

White Paper: Elite Education in France and the *Grandes Écoles*

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French higher education embraces essentially two sectors: the university sector and the domain of the *grandes écoles* (literally 'great schools' in English). The *grandes écoles*, both public and private, generally offer only professional education while the universities offer higher education in the arts, sciences, and some professional fields. The *grandes écoles*, with only a few exceptions (a handful dealing with civil service and administrative education or communications and media), largely provide advanced education in engineering and engineering sciences or in business and commerce. The oldest ones date back to the eighteenth century though most came into being after World War II. They have traditionally been the avenue for education and training of the political, administrative, military, and corporate elite in France.

Admission into the *grandes écoles* differs from that of the universities and is quite rigorous, which is part of the reason for their popularity among French students finishing upper secondary education. Following the *Baccalauréat*, the prospective student to a *grande école* of any type enrolls in *classes préparatoires aux grandes écoles* (preparation classes for the *grandes écoles*) often referred to simply as CPGEs. This two-year course of study most commonly takes place in a *lycée* (upper secondary school) but the curriculum is clearly post-secondary in nature (referred to by the French as 'post-Bac'). The general courses studied are designed to prepare the students for the extremely competitive entrance exam known as the *concours*. The curriculum differs depending on the type of *grande école* chosen for further study (engineering or business or other). Grading is quite severe as might be expected given the severe approach to assessment that pervades the entire French educational system. Upon successful completion of the CPGE and a sufficiently competitive result on the *concours*, students are admitted into their *grande école* of choice.

Grandes Écoles: Écoles d'Ingénieur (Engineering Schools)

For those entering an engineering *grande école* the next three years will be spent on engineering subjects that will ultimately result in the generic degree and title of *Diplôme d'Ingénieur* (Diploma of Engineer). This is the degree and title regardless of the actual discipline or subject (Civil, Mechanical, Electrical Engineering or even Computer Science). Altogether, there are five years of post-secondary (post-Bac) study. This has been the case since at least 1994. Furthermore, with the onset of the Bologna-compliant new degree structure in the universities (*Licence-Master-Doctor* or L-M-D sequence) which began in 2004, the *grandes écoles* have been affected in two important ways. When the Bologna Process was first promulgated in 1999, it was assumed that the

professional degrees in signatory countries would remain unaffected and adhere to the traditional structure. While the engineering *grandes écoles* did keep the titles (*Diplôme d'Ingénieur*) and the basic 2+3 configuration (2 years CPGE + 3 years *Dip d'Ing*) which differ from the university L-M-D and 3+2 structure, they did embrace the use of ECTS (European Credit Transfer System) and the degrees were legally equated to the university *Master* degree. Indeed, in addition to the title of *Diplôme d'Ingénieur*, *grandes écoles* may well add on the diplomas that these are *Grade de Master* (Level of Master). The total number of ECTS credits for the five-year (2+3) experience including the *classes préparatoires* is 300 ECTS or 150 US semester hours.

The *classes préparatoires aux grandes écoles* (known in France as CPGEs) take place in a *lycée* which is the upper secondary school in France. However, these are select *lycées*. So, on the same campus, one finds the upper secondary students studying toward the *Baccalauréat*, as well as those who have already passed the *Bac* and are now studying for the *concours* to get into the engineering (or business) *grande école* of their choice. The curriculum for the engineering CPGE consists of two years of study in mathematics, physics, chemistry, technology, engineering depending on the track chosen (Mathematics & Physics; Physics, Chemistry & Engineering; or Physics, Technology & Engineering). There will also be some time spent on Literature and Philosophy. The study load over two years will exceed 1800 hours (compared to 1300-1400 in a science program in a university). While the study is accumulating 120 ECTS credits, students are also preparing for the *concours*, the *grande école* entrance exam, success on which determines admission into a *grande école*, and particularly the *grande école* of choice.

Upon successful admission into the engineering *grande école*, the student then studies for three years (180 ECTS on top of the 120 already achieved with the CPGE). The syllabus will vary with the specific engineering track (civil, mechanical, electrical, etc.) but compulsory courses include Mechanical Manufacturing, Theory of Mechanisms, Solid Mechanics, Materials Resistance, Thermodynamics, Fluid Mechanics, Electronics, Logic, Signal Processing, General Automatic Control, Probability and Statistics, Numerical Analysis, Advanced Calculus, Computer Studies, and Culture & Communication. The completion of all three years results in the award of the degree *Diplome d'Ingenieur* and often the designation *Grade de Master*. Due to the elite nature of the *grandes écoles*, graduates seldom continue on to higher academic levels but immediately enter private or public employment. They are eligible to pursue a *Mastère Spécialisé* (one-year post *grande école* study), but, again, most immediately enter the corporate sector or public service.

