Centro Studi
Consiglio Nazionale Ingegneri

Formations and professional legislations in the Mediterranean – Free mobility of engineers.
(In progress)

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FOREWORD AND SUMMARY

The creation of a "free exchange" takes on a particular significance for all Mediterranean countries as it may encourage the birth of new market openings, the development of new professional opportunities and also be an area for the sharing of specialized knowledge.

Most Mediterranean countries are, in fact, characterized by their great potential for development in the demand for infrastructures in the plant, energy, transport and telecommunications field, with a large request for high level engineering skills.

Moreover, all the basic conditions exist for standardizing the various regulations models for the profession, thus giving rise to the creation of a "free exchange" area for the 4 million circa engineers who operate in the 21 countries that surround the Mediterranean Sea. This, in brief, is the main result which emerged from the survey that the CNI Study Center carried out on the functioning of the profession in the Mediterranean countries of Europe, the Balkans, North Africa and the Middle East.

This survey is, to date, the first attempt at systematizing and schematizing knowledge about the main aspects regulating the engineering profession. It is also an initial step in constructing an area for the exchange and recognition of qualifications that may work alongside and integrate the one currently existing within the EU, following the Directive 36/2005

In fact, Directive 36/2005 governs the recognition of professional qualifications for those citizens of an EU Member State who intend to practice a regulated profession in a different member state to the one where they gained their qualification.

Directive 55/2013 has recently been introduced alongside Directive 36/2005, which provides for the possibility, for some specific categories of non-EU citizens to have their diplomas, certificates and other professional qualifications recognized.

Based on these considerations, the survey intended to investigate the possible, tangible "feasibility" of a "Mediterranean space" of professional mobility for "Mediterranean" engineers.

The survey was carried out in 21 countries Albania, Algeria, Croatia, Cyprus, Egypt, France, Greece, Israel, Italy, Lebanon, Libya, Malta, Montenegro, Morocco, Palestine, Portugal, Slovenia, Spain, Syria, Tunisia, Turkey.

Basic aspects that characterize the profession in the various countries were taken into examination. Initially, the training paths required to access the profession (required qualifications, duration and content) were asked, followed by the access and practice modes for the profession (any mandatory enrolment in Registers or other bodies, protection of the use of title, existence of reserved activities). The obligation of traineeships or other forms of work experiences and finally the existence of any continuing professional development programs were asked about, and also the mandatory stipulation of any professional liability insurance policies to protect third parties.

Initial data that can be highlighted concerns the many forms taken in organizing the engineering profession in the various countries considered. However, within a heavily heterogeneous framework, due to geographical, cultural and political-social factors, it is possible to identify some similar models in the various countries.

The profession is, in fact, strictly regulated in most of the countries examined. It is partially regulated in Albania and Montenegro and is completely free in Algeria, Morocco and France.

In the countries where the profession is regulated, the professional register system is the most common one (with the exception of Malta where there is a *Board*), which may be centralized or regional, with branches at sectoral level, or with a combined structure.

On the other hand, in “non-regulated” countries, it is not possible to identify a reference model: in France and Morocco, for example, the qualification is protected by accreditation of the courses by a dedicated body, while in Algeria no protection is provided. Montenegro has the most complex framework: to practice the professional independently and privately, only the qualification is required, while a license is necessary to take part in public contract tenders.

It can, therefore, be stated that in most states there is still a strong feeling for the need to preserve general interest in security and public safety, using mainly regulation models for the profession, in spite of the strong calls for deregulation from several sources. This is a phenomenon that, interestingly

enough, is cross-border in the various geographical and cultural contexts included in this research.

This orientation towards regulation is also confirmed by a certain number of initiatives that have been implemented, or will be, in the countries where the profession is freely practiced. For example, there is a widespread call in Morocco, Algeria and Albania for the adoption of the professional register model, which comes from several associations which have been created to protect the profession.

Another data that emerges from the research is the number of training paths, which while different according to the various social-cultural contexts, also present common aspects in terms of duration, content and areas of specialization.

