

ESEO Institute of Science & Technology - France

INTERNATIONAL MASTER'S PROGRAMMES

ACCREDITED BY THE FRENCH MINISTRY OF EDUCATION
AND THE «CONFERENCE DES GRANDES ECOLES»



- INFORMATION TECHNOLOGY
- EMBEDDED SYSTEMS
- ELECTRONIC SYSTEMS
- NETWORKING
- TELECOMMUNICATIONS
- BIOMEDICAL ENGINEERING
- ENERGY & ENVIRONMENT
- MANAGEMENT & NEW TECHNOLOGIES

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G R O U P E



ANGERS • DIJON • PARIS • SHANGHAI



MASTER OF ENGINEERING PROGRAMMES

ESEO INSTITUTE OF SCIENCE AND TECHNOLOGY, FRANCE

ESEO is a comprehensive Institute of Science and Technology founded in 1956. It has received its accreditation from the CTI -Commission des Titres d'Ingénieurs continuously since 1962 and is part of the "Grande Ecole" CGE network, a non-profit association; members are very selective and prestigious schools of higher education. ESEO has 4 campuses (Angers, Dijon and Paris in France and Shanghai in China) and is recognized by the industry as one of the best schools of engineering among 205 in France. Each year, some 200 students obtain the ESEO Master of Engineering Degree ("ingénieur").

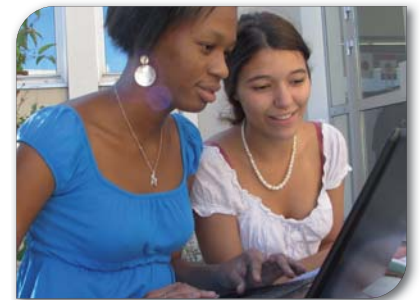
Supported by institutional partners, the research laboratory at ESEO is composed of 6 teams : GSII (signal and image for instrumentation : syncope detection, Laser Doppler anemometry ..), GRACE (architecture of electronic devices : EMC of ICs, mixed-signal modeling ...), RF AND MICROWAVE (RFID antennas, wireless energy transfer ,...), G3M (mathematics, mechanics and materials), GRI (engineering models : security of ad hoc networks, web services ,...), TRAME (model transformation for embedded systems). The laboratory maintains close relations with industrial partners (CNRS, LAUM, Atmel, STMicroelectronics, Thales, etc...) and universities, and participates in projects funded by the French government and the European Union. The research laboratory of ESEO also participates in the organization of national and international conferences such as IEEE ICEIS, SFA, etc.

DIPLOME D'INGENIEUR = INTERNATIONAL ACCREDITATION AS MASTER

In France, the title of «ingénieur diplômé» is nationally recognized and protected by the law. This protection is an assurance of the quality of engineers' basic education and of their capacity to assume broad responsibilities in the course of their professional life. The Bologna agreement, gathering over 45 countries including the European Union, has established that the French diplôme d'ingénieur is equivalent to a Master's degree. Only national degrees at "300+ ECTS credits" level (ex: diplôme d'ingénieur) meets the international requirements for an "official European Master's degree".

ENROLLMENT

The enrollment consists of those students who have consistently obtained the highest grades throughout the last few years of their secondary studies. ESEO is organized over a period of 5 years with both post-baccalauréat (A-Levels) and post-Licence (Bachelor) admissions. The five-year curriculum aims to provide students with high-level proficiency in several specialised fields, as well as to develop their human value.



A PROGRESSIVE PEDAGOGY

Throughout their curriculum at ESEO, engineering students are supported in the elaboration and achievement of their personal and professional projects. ESEO endeavours to implement an active and motivating pedagogical approach:

- personal achievements
- training through projects, teamwork
- **international experience** (min. 3 months, max. 24 months)
- extensive use of Information and Communication Technologies (ICT)
- **3 industrial work placements** / internships (total 12 months experience)



A TWO-YEAR FIRST CYCLE (1ST AND 2ND YEARS)

This first cycle provides students with the basic training required for the rest of the engineering curriculum :

- Mathematics (420 h), physics and electronics (380 h), industrial sciences (180 h), fundamentals of electronics and computer sciences (120 h), tutorials (Travaux dirigés) and practical work (projects) (680 h), cultural general studies (120 h), English (100 h), optional second foreign language (100 h), industrial placement (average 2 months).

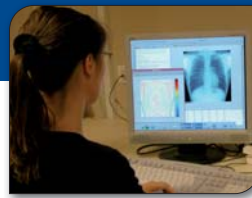
A THREE-YEAR SECOND CYCLE (3RD, 4TH AND 5TH YEARS) - MASTER

The objective of the 3rd year is to provide basic technical and technological knowledge, preparing for the later specialized engineering education:

- Mathematics and software engineering (180 h), electronics and signal processing (150 h), project management and communication skills (116 h), Micro processors (60 h), electrical engineering (35 h), tutorials (Travaux dirigés) and practical work (travaux pratiques) (250 h), English (80h), optional second foreign language (80 h), optional fields (80 h)

The 4th year (Master 1) and the 5th year (Master 2) emphasize in-depth learning in methodology and skills. ESEO students can make a choice among 7 majors at ESEO, and among 51 majors with partner universities (dual-Masters).

1. In France, the status of «Ingénieur diplômé» is protected by law, and only schools accredited by a national «Commission des Titres d'Ingénieur» (CTI) are allowed to award it. This official commission of the Ministry of Higher Education was set up by the law of July 10, 1934.



7 FIELDS OF SPECIALISATION

Common classes in : English, law, human resources management, optional fields. Industrial placements during the 4th year - Master 1 (average 4 months), and the 5th year - Master 2 (average 6 months).

