

Technical note about the level of the French “Diplôme d’ingénieur”

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Addressed to:

William J. Paver
Executive Director, Foreign Credential Service of America

Michael V. Reilly
Executive Director, American Association of Collegiate Registrars and Admissions
Officers- AACRAO

Robert A. Watkins
Assistant Director, Graduate and International Admission Center, University of Texas

Contact:

Commission des Titres d’Ingénieur
Teresa Sánchez Chaparro
teresa.sanchez@cti-commission.fr; teresa.tschapar@gmail.com
<http://www.cti-commission.fr/>
34 avenue Charles de Gaulle
F-92200 Neuilly sur Seine - France
Tél : + (33) (0)141 923 779

AACRAO and the EDGE data base currently consider the “diploma d’ingénieur” as being equivalent to an American bachelor’s degree. This conclusion is based upon 4 assumptions¹ :

1. The “diplôme d’ingénieur” is the first academic degree in the field of engineering in France.
2. The “diplôme d’ingénieur” has *just* a duration of 5 years after secondary school (“baccalauréat”).
3. The “diplôme d’ingénieur” is the first professional degree (the first degree which leads to the engineering profession) in France.
4. After finishing their engineering studies, some “ingénieurs diplômés” decide to go through a “mastère spécialisé” (post-master degree)

In this note, after a brief presentation of the “Diplôme d’ingénieur” and CTI (pages 2 and 3), we will provide some factual information regarding each of these assumptions in order to justify that the “diplôme d’ingénieur” is at a **master level** (pages 4 and 5). A list of evidences is provided at the bottom of this document (page 6) in order to support the different arguments provided.

¹ Information transmitted by Robert Watkins at the AACRAO-Campus France seminar “Bridging French and American Higher Education Systems”, Paris 6-7 December 2012

Brief presentation of CTI and the “diplôme d’ingénieur”

CTI (“Commission des Titres d’Ingénieur”) is a nonprofit organization created in 1934. It has been given by the French law the mission to evaluate and accredit the engineering programmes which deliver the « titre d’ingénieur diplômé”. A professional organization, such as a charter of engineers, does not exist in France.

CTI is a full member of the European organizations in charge of Quality Assurance in Higher Education, respectively ENQA (European Association for Quality Assurance), EQAR (European Quality assurance Register) and ECA (European Consortium for Accreditation).

CTI is also a member of ENAEE (European Network for Accreditation in Engineering Education) and is authorized to award the EUR-ACE label to engineering programmes at the master’s level.

The French “diplôme d’ingénieur” is a 5-year integrated programme. According to the French law, it is fully equivalent to a master and enables direct access to doctorate studies (see *evidence 1* at the bottom of this document).

This master level degree gives access in France to the professional title “ingénieur diplômé” (graduated engineer). This title is protected by law; only programmes accredited by CTI have the right to deliver this title to their graduates. However, the title “ingénieur diplômé” is not compulsory in order to practice the engineering profession in France. The term “ingénieur” is not protected. In fact, today only around 60% of engineers in practice in France are actually “ingénieurs diplômés”.

In order to be awarded the CTI accreditation and to be considered by law as a “diplôme d’ingénieur”, an engineering programme must fulfill a set of minimum requirements; namely:

- To have an extension of at least 10 semesters after secondary education and a total student workload of 300 European credits (ECTS).
- To provide a solid knowledge and understanding of fundamental sciences, with the objective to ensure the achieving of long-term analytic and synthesis abilities.
- To include a structured contact with the professional sector within the cursus; mainly in the form of internships in industry.
- To incorporate an international dimension (command of other languages, stages abroad, etc.).
- To incorporate a research and innovation dimension.
- To incorporate a human and social dimension in order to guarantee a certain social and cultural awareness of the graduates.
- To apply a structured and selective recruitment mechanism. Regarding this issue, two different models coexist: some engineering institutions recruit their students after two years of preparatory courses (“cours préparatoires”) and a highly selective competition; others recruit right after the ”baccalauréat” and put in place their own selective mechanisms.

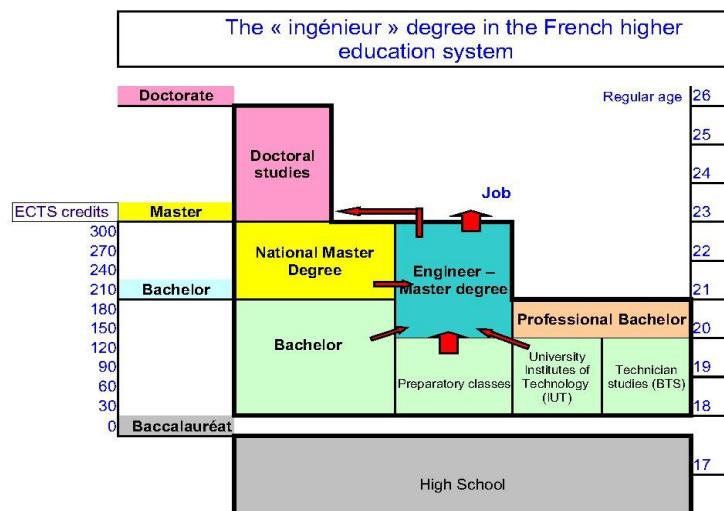
CTI's detailed accreditation criteria in French and in English are accessible through <http://extranet.cti-commission.fr/frontend.php>

The official list of accredited “diplômes d’ingénieur” is published every year by the Ministry of Higher Education and it is accessible through CTI’s webpage (http://www.cti-commission.fr/IMG/pdf/JO_liste_ecoles_2012-2.pdf). CTI has also enabled an internet-accessible research engine of accredited institutions and programmes in order to facilitate consultation (<http://extranet.cti-commission.fr/recherche>).