Also, the training courses available in engineering appear to be increasing, especially in those countries where there is a strong demand for infrastructures and where there is a widespread perception that technological training is vital for development of the economic system and the creation of employment.

Generally speaking, it can be stated that in order to access the engineering profession, it is necessary in most countries to have completed 5 years of study after secondary education. In other countries, 4 years may be sufficient, and where the figure of “technical” engineer exists, only three years are required, with the possibility of extending the duration of the study course.

The training paths which emerged from the survey may comprise a single study cycle of 5 years (Albania, Algeria, Cyprus, Greece, Lebanon, Morocco, Tunisia), with the possible inclusion of a preparatory two-year cycle or a single four-year cycle (Malta, Syria, Turkey). Other states, on the other hand, particularly the ones that have adhered to the “Bologna Process” and that have provided for technical, intermediate figures, have study cycles with two levels: 3+2 (Croatia, Italy, Portugal, Slovenia).

One case apart is France, where there are several engineering qualifications, of varying duration, between 2 and 5 years available, and where the accreditation institute for the courses is a government body.

The accreditation institute is also found in other countries involved in the survey. It takes on a different character and functions, however, depending on the profession’s regulation model used. In Portugal, for example,

accreditation is the task of the Professional Order and is dependent on enrolment in the Register, while in Greece it is by the Ministry of Education, in Malta by the Board, and in Morocco and Tunisia by the State.

Basically, in spite of the differences found and aimed at responding to the different needs in each reference context, it seems that the various systems can co-exist with each other. It must be stated that although the role of technical training is favored in some countries, in others there tends to be the trend of training a more traditional type of engineer, with theoretical, not "hyper-specialized" preparation, but which still allow for the various training paths to be harmonized if suitable adaptations are made.

Another important aspect taken into consideration concerns traineeships required to practice the profession. This further phase of training is provided for in less than half the states considered by the survey and is necessary for the issuing of the license or enrolment in the Order. Traineeships generally last from one (Cyprus) to a maximum of two years (Croatia, Malta, Portugal[1]) and foresees longer durations in some particular cases (Slovenia).

With regard to aspects closely linked with practicing the profession, both the stipulation of a professional liability insurance policy and the requirement of continuing professional development were taken into consideration.

The obligation of a professional liability policy is only in force in 3 countries (Italy, Malta and Syria) out of the 21 taken into consideration. The particular case of Portugal must be highlighted, where the Order provides insurance cover for its own members.

In the same way, the obligation of fulfilling continuing professional development requirements concerns only a few countries, including Italy and Croatia. However, due to the importance thereof, the presence of several initiatives in many states (Albania, Cyprus, Slovenia and others) to introduce this obligation must be pointed out.

Also, in almost all the countries examined, although not mandatory, professional development courses are often organized by the Engineering

[1] It is mandatory only for those subjects with a degree that is not accredited by the Order.

Orders or Associations. In fact, continuing professional development marks the overcoming of the division between the training period while at university and the subsequent one.

Lastly, internationalization of the engineering profession is a complex process on various levels: exchange of students, recognition of professional qualifications that authorize the subject to practice the profession in other countries and use of continuing professional development on an international scale.

All these tools are surely aimed at favoring the mobility of engineers within the Mediterranean basin, but are also aimed at achieving a more ambitious target: that of creating the figure of a “Mediterranean” engineer who is not limited to national borders in his realm of activity.

