

## ENGINEERING EDUCATION

In France the initial education of engineers is provided by more than 200 Higher Education Institutions, namely Engineering Schools with a long-standing tradition called the « Grandes Ecoles d'Ingénieurs ».

These institutions of higher learning may be autonomous or integrated within Universities. Their status is either

- Public (3/4 of the Schools) : they are State funded and are under the supervision of a Ministry : National Education, Agriculture, Equipment or Defence
- Private : they are under the supervision of the Ministry of National Education
- Consular : they are under the supervision of the Chamber of Trade and Industry

The « Grandes Ecoles d'Ingénieurs » offer almost 400 engineering degrees in various engineering fields. They award the engineering degree (Diplôme d'Ingénieur) and title of **Graduate Engineer (« Ingénieur Diplômé »)** after completion of a **five year study and training programme** (the level corresponds to five years after the end of secondary studies concluded in France by the Baccalauréat certificate).

As a result of the 2002 French higher education reform (linked to the Bologna agreement), the degree of "Ingénieur Diplômé" is now recognized as a Master level or "**grade de Master**" corresponding to 300 ECTS.

According to the profile of the Engineering School, the title of « Ingénieur Diplômé » is delivered with or without the mention of a specialization field on the diploma.

Engineering programmes leading to the title of « Ingénieur Diplômé » are accredited by the **Commission des Titres d'Ingénieurs (CTI)**, an authority with parity representation from academia and industry. Accreditation is granted for six years and is renewable. The title of « Ingénieur Diplômé » is protected by the law.

The « classical » study programme of an Ecole d'Ingénieur includes around 4000 hours of academic education and 30 weeks of industrial training divided in two or three periods.

Engineering education provided by the French Ecoles d'Ingénieurs shares some common features :

- a) a generalist profile associating scientific, technical and humanistic education as well as applied training
- b) a selective admission based on competitive entrance examinations requiring a high level in scientific subjects ; according to the type of School this may take the form of :
  - . an entrance examination after the Baccalauréat certificate for Engineering Schools with a five-year integrated programme

- . a nation-wide entrance examination after completion of two intensive years of sciences-oriented *classes préparatoires* following the Baccalauréat (for traditional Engineering Schools with a three-year programme that recruit students after the two years of scientific preparatory classes)
- c) an active partnership with industry, illustrated by student industrial placements during their studies
- d) the international dimension of education (foreign languages, validation of a semester or a year of study abroad, double degrees)
- e) quality academic supervision and student guidance due to human-scale institutions

Cooperation with industry is particularly emphasized in a range of engineering programmes called « **Formations d'Ingénieurs en Partenariat** » - **FIP** (Engineering Education in partnership). FIP is the new name for « NFI – Nouvelles Formations d'Ingénieurs » created in the 90ties. These programmes form engineers with a more technical and applied-oriented profile. The educational project relies on alternative periods of apprenticeship and study. It is a more concrete education relying on experimentation and linked to the companies needs.

Parallel to the general education programme, the universities offer a wide variety of professionally oriented education starting from the first cycle.

Within the restructuration of the higher educational studies (LMD) according to the Bologna agreement this professional programme has two levels :

- Bac + 3 with the creation of the professional licence allowing students who do not wish to study more than 3 years of higher education to obtain competences for a better insertion in the labor market.
- Bac + 5 with the creation of new professional Masters to replace the former IUP, MST, DESS

3<sup>rd</sup> cycle education

Graduate engineers may proceed with their studies by preparing.

- 1- A research Master prepared during the 3<sup>rd</sup> year of engineer education( past DEA)
- 2- A specialised Master CGE (not a national diploma but label of the Conference des Grandes Ecoles)
- 3- A professional Master for a double competency (marketing, finance)

## Academic Title Protection

In France, the engineer profession is not protected, nor controlled.

The title of “ingénieur diplômé” is granted for a long cycle Bac + 5. It is protected by the law and delivered by “La Commission des Titres d’Ingénieur” (CTI).

Engineers “diplômé par l’Etat” DPE are also recognised by CTI. This title allows persons who have not obtained their education at an accredited school to obtain the title of “ingénieur diplômé”. It is granted under conditions :

- 5 years of jobs generally consigned to engineers
- Pass a test organised by the state.

The CTI authorisation has a maximum duration of 6 years. It is renewable after a detailed evaluation procedure of CTI. CTI proceeds regularly to controls.

Commission des Titres d'Ingénieur  
61-65 rue Dutot  
F-75732 Paris cedex 15  
Tel : 00 33 (0)1 55 55 75 06  
Fax : 00 33 (0)1 55 55 68 78  
<http://www.commission-cti.fr>  
Présidente : Michèle GELIN

Competent authorities for the recognition of diplomas

Academic Recognition  
Ministère de l'Éducation Nationale  
Direction des affaires générales  
Internationales et de la coopération  
4 rue Danton  
F-75006 PARIS  
Tel : 00 33 (0)1 55 55 10 10

Professional Recognition  
Application of the General Directive 89/48  
ENIC-NARIC France  
CIEP  
1 avenue Léon Journault  
92310 Sèvres  
Tel : 00 33 (0) 1 45 07 60 00 - (0) 1 55 55 04 28  
Fax : 00 33 (0)1 45 07 60 01

## Professional Organisation

### a) National

#### 1. CNISF – Conseil National des Ingénieurs et des Scientifiques de France

7 Rue Lamennais  
F-75008 PARIS  
President : Noël Clavelloux  
Tel : 00 33 (0) 1 44 13 66 88  
Fax : 00 33 (0) 1 42 89 82 50  
Website : <http://www.cnisf.org>

#### Objectives

The CNISF is the sole representative for the body of engineers and scientists recognised as such by their diploma or the profession they exercise. The association is recognised as a public utility since 22<sup>nd</sup> December 1960.

The CNISF assembles 160.000 members in 194 associations, of which 160 are associations of alumni from engineering schools and scientific associations, 24 are regional unions, 10 foreign sections and 2000 are direct members. The CNISF

represents 450.000 engineers and scientists of which 150.000 engineers have a long cycle education.

Le CNISF is represented in the following organisations :

- The Commission des Titres d'Ingénieur
- The examining Jury for the State appointed Engineers (DPE)
- The Higher Council of Industrial Property

The CNISF possesses a "French Répertoire if Engineers" :

- the Ingénieurs Diplômés (ID) encompassing three categories of engineers
- the Ingénieurs reconnus scientifiques (IRS) (= Maîtrise, DESS, DEA, Doctorat)
- the Ingénieurs reconnus (IR) the professionals without an engineering diploma)

The Conference des Grandes Ecoles

60 Boulevard Saint Michel

F-75272 Paris Cedex 06

President : Christian Margaria

Tel : 00 33 (0) 1 43 26 25 57

Fax : 00 33 (0) 1 46 34 56 70

This society assembles the directors of 172 high-level technological, scientific and management schools, of which 135 are engineering schools. This assembly educates approximately 22.000 graduates annually.

In 1985, the society created a specialised programme of 1 year open to the graduates of Grandes Ecoles or university DEA graduates. These specialised studies lead to the label of "Mastère".

## **b) International**

The CNISF is the French national member of FMOI (world federation of engineering associations). Associated member of CLAIU since 2001 it becomes full member in 2005.