The curricula, which meet the international quality requirements for a Master's Degree, are worth 300 ECTS (European Credit Transfer System) credits in the 1999 European Bologna agreement).

3 WORK PLACEMENTS INTERNSHIP PERIODS

- JULY TO AUGUST
- JUNE TO SEPTEMBER
- FEBRUARY TO JUNE
or JULY TO DECEMBER

① Information Systems & ② Networking & Telecommunication :

Decision making systems, IT and Internet law, network protocols, Cisco 640-821 certification (CCNA 1 - 2), operator networks, N-tier architecture (J2EE, .NET, ...) database administration, LAMP, Linux, security, Windows and IT projects..

③ Signal Processing & Telecommunications :

EMC, microwave circuits, RF electronics, signal processing, state space process control, VHDL-IP, RFID, DSP, random signal processing, Introduction to C++, microwave practical work, embedded signal processing project, Image processing and compression project, video compression project, VHDL and IP project, neural network project..

④ Embedded Systems & Automation :

RF electronics, microwaves circuits, RFID, EMC, digital signal processing, VHDL-IP, software engineering – realtime UML, realtime kernel programming, electric actuators, linear process control, state space process control, DSP, process control project, embedded systems project..

⑤ Embedded Electronics :

EMC, RF, electronics, Microwaves circuits, VHDL-IP, RFID, C++, Microélectronique, Noise in electronic circuits, Verilog, Nano technologies, MEMs, Microwave project, MEMs project, CMOS amplifiers project, Data logger project, RFID project, VHDL-AMS, SystemC

⑥ Biomedical Engineering :

Anatomy, physiology, molecular and cellular biology, physics, signal processing, image processing, ultrasound imaging, data mining, biomedical-oriented IT, EMC, bibliographical study, image processing project, embedded systems project.

⑦ Energy & Environment :

Thermal transfers, heating-ventilation-air conditioning, numerical processing and simulation techniques, process control, electrical engineering, power grids and smart grids, battery, lighting, virtualization, Field buses, Energy efficiency, power management, renewable energy sources, climate change, mobility and transportation, ROHS and recycling, sustainable design, financial and energy markets,...

40 INTERNATIONAL DUAL-MASTERS

(ESEO + partner University) are also proposed in various fields by ESEO in collaboration with the following international Universities :

- Argentina : University of Belgrano
- Australia : University of Wollongong
- Brazil : University of PUC Minas
- Canada : University of Sherbrooke
- China : City University
- Germany : Ulm University of Applied Sciences
- Romania : University of Cluj
- United Kingdom : University of Plymouth
- USA : IIT Chicago



9 RESEARCH-ORIENTED FRENCH DUAL-MASTERS

(ESEO + partner University) are also proposed by ESEO in collaboration with French Universities :

- Systems, Processes and Information, with UTC Compiègne
- Optical Sensors and Instrumentation, with the University of Angers
- Dynamic Systems and Signal Processing, with the University of Angers
- Biological and Medical Signal Processing and Imaging, with the University of Angers
- Automation and Production Systems, with the University of Nantes
- Signal Processing, with the University of Rennes
- Integrated Devices and Microtechnology, with the University of Rennes
- Computer Science - Computing, Interaction and Decision, with the University of Angers
- Networking with the University of Pierre and Marie Curie (Paris VI)

2 MANAGEMENT DUAL-MASTERS

(ESEO + partner institution) are proposed in economics and management fields by ESEO, in collaboration with renowned management schools :

- Audencia, Nantes
- ESSCA, Angers



PRACTICAL INFORMATION

“Grandes Ecoles”

The French “Grandes Ecoles” are prestigious, high-level institutions from which most of France’s top managers graduate. As a Grande Ecole, ESEO offers Master’s programmes accredited by the French Ministry of Education or the “Conference des Grandes Ecoles”.

Relations with companies

One of the strong points of the French Master’s programmes : companies, whatever their size, participate closely in the training of French engineers and managers.



Eligibility for international students

The minimal entry requirement is a Bachelor’s degree or equivalent. Please refer to the website and the application forms for detailed information on the specific requirements of each programme.

Tuition fees

Please refer to the web site for detailed information on the tuition fees for each programme. Fees charged by the institution do not include living expenses. Students must be able to prove financial support of at least 500 euros per month for living expenses in France.

Student visa

For France, all students must obtain a student visa, except those from EU/EEE countries. Please refer to the French Embassy (Campus France Office) in your country for the required documents. ESEO is a full member of Campus France : www.campusfrance.org.

Resident permits

In France, resident permits will be issued by the «Préfecture» on the students’ arrival.

Accommodation & catering

Help will be given to find accommodation either in student halls of residence, in apartments or with families. Catering is available in all Angers, Dijon and Paris student restaurants (around 3 €). Student cafeterias are open on most days on the campuses.

Student life

At ESEO, students can participate in a variety of activities through more than 30 clubs and associations which offer leisure activities such as sailing, football, music, theatre, photography, humanitarian aid... This is a source of conviviality, of friendship, and reveals our special “Grande Ecole” spirit.



Angers



Paris



Shanghai



ESEO INTERNATIONAL RELATIONS

Contacts for students, professors, universities, companies

- In France : Ms Isabelle ORY, tél. +33(0)2 41 86 67 67 – isabelle.ory@eseo.fr

- In China : Ms Carole ZHU, tél. +86(0)21 6307 3005 - Zhu.yi@esai.org.cm

Please refer to the web site for the latest detailed information : www.eseo.fr