/digital working environment

### An interactive intranet:

- gives access to information concerning studies: timetables, catalogues of electives or modules, sites and pedagogical documentation, student and administrative records, etc.
- allows interaction with other students, putting work on line, taking part in online discussions, acquiring access to directories, etc.

Finally, as a partner of the OpenCourseWare Consortium, Telecom ParisTech provides a full online set of pedagogical supports by its research and teaching staff via the Paristech Graduate School ([graduateschool.paristech.org](http://graduateschool.paristech.org)) portal as well as that of the Institut Telecom Shared Courseware ([savoirspartages.institut-telecom.fr](http://savoirspartages.institut-telecom.fr)).



## Modern languages & cultures

To succeed in an increasingly international professional context, Telecom ParisTech provides students with unusual and exciting language classes like the English theatre club, debating sessions based on the British parliamentary debate system, bilingual courses (in two foreign languages), recruiting simulations, videoconferencing, etc.

They all contribute to developing communication skills which enable students to interact fully in the context of a foreign culture. Because engineers have to operate in an international context (work within a multicultural team, carry out missions abroad, use a foreign language as a working language), training in foreign languages and intercultural communication occupies a significant place in the education of our students.

To obtain the degree, they must have a command of three languages, at different levels, with a compulsory mastery of French and English. The department of Languages and Cultures offers classes in ten languages, from native teachers:

**French** as a foreign language (FLE), **English**, **German**, **Spanish**, **Japanese**, **Polish**, as well as **Chinese**, **Italian**, **Arabic**, **Russian**.



# Accommodation

## near Telecom ParisTech

The Maisel (Maison des Elèves de Telecom ParisTech) is the Halls of Residence used by Telecom ParisTech students. Students benefit from affordable rents and may be eligible for an accommodation allowance. The Maisel offers 530 beds located across three sites



# Admission

## for international students

### **Master of Engineering / diplôme d'ingénieur :**

By on-line application for students having completed 3 to 4 years of undergraduate studies in Science or Engineering, or through joint programme with partner universities.

### **Master of Science:**

By on-line application for students having a 4 years BSc of Science or Engineering

<http://www.telecom-paristech.fr/en/msci/enrolment-procedure/>

### **Ph D**

By contacting our labs or professors

[http://www.telecom-paristech.fr/en/research/high\\_tech](http://www.telecom-paristech.fr/en/research/high_tech)

Scholarships  
for 2008 - 2009  
600 k€  
from industry  
and governments  
with 11 Eiffel  
scholarships

# 2

## Two campus locations

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### Students choose TELECOM ParisTech for :

- wide choice of electives in ICT
- quality of research and teaching
- international paid internships
- halls of residence
- highest salaries in first job
- French taught as a foreign language
- rich urban and cultural environment
- dynamic student community life