When EDGE was first rolled out, EDGE France contained Credential Advice for the *Diplôme d'Ingénieur* that called it comparable to a US bachelor's degree. In 2012 AACRAO was approached by CampusFrance, the office within the French Foreign Ministry that promotes French higher education (comparable to EducationUSA in the US State Department) to participate in a workshop that would examine French engineering with the goal of potentially amending the EDGE Credential Advice for the *Diplôme*

d'Ingénieur to that of a US master's degree. AACRAO enlisted a group of eight experts on international education, including Mike Reilly who had recently become the new AACRAO Executive Director. The Workshop, entitled "Bridging French and American Higher Education Systems" convened on the campus of the *Institut d'Études Politiques de Paris* (commonly referred to as *Sciences Po*) in Paris. The two-day workshop included presentations by both the American delegation and the French group as well as school site visits. Significant information was provided by the French hosts outlining the details of engineering education, both CPGEs and *grandes écoles Diplôme* studies. At the conclusion, the US group then discussed the information and came to a consensus that the *Diplôme d'Ingénieur* was indeed comparable to a (short) US master's degree. The reasoning points were:

While the *Dip Ing* was a first degree, it is only technically one, given the preceding two years of CPGE (though those do not lead to a degree as such).

The *Dip Ing* is ALWAYS awarded after five years and 300 ECTS (in order to receive CTI/Commission des Titres d'Ingénieur/Commission on Engineering Titles accreditation this milestone MUST be met).

The degree is legally comparable in France to the *Master* of the L-M-D university degree sequence and the Bologna-compliant *Master* in France is considered comparable to a US master's degree in EDGE France.

It should be noted that during the meetings in Paris, French colleagues' disagreement was also expressed regarding the credential advice in EDGE regarding the *Licence*, the first three-year university degree, which is not given US bachelor's comparability. In addition, some concern over the EDGE conversion of French grades was indicated by French educators as well. The French grade on a 20-point scale where 10 is the lowest passing grade. Grades 1-9 are failing grades although grades of 8 and 9 are allowed to stand without repeat provided the overall grade for the year on all courses is 10 or better. This practice renders the 8 and 9 grade a de facto US grade of D which is the opinion stated in EDGE. French engineering colleagues preferred to assign a value of a US grade of C to the grades of 9 given the extreme severity of the grading in the engineering *grandes écoles*. They conceded that the EDGE interpretation of grades was correct for universities in France but not for the very rigorous engineering schools.

The group did not see a need to change the advice for the *Licence* which currently indicates three years of credit but not a US bachelor's though clear language and links to the Bologna entry in EDGE which discusses at length the acceptability of three-year Bologna-compliant degrees to US graduate programs should handle this problem. Finally, all stood firm on the grade scale conversions though perhaps some language pointing out to EDGE users the extreme severity of grading in the engineering *grandes écoles* might be in order.

Upon returning to the US, those members of the American Delegation involved with EDGE presented the group's findings to the AACRAO International Education Standards Council/IESC and that group voted unanimously to change the advice in EDGE France to reflect the new outcome for Credential#51, the *Diplôme d'Ingénieur*:

Credential Description

3-year postsecondary, 2nd cycle program in engineering

Credential Advice

The *Diplôme d'Ingénieur* represents the attainment of a level of education comparable to a master's degree in engineering in the United States.

Credential Author Notes

3-year postsecondary, 2nd cycle program in engineering, awarded by an engineering *grande école* accredited by the *Commission des Titres d'Ingénieur CTI* /Commission on Engineering Titles. The 3-year *Diplôme d'Ingénieur* concludes 5 years of post-baccalaureate study and 300 ECTS credits (150 semester hours). This degree enables the holder to practice as a professional engineer in France.

This was then communicated to various stakeholders in many forms (AACRAO Annual Meeting sessions, face-to-face meetings with USCIS adjudicators who rely heavily on EDGE, and at AACRAO Summer and Winter Institute Workshops). While the decision affected the advice in EDGE for the engineering *grandes écoles*, it did not extend to the business *grandes écoles*. That problem had to await future research.

Grandes Écoles: Écoles de Commerce et de Gestion (Business and Management Schools)

As a follow-up to the workshop on *grandes écoles* in engineering, AACRAO arranged a subsequent series of meetings with the educational authorities in France to explore *grandes écoles* in business. The visits took place in April of 2018. Present were Melanie Gottlieb, Deputy Director of AACRAO, along with a number of members of IESC, the International Education Standards Council. Representing the French were individuals from the *Ministère de l'Enseignement Supérieur, de la Recherche et de l'Innovation* (Ministry of Higher Education, Research and Innovation) (MESRI), the *Conférence des Présidents d'Université* (Conference of University Presidents) (CPU), and the *Conférence des Directeurs des Ecoles Françaises d'Ingénieurs* (Conference of Deans of French Schools of Engineering) (CDEFI). ESSEC, or *École Supérieure Sciences Économiques et Commerciales*, a leading *grande école* in France, also hosted a session on their campus. The collective discussions proved to be illuminating and productive.

While the term *grande école* is often associated with educating the elite and study that is particularly rigorous, it was pointed out that the term is unprotected. As such, the label does not represent the same level of quality among all *grandes écoles*. Most

business schools are private and are often created by local chambers of commerce to address the industry in their respective regions. Only the schools that meet a certain standard can award the title of *Master*.

