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PARIS INSTITUTE OF TECHNOLOGY
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TELECOM PARIS
école nationale supérieure des télécommunications

**Master Sciences and Technology**

# Information Systems
# Electrical Engineering

at Télécom Paris

## KEYWORDS

Digital Communications / Optical Communications / Radiofrequency / IP / WDM / Integrated Circuits / Design / Systems

## OBJECTIVES

With today's rapidly advancing technologies, telecommunications has become a multi-faceted field, demanding knowledge of numerous fields such as system networking, telecommunication protocols, transmission systems, electronic processing systems for information, economics, and regulatory policies. As a result, organizations increasingly need individuals who can readily apply current information and technologies from several disciplines in order to seek innovative solutions to the full range of telecommunication needs. This is essential to remain competitive.

Recognizing the demand for highly trained telecommunications professionals, Telecom Paris proposes an innovative programme that allows students to obtain a Master of Science in Electrical Engineering.

This programme is designed to give students state-of-the-art knowledge in telecommunications core technology and problem solving experience in analyzing, designing and implementing telecommunications systems. The programme emphasizes the system aspect of telecommunications technologies to enable students to integrate developments in Digital Communications and Electronic Telecommunication Systems. It provides the opportunity for students from different backgrounds and with different career goals to pursue advanced studies in Telecommunications.

## BACKGROUND

Good background in mathematics, signal and image processing and telecommunications is needed.

## LOCATION

Télécom Paris is located in the southern part of Paris, home to headquarters of major companies and near a very picturesque area called the “Butte aux Cailles”.

## PROGRAM

The program includes courses over 3 quarters and a one semester internship with industry or in a research laboratory. Core courses are taught in English in the fall quarter and subsequent courses related to the chosen option are conducted in French.

The 1st term courses are run in English and include core courses:

- Architectures and Methods for Digital Design
- Signal Processing for Digital Communications
- Fundamentals of Optical and Radiofrequency Systems

The 2nd & 3rd terms courses are run in French. The students choose one option and one area of concentration with required courses:

**Option Digital Communication / 3 areas of concentration**

**Optics**
Optical Communications and WDM

- All-optical networks for IP and ATM
- HighSpeed Networks and IP New Technologies

- New optical functions or Broadband Local Loops
- Projects

**Radiofrequency**
- Advanced digital communications
- Radiofrequency and Microwaves
- Wireless Communications Systems (ACOS)
- Smart cards and applications

**Transmission and networks**
- Advanced digital communications
- Mobile Radio Networks
- Advanced Communications Systems
- Broadband Local Loops

**Option Electronique pour les Systèmes de Communication /3 areas of concentration**

**Electronics for radiocommunication systems**
- Electronics System Design for Radio communications
- Radio Frequency & Microwaves or Mobile Radio Networks
- Simulation tools for wireless networks
- Signal Processing : Labworks using Matlab

**System on chip design**
- Electronics System Design for Radio communications
- Microelectronics
- Project
- Application Specific Integrated Circuits

**Electronics for embedded computing**
- Architecture, System and Compilation
- Real time : from algorithms to middleware
- Project

Robotics and embedded systems

## CALENDRAR

Courses and projects : September – June (9 months)
Internship and thesis: July-December (6 months)

## ENTRY REQUIREMENTS

Entry requirements include a four-year degree in the engineering fields covered by the Master program of Télécom Paris.

## LANGUAGE PROFICIENCY

**English:** when applying, students must provide evidence of proficiency in the English language. This could include:
- having English as your mother tongue;
- studies in an English-speaking country;
- acquisition of an English Language qualification (TOEFL: 550 /IELTS: 5.5 / TOEIC: 750 / Cambridge CAE).

**French:** when applying, applicants are required to have the TEF II level or equivalent (pre-intermediate) as a minimum.
Nota: The program includes French courses for pre-intermediate and advanced level students throughout the whole program.

## TELECOM PARIS

Télécom Paris was founded more than a hundred years ago and is classed among the Grandes Écoles d'Ingénieurs. Because of its high scientific standard and the extremely competitive admission procedures, Télécom Paris can be compared to the highest level engineering schools and universities that one would find abroad.

Télécom Paris today has a faculty of about 150 full-time staff (full professors, associate and assistant professors), over 200 part-time lecturers and a student body of about 1000 students (including 200 PhD students). Télécom Paris's four departments carry out research and teaching activities in the school's central areas of expertise:

- Department of Communications and Electronics (Comelec).
- Department of Computer Science and Networks (Infres).
- Department of Signal and Image Processing (TSI).
- Department of Economics and Social Sciences (EGSH).

## WEBSITE

http://www.enst.fr/en/post_graduate/msci/ee.php