Comparative Table of organizational models for the engineering profession in Mediterranean countries

Country	Regulated profession	Type of regulation	Training for Access to the Profession	Accreditation of qualifications	Professional qualification examination	Traineeship	Mandatory continuing professional development	Professional Liability Policy	Total number of engineering graduates
Albania	Partially regulated	Authorizing system	5 years	No	No	No	No	No	12.000
Algeria	No	Free	5 years (2 years integrated preparatory cycle and 3 years specialization)	No	No	No	No	No	320.000
Croatia	Yes	Professional register	(3+2) years based on Bologna model	No	Yes	Yes, duration of 2 years	Yes	No	7,000
Cyprus	Yes	Professional register	5 years	Yes	No	Yes	No	No	6.000
Egypt	Yes	Professional register	8 Degree courses in engineering have a duration of 2 to 5 years (2, 4, 5).	No	Yes	No	No	No	500.000
France	No	Free	Degree courses in engineering have a duration of 2 to 5 years (2, 3, 5).	Yes	No	No	No	No	778.000
Greece	Yes	Professional register	5 years	Yes	Yes	No	No	No	60.000**
Italy	Yes	Professional register	(3+2) years based on Bologna model	No	Yes	No	Yes	Yes	615.000
Lebanon	Yes	Professional register	5 years (2 years integrated preparatory cycle and 3 years specialization)	Yes	No	No	No	No	50.000

Country	Regulated profession	Type of regulation	Training for Access to the Profession	Accreditation of qualifications	Professional qualification examination	Traineeship	Mandatory continuing professional development	Professional Liability Policy	Total number of engineering graduates
Libya			5 years						
Malta	Yes	Professional register	4 years	Yes	Only for civil engineers and architects	Yes, minimum duration of 2 years, maximum of 3	No	Yes	2.000
Montenegro	Partially regulated	Authorizing system	Degree courses in engineering have a duration of 4 or 5 years	No	Yes, but only for the issuing of the license for practicing in the public contracts tender sector	No	No	No	3.000
Morocco	No	Free	5 years (2 years integrated preparatory cycle and 3 years specialization)	Yes	No	No	No	No	300.000
Palestine	Yes	Professional register	5 years	Yes	No	No	No	No	
Portugal	Yes	Professional register	(3+2) years based on Bologna model	Yes	Yes, only for graduates of non-accredited degree courses	Yes	No	No	65.000

Country	Regulated profession	Type of regulation	Training for Access to the Profession	Accreditation of qualifications	Professional qualification examination	Traineeship	Mandatory continuing professional development	Professional Liability Policy	Total number of engineering graduates
Slovenia	Yes	Professional register	Training courses in engineering have a duration of 3 to 5 years (3, 4, 5).	No	Yes	Yes, duration depends on the qualification already held	No	No	5.500
Spain	Yes	Professional register	Degree courses in engineering have a duration of 3, 4 or 5 years	No	No	No	No	No	550.000
Syria	Yes	Professional register	4 years	No	No	Yes, duration of 3 years	Yes	Yes	120.000
Tunisia	Yes	Professional register	5 years (2 years integrated preparatory cycle and 3 years specialization)	Yes	No	No	No		80.000
Turkey	Yes	Professional register	4 years	No	No	No	No	No	423,000*

* the data refers only to those enrolled in the Register.

**the data refers only to engineers enrolled in the Chamber

Source, CNI Study Center survey from various sources, 2014

1. EUROPEAN DIRECTIVES REGARDING RECOGNITION OF PROFESSIONAL QUALIFICATIONS AND THEIR APPLICABILITY TO CITIZENS OF OTHER NON-EU COUNTRIES

As we know, the European Parliament and Council Directive 2005/36/EC dated 7 September 2006, regarding recognition of professional qualifications has simplified and consolidated the previous reciprocal recognition system that was based on 15 different directives.

Said system is mainly aimed at professionals with citizenship from one of the Member States of the European Community (now Union) providing for a certain number of professionals, automatic recognition of respective qualifications to access and practice the profession, based on the possession of minimum harmonized training requisites and, generally speaking, the definition of a common system for the recognition of training qualifications that allow access to individual professions, in addition to the automatic recognition of professional experience gained in the various areas of training.