Grandes Écoles may award a variety of qualifications, such as school-specific diplomas, which are often established to help generate revenue. While some may be well regarded for employment purposes, they are not national diplomas. As a result, they are not recognized at the national level by the *Ministère de l'Enseignement Supérieur, de la Recherche et de l'Innovation* (Ministry of Higher Education, Research and Innovation) (MESRI).

In order to be able to award the *Grade de Master*, one must first be evaluated by *Haut Conseil de l'Évaluation de la Recherche et De l'Enseignement Supérieur* or HCERES (High Council of Evaluation of Research and Higher Education). Only upon a successful review is recognition bestowed by MESRI.

There also exist three entities that represent the interests of higher education institutions in France. Also known as *conferences*, the following organizations represent universities, engineering schools, and *grandes écoles*, respectively:

- *Conférence des Présidents d'Université (CPU)*
- *Conférence des Directeurs des Ecoles Françaises d'Ingénieurs (CDEFI)*
- *Conférence des Grandes Écoles (CGE)*

It is important to note that only the first two, CPU and CDEFI, bear legal status and represent a mark of quality. The third, CGE for *grandes écoles*, is only an association and not a guaranteed indicator of quality. It is possible for a school to be a member of all three *conférences*.

Grade de Master

Prior to the Bologna Process, students earned a *Diplôme de Grande École* upon graduation from *grandes écoles* in business. However, the formal name of the degree is now *Grade de Master*. Like its counterpart in engineering, the *Diplôme d'Ingénieur*, it is always five years in length and 300 ECTS credits. This sequence is also referred to as *Baccalauréat + 5* or *Bac + 5*. The most common route is two years of classes *préparatoires aux grandes écoles* (CPGE), or *classes prépas* (preparatory classes), followed by three years at the *grande école*. However, there is also a less commonly taken route, whereby students complete a 5-year *Diplôme de Grande École / Grade de Master*, directly after the *Baccalauréat*, at the *grande école*.

Nevertheless, like the *classes prépas* (preparatory classes) for engineering schools, the CPs for business schools also have tracks with specific areas of focus. The two-year CP studies, leading to 120 ECTS credits, concentrate on economics and commerce; however, they fall into the scientific/mathematics, economic, or technological tracks. The post-CP period, which is three years in length and covers 180 ECTS credits, is internally comprised of the one-year pre-*Master* and the two-year *Master*.

Over the years, qualifications similar to the *Master*, whether in name and/or level, have been found in the French educational system. Below is a summary of such terms.

Maîtrise: A pre-Bologna qualification, awarded by universities upon completion of 1 year of study after the *Licence*. Bac + 4.

Magistère: A pre-Bologna qualification, awarded by universities as the counterpart to the *Diplôme de Grande École* or the *Diplôme d'Ingénieur*. Granted upon completion of 3 years of study, following the *Diplôme d'Études Universitaires Générales* (Diploma of General University Studies) (DEUG). Intended to attract bright students who would normally seek admission to *grandes écoles*. Bac + 5.

Mastère: A 12-month qualification awarded by *grandes écoles*, following the *Diplôme d'Ingénieur*, the *Diplôme de Grande École*, or the *Diplôme d'Études Approfondies* (Diploma of Advanced Studies) (DEA). Introduced in 1986, the *Mastère* may also be referred to as *MS Mastère Spécialisé* and also includes an internship. Bac + 6.

Mastaire: A term created in 1999 to represent the Bologna compliant second-cycle qualification or Bac + 5. *Qualifications such as the Diplôme de Grande École*, the *Diplôme d'Études Approfondies* (Diploma of Advanced Studies) (DEA) and the *Diplôme d'Études Supérieures Spécialisées* (Diploma of Specialized Studies) (DESS) were eventually retired. *The term Mastaire was replaced by Master in 2002.*

Master: Introduced in 2002 to refer to the Bologna compliant second-cycle qualification that typically follows the *Licence*. The first year of the two-year program is often referred to as M1 and the second year as M2. Also includes such Bac + 5 qualifications as the Master of Science and such Bac + 6 qualifications as the Master of Business Administration (MBA).

New Credential in EDGE France

Based on the work previously conducted on the engineering *grandes écoles*, and the recent research in-country with the *grandes écoles*, a proposed entry for the Credentials Screen in EDGE France was placed before the IESC. The group reviewed and approved the entry and the *Diplôme de Grande École/Grade de Master* was duly added as Credential #52 in EDGE France. That entry appears below:

Credential Description

Three-year postsecondary second cycle program in Business, awarded by a business *grande école*.

Credential Advice

The *Diplôme de Grande École/Grade de Master* represents an attainment of a level of education comparable to a master's degree in business in the United States.

Credential Author Notes

The *Diplôme de Grande École/Grade de Master* may sometimes appear (particularly if older) as *Diplôme de* [acronym of school such as ESC for *École Supérieure de Commerce*]. It represents a total of 5 years of postsecondary study and 300 ECTS credits.