After the Bologna reform, French decided not to introduce the Bologna two-cycle division (bachelor after three years – 180 credits- and master- 120 credits).²

However, the discussion is still open. Some engineering institutions deliver their own bachelor degree after the first 3 or 4 academic years in order to facilitate international exchanges. In practice, an important number of engineering students are recruited after having completed engineering bachelors (“licences” et “licences professionnelles”) (see diagram below).

Leaving its integrated nature aside, the “diplôme d’ingénieur” is fully adapted to the European Higher Education Area, specifically, all relevant tools prescribed by the Bologna Reform are currently in use (ECTS, Diploma Supplement, introduction of semesters...).



² The fact that an important number of “diplômes d’ingénieur” are provided through two years of preparatory classes (“cycle préparatoire”) in a specific institution (“Lycée”), and three subsequent years in an engineering “Grand École”, poses considerable technical problems in order to make this structural division.

Assumptions on the “diplôme d’ingénieur” made by AACRAO and response from CTI

1. The “diplôme d’ingénieur” is the first academic degree in the field of engineering in France

Not true.

In France, there are academic degrees in the field of engineering at the bachelor’s level (“licence” ou “licence professionnelle”- 180 ECTS) which are offered by different universities (see *evidence 2* at the bottom of this document). These engineering “licences” are not accredited by CTI.

The graduates of these programmes do not have the right to use the title “Ingénieur diplômé”. This title is protected by law and restricted to the graduates who have gone through a CTI-accredited master level programme (“diplôme d’ingénieur”).

After completing their “licence”, graduates can access an accredited engineering institution in order to complete a second cycle in engineering.

2. The “diplôme d’ingénieur” has *just* a duration of 5 years after secondary school (“baccalauréat”)

This is correct, but we don’t see why this should be a reason not to consider the “diplôme d’ingénieur” as a master.

According to the French law, the “diplôme d’ingénieur” is fully equivalent to a master and enables direct access to doctorate studies (see *evidence 1*).

The “diplôme d’ingénieur” has indeed an academic workload of 300 ECTS credits distributed along 5 years of cursus (see *evidence 3*). According to the French qualification Framework, the master level is acquired after 300 ECTS (*evidence 4*).

3. The “diplôme d’ingénieur” is the first professional degree (the first degree which leads to the engineering profession) in France

Not true.

In France, there are other professional degrees at the bachelor level in the field of engineering (“licences professionnelles”; see *evidence 2*).

The title “ingénieur diplômé” (only accessible to master-level graduates from accredited programmes) is not compulsory in order to practice the engineering profession in France. The term “ingénieur” is not protected. In fact, only around 60% of engineers in practice in France are actually “ingénieurs diplômés”.

4. After finishing their engineering studies, some “ingénieurs diplômés” decide to go through a “mastère spécialisé”

This is true, but we don't see why this should lead to the conclusion that the “diplôme d'ingénieur” is not at the master level.

“Mastère spécialisé” (translated as post-master's degree) is a label (trademark) owned by the “Conférence des Grandes Ecoles” (CGE). CGE is an association of engineering institutions, management schools and higher education institutions offering other specializations (<http://www.cge.asso.fr/en/about-us/presentation>). The label “mastère spécialisé” was created in 1983 to respond to demand from French companies who wanted to recruit graduates with skills in highly specialized fields (*evidence 5*)

These post-master programs are not recognized by the ministry of education (they are not official programs). The competence scope of these programmes is narrow and highly specialized. They basically enable the student to obtain a second or more specialized competence after his/her “diplôme d'ingénieur”.

List of evidences

Evidence 1- Decree n°99-747, of 30th august 1999 (modified by the Decree n°2002-480 of 8th april 2002:

<http://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000000561918>

Evidence 2- Examples of engineering bachelor degree (“licence” ou “licence professionnelle”) offered by various French universities:

<http://www.formations.uhp-nancy.fr:8080/cocoon/ALED/PGMUHP-PROG7741>

http://www-galilee.univ-paris13.fr/fichiers/brochure_Licence_SPI.pdf

<http://www.u-pec.fr/pratiques/universite/presentation/licence-sciences-pour-l-ingenieur-294895.kjsp>

http://www.creufop.univ-montp2.fr/pdf_domaines/Licence_STPI.PDF

<http://iut.univ-lyon1.fr/-603359.kjsp>

<http://www.utt.fr/fr/formation/licences-professionnelles/meer.html>

http://www.upmc.fr/fr/formations/diplomes/sciences_et_technologies2/licences/licence_st_mention_mecanique.html

Evidence 3- Link to CTI’s accreditation criteria:

http://extranet.cti-commission.fr/frontend.php/fr/fond_documentaire/document/10/chapitre-element/490

Evidence 4- French qualification Framework:

<http://www.grossroads.eu/higher-education-in-europe/france-30/qualifications-framework-100>

Evidence 5- Information about the label “mastère specialize” (post-master degree) provided by CGE:

<http://www.cge.asso.fr/en/cge-labelled-programmes/ms>