Directive 2005/36/CE has also set up a new system of free provision of services, based on the possibility, for each European citizen who is legally established in a member state, to provide his services temporarily and occasionally in another member state, using his own original professional qualification; without the necessity for said qualification to be recognized. This is on the condition that the professional providing the service proves that he has already two years of professional experience, if the profession to which he belongs is not regulated by the system in the host country. This may require that the professional, before being authorized to provide services in his country for the first time, submits a declaration (renewable each year) containing all the necessary information about the insurance cover and/or possession of other relevant documentation (such as proof of nationality, legal domicile and professional qualifications), and the mandatory enrolment *pro forma* in the professional competent body. Said

obligation is automatically fulfilled, when the competent authorities send the interested parties files to the professional body on receiving the preliminary declaration. However, for those professions that have security and public health implications and that do not benefit from automatic recognition, the host member state can carry out a preliminary check on the subject's professional qualifications in observance of the principle of proportionality.

The distinction between «free provision of services» and «freedom of establishment» operated by the Directive 36/2005/CE is based on the criteria indicated by the jurisprudence of the Court of Justice, i.e. the *duration*, the *frequency*, the *periodic nature* and the *continuity* of the service.

The amendments recently introduced by the directive 55/2013/EU are connected to the directives. This has above all provided for the introduction of the *professional European card* (art. 4 bis), aimed at allowing the applicant professional the possibility of using a simple recognition. The card is an electronic certificate that states that the requisites and conditions necessary both for practicing professional business in any EU country on a temporary and occasional basis, and for exercising the right of establishment in the host country, have been met.

The card is issued by the competent authority in the professional's own member state within one month of declaring that all documents have been received, while the host member state, in turn, has one month to issue the professional card (said term is, however, subject to the silence/consent rule, except for justified extension for no more than four weeks). Overall, therefore, the entire procedure for issue of a professional card can be no longer than 95 days.

Not all the regulated professions to which directive 36 applies (as amended by directive 55) can already use the simplified European professional card system; for some professions - including that of engineer - the commission started consultations last year with the competent category bodies and public administrations in the recipient member states, to allow experimentation.

The directive identifies three conditions that must be satisfied in order to apply the system: the existence of significant intra-European mobility,

which is both current and potential an interest expressed by the professional category; the uniform regulation of academic and education qualifications for accessing and practicing the profession in a significant number of member states.

Further matters introduced by Directive 55 concern the extension of the regulations regarding recognition of the professions to traineeships, which will allow those subjects carrying out a traineeship in order to access a given profession regulated in a different member state to the one where they obtained their qualification to request recognition of said traineeship in their own country. This provision will increase the circulation of graduates and will contribute to the standardization of the regulations regarding traineeships introduced by the national bodies for each profession.

The goal of *continuing professional development* is expressly included as an obligation for the state members. The latter, according to the new article 22, paragraph one, letter *b)*, are called upon to guarantee, «*each one according to their own specific procedures* (…)*, favoring continuous professional development, the possibility to update their respective knowledge, abilities and skills and keep abreast of professional developments to the extent necessary to maintain safe and effective practice progress made in their given profession, for those professionals whose qualifications come under application of chapter II of the herein section* ».

Previously, directive 36 only acknowledged the existence of this possibility. By 18 January 2016 (deadline for acknowledgement of directive 55 in national legislation), therefore, each State must communicate the measures adopted to guarantee fulfillment of the obligation of continuing professional development.

Directive 55 attempts to solve the problems of lack of correspondence between the actual realm of competence of the same (or similar) professions currently in force in the various member states (also) by guaranteeing a *part access* (*rectius*: part recognition) to practicing the profession in a different member state to the one of origin. As we know, the directive 2005/36/EC is applied to professionals who intend to practice the same profession in another member state. However, there

may be cases where a set of skills in the host member state (that the member state of origin includes in the skills of that certain profession) are included in a profession that, on the other hand, are part of a profession that has a much wider range of activities. If this difference is such as to require the professional intending to carry out his activity in said host member state to complete a full training and education program in order to compensate for these gaps, and if the professional himself makes the request, the host member state is obliged, according to article 4-*septies*, to guarantee part access, which can, however, be refused if said possibility interferes with the pursuit of vital objectives and reasons of general interest, as set out by the European Union Court of Justice in rulings on articles 49 and 56 of the Treaty on the Functioning of the European Union (TFEU).

Directive 55 also foresees the establishment of an alert mechanism (art. 56-*bis*), according to which each member state communicates the decisions taken by the national judicial authorities aimed at banning or limiting the practicing of a profession by a given professional, also only temporarily, in his own country to all the other member states. Lastly, Article 59, paragraph 3 is important, which requires member states to evaluate the proportionality of national legislation on limits to accessing professions.

From the point of view of subjective application, directive 36 and subsequent amendments, in addition to *European citizens* (i.e. those subjects with citizenship in one of the member states of the European Union) and to *family members of citizens of EU citizens who are originally from other countries*, and who enjoy the same treatment, in compliance with the European Parliament and Council Directive 2004/38/EC dated 29 April 2004, regarding the rights of the EU citizen and family members to circulate and reside freely within the area of the member states, is also aimed at *citizens of other non-EU* countries, who can take advantage of the principle of equality of treatment with European citizens with regard to the recognition of diplomas, certificates and other professional qualifications, according to their respective national procedures, on the basis of specific legal acts issued by the Union.

These are specific categories of subjects, who, in particular:

- are *long-term residents*, pursuant to Directive 2011/51/EU, which amends the previous European Council Directive 2003/109/EC to extend the realm of application to beneficiaries of international protection;
- are *refugees*, as set out in the European Parliament and Council Directive 2011/95/EU dated 13 December 2011 containing regulations on the attribution of the title of beneficiary of international protection, to citizens of third party countries or stateless subjects, to a uniform status for refugees or for people with the title of beneficiary of subsidiary protection, and also on the content of the protection received;
- are *holders of blue cards*, as set out in the European Council Directive nr. 2009/50/EC dated 25 May 2009, on the entry and residency conditions for citizens of other countries who intend to carry out highly qualified jobs, and
- are *scientific researchers*, as set out in the European Council Directive 2005/71/EC dated 12 October 2005 concerning the specifically introduced procedure for the admission of non-EU citizens for the purpose of scientific research.

It must be pointed out that the directives previously in force, which were merged into Directive 2005/36/EC, did not present any obstacle to the fact that any member State could apply best offers to citizens coming from or who qualified in other countries. The Italian Government, for example, applied and still applies the provisions contained in Chapter III (Freedom of Establishment) of the Legislative Decree nr. 206 dated 9th November 2007, as implementation of the Directive 36/2005/EC, not only to citizens of non-EU countries under the special conditions described above, but to all non-EU country citizens who have a qualification enabling them to practice the profession which was awarded in a country that does not belong to the European Union, whether they reside or do not reside on Italian soil.

Please see the Presidential Decree no. 394, dated 31 August 1999 as amended (Regulations containing implementation rules of the consolidated text of provisions concerning immigration law and legislation concerning the foreigner's condition).

Article 49 states that overseas citizens, whether residing or not in Italy who intend to enrol in the "*registers, associations and special lists established at the competent administrations* "can request recognition of their own professional qualification for the purpose of practicing the profession in Italy, as independent workers or employees of corresponding professions.

The procedure of applied recognition is the one set out in Chapter III of the Legislative Decree nr. 206 dated 9 November 2007. The only difference lies in the choice of the compensatory measure that a provision may be made for (traineeship or aptitude/practical test). In the case of non-EU citizens, this choice lies with the competent administration and not with the applicant, as instead is the case for EU citizens.

In the event of compensatory measure, it must be noted, if the applicant is not already in Italy, he can obtain a student's entry visa in any case, valid for the period necessary for carrying out the above measure.

2. ALBANIA

State	Albania
Name of organization:	Albanian Association of Consulting Engineers
Website:	www.aace.al
Contacts:	Rr. L. Gurakuqi P. Albsig, I/9 Tirana Albania Tel/Fax +355 422 25650 Tel. +355 662032608 info@aace.al
Chairman:	Eng. Faruk Kaba

TRAINING FOR ACCESS TO THE PROFESSION

In Albania the university system has acknowledged the guidelines for reform process conducted by the European Union on the matter of university education known as the "Bologna Process". Studies last for three, four or five years and a number of ECTS European Credit Transfer System credits are attributed to each of them, with the aim of integrating the Albanian university system with the systems in force in the states belonging to the European Union.

Engineering degree qualifications are obtained on completion of a five-year training program, and are awarded by universities and polytechnics.

The courses also provide for the following sectors of specialization: civil and architecture, mechanical, electronic, transport, mining, geotechnical, industrial, chemical, IT and environmental.

All those who have obtained their high school leaving certificate (*Deftese Pjekurie*) on completion of a total of 12 years of schooling (4 years of primary school, 5 years of junior high school and 3 years of high school) can access university courses.

ACCESS TO THE PROFESSION

In Albania the profession is not regulated on the basis of any professional register system. However, in order to practice the profession, it is necessary to hold a valid license that is issued by the *Ministry of Public Works* based on verification of the applicants' *curricula studiorum*.

All subjects, without any nationality restrictions, who hold an engineering degree qualification on completing a five-year study period, awarded by either an Albanian or overseas university, can apply for the issue of a license.

After said verification and once each applicant's specialization area has been identified, the sector in which each subject can practice his own professional activity is indicated on the license.

It must be also emphasized that the establishment of an Order of Engineers has currently been proposed, in compliance with the law already in force on regulated professions.

Several associations have, in fact, requested the adoption of a professional register model, with the intention of guaranteeing greater protection of those belonging to the category and in view of growing the status and the professionalism of Albanian engineers.

On the basis of some preliminary calculations, it can be estimated that there are about 12 thousand engineers in all specialization sectors in the country.

TRAINEESHIPS

Albanian law has not established any mandatory traineeship periods for the purpose of accessing the engineering profession. In spite of this fact, the university study courses provide for period of in the field learning in the most technical subjects.

CONTINUING EDUCATION

No continuing professional development for engineers is provided for in the Albanian system. In spite of this, some professional category associations organize conferences and seminars for continuing development of their own members and current initiatives for the establishment of an Order of Engineers aims to adapt the Albanian system to international standards on continuing professional development.

PROFESSIONAL LIABILITY POLICY

In Albania, engineers are not obliged to take out a civil liability policy that protects third parties whilst carrying out their own professional activity.

3. ALGERIA

State:	Algeria
Name of organization:	Union Nationale des scientifiques et technologues algériens
Secretary General:	Sen. Abdelkader Reguig
Name of organization:	Union Nationale des Agronomes
Chairman:	Eng. Zane Yahia

TRAINING FOR ACCESS TO THE PROFESSION

The training path typical of Algerian higher education that allows access to the engineering profession is based on the model that can be summarized as the 2-3 system.

To gain access to university engineering courses, it is therefore necessary for students with high school leaving certificates to attend a preparatory cycle (lasting two years), followed by a three-year "specialization" course in engineering subjects, that is held at universities or in Higher Technical Institutes (lasting three years) . Students must pass an admission test in order to take part in the two-year preparatory course.

Engineering diplomas are issued by universities at the end of the degree courses organized in the science faculties and the courses at the "national technical institutes", set up in the 1960s and 70s under the auspices of the *Ministry for Industry and Energy.*

The training courses held at the technical institutes are characterized by a period of direct in-field learning (work experience) on industrial sites and in factories. For example, the *Ecole nationale polytechnique d'Alger* foresees three work experience periods to be completed in the final three years of studies.

Diplomas in engineering are distinguished by the large number of specializations that range from civil engineering, to communications and

information technology, but which also pay special attention to applied engineering science in the agronomy and agriculture sectors.

ACCESS TO THE PROFESSION

In Algeria, the practice of the engineering profession is entirely free and for this reason, the profession is not protected and there are no official institutes or registers in the country.

A degree is therefore a necessary and sufficient condition for practicing the profession.

However, in the wake of the need to ensure greater protection to the engineers' category, it can be stated that as there are about 320 thousand engineers in total, several category organizations have been set up that make continuous requests to the country's government for the establishment of an Order of Engineers.

TRAINEESHIPS

Due to the non-regulation of the profession, there is no professional traineeship system.

CONTINUING EDUCATION

Again, due to the lack of official institutes or registers for the profession, there are no continuous professional development courses organized. Currently, there are no significant proposals for the adoption of professional continuous development programs

PROFESSIONAL LIABILITY POLICY

For the same reasons as above, there is no mandatory stipulation of any kind of professional insurance policy.

4. CYPRUS

State	Cyprus
Name of organization:	Technical Chamber of Cyprus
Website:	www.etek.org.cy
Contacts:	8, Kerverou Street 1016 Nicosia, Cyprus Tel: +357 22877644
Chairman:	Eng. Stelios Achniotis

TRAINING FOR ACCESS TO THE PROFESSION

In Cyprus, the training path required to become an engineer is based on the university courses provided by public and private institutes and organized according to the *ECTS (European Credit Transfer System),* and foresees a basic three-year study cycle (Bachelor) and a two-year specialization course (Masters, PhD).

The engineering diploma is awarded at the end of five years of university study, with the possibility of taking up different specialization areas to study:

- Civil engineering
- Electronic engineering
- Mechanical engineering
- Information technology engineering

Anyone with a high school leaving certificate, obtained after 12 years in total of schooling can access the university courses held by the

engineering faculties. Generally speaking, as places available are limited, the engineering courses require an admission test[2].

Practicing the profession:

The engineering profession in Cyprus is regulated by Law nr. 224 from 1990, which set up the *Technical Chamber of Cyprus* and the professional title of Engineer, protected by law, are attributed only to those enrolled in the professional Register.

To practice the profession, it is necessary to obtain a license from the Chamber, based on the following requisites:

- Having a degree in engineering science, or an equivalent qualification that is accredited by the Technical Chamber.
- Holding Cypriot nationality or being married to a Cypriot citizen at the time of submitting the application for the license to the Chamber and residing in Cyrus, or being a citizen of a member state of the EU.

Some of the Chamber's main activities, in addition to issuing licenses to practice the profession are the keeping of registers of engineers, promoting research in the engineering sector, exercising the power of representation of engineers, and carrying out disciplinary functions.

The Technical Chamber also has the important task of accrediting the degree qualifications awarded by universities.

It can be estimated that in the country, there are currently about 4,000 engineers practicing the profession. There are a number of reserved activities for engineers enrolled in the Registers.

TRAINEESHIPS

A period of one year of apprenticeship following the awarding of an engineering degree is necessary for civil engineers only.

[2] On page 95 of the publication The Civil Engineering Profession in Europe – 2005, at the following website address http://www.ecceengineers.eu/papers/files/ECCE_Book_011005-komplett.pdf it can be read that there were 25 places available for the first year of engineering course in Cyprus in 2005.

CONTINUING EDUCATION

Members of the Technical Chamber do not have any continuous professional development obligations. The Cypriot Parliament is currently discussing the proposal, made by the Technical Chamber, to set up continuous professional development (CPD) programs.

PROFESSIONAL LIABILITY POLICY

There is no obligation to stipulate insurance cover for practicing the profession.

5. CROATIA

State	Croatia
Name of organization:	Croatian Chambers of Civil Engineers
Website:	www.hkig.hr
Contacts:	Ulica grada Vukovara 271 – Zagreb Croatia Tel: +385 1 5508 447 Fax: +385 1 5508 448
Chairman:	Eng. Zvonimir Sever

TRAINING FOR ACCESS TO THE PROFESSION

In Croatia, the university training path that allows access to the engineering profession has been organized on the 3+2 system ("Bologna" model) since 2003, which includes two education cycles, of three and two years respectively.

All those who have a high school leaving certificate, obtained after a total of 12 years of schooling (8 years of primary education and 4 years of secondary education) can attend the university courses, after passing an entrance test organized by each university.

The universities award the following qualifications, first and second level, based on the 3+2 system:

- Bachelor (*prvostupnik*)
- Master (*magistar*).

The first level degree, obtained after acquiring 180 ECTS credits, aims to provide the student with basic engineering knowledge (e.g. mechanics, resistance of materials and structural analysis in the case of civil engineering).

The second level degree, obtained after acquiring 120 ECTS credits, aims to provide the student with an advanced level of training in one of the following areas that, for a civil engineer are: geotechnics, construction

materials, hydraulic engineering, structural engineering, works supervision, transportation engineering, structure theory and modeling.

ACCESS TO THE PROFESSION

In Croatia, the engineering profession is regulated by the laws contained in the Official Gazette 124/09 and 45/11, and the professional title of Approved Engineer is reserved by law to the engineers enrolled in the Register.

To access the engineering profession, it is therefore necessary:

- to pass a professional examination;
- mandatory enrolment in the Croatian Chamber of Engineers in any given area of specialization.

The Croatian Chamber of Engineers is, in fact, arranged into 5 different specialized sections:

- The Croatian Chamber of Architects (with about 2,600 members);
- The Croatian Chamber of Civil Engineers (3,100 members);
- The Croatian Chamber of Electro-technical Engineers (1,700 members);
- The Croatian Chamber of Geodetic Engineers (600 members);
- The Croatian Chamber of Mechanical Engineers (125 members);

It is estimated, according to Feani, that there are about 35,000 engineers in the country.

Each section has its own administrative autonomy.

The law reserves the exclusive right to practice different activities, depending on the specialization awarded, to the engineers enrolled in the Chamber. For example, the activities regarding the civil engineering sector are contained in article 103 of the *Act on Architectural and Engineering Works and Activities in Physical Planning and Building* Law published in the Official Gazette nr.152/08 and nr. 49/11.

TRAINEESHIPS

A period of traineeship lasting two years is necessary for enrolling in the Chamber.

CONTINUING EDUCATION

Members of the Chamber of Civil Engineers must attend continuing professional development courses. It is necessary to achieve 100 training credits every 5 years of membership.

PROFESSIONAL LIABILITY POLICY

There is no mandatory requirement to possess any liability policy in order to practice the profession.

6. EGYPT

State	Egitto
Name of organization:	Egyptian Syndicate of Engineers
Website:	www.eea.org.eg
Contacts:	30, Ramsis Street Cairo (Egypt) Phone: +202 2 57 47479/80/81/82 Fax: +202 2 57 48 634
Chairman:	Eng. Tarek Al-Nabarawi

TRAINING FOR ACCESS TO THE PROFESSION

In Egypt, the training path to access the engineering profession was, starting in 1816, the first structured professional "high education" program.

All engineering training that is collected under the wording HEE (Higher Engineering Education), is provided via several training institutions (67 public institutions and 75 private institutes) that are divided between:

1. The engineering faculties where the title of Engineer is awarded at the end of the five-year degree course (named Bachelor);
2. The computer science faculties where the title of Programmer is awarded at the end of a four-year degree course (named Bachelor);
3. The Industrial Colleges where the title of Co-Engineer is awarded at the end of a four-year degree course (named Bachelor).
4. Technical Colleges and Technical Institutes that are different in the first three years, for a more technical type of training and in which at the end of the two-year degree course (named Diploma) the title of Technician is awarded.

Study courses are organized on the basis of training credits and are divided into a preparatory year and a three-year or four-year specialized course (1+3) or (1+4).

The University Courses in Engineering are accessed after obtaining a high school leaving certificate after a total of 12 years of schooling (6 years of primary school, 3 years of junior high school and 3 years of senior high school).

To be admitted to the faculty of engineering, students must pass a national exam that is held each year and that is managed by the Ministry of Education (Moe)[3].

According to the more recent statistics, those with especially high marks in the last year of high school manage to gain access to the faculty of engineering. This is because working in the engineering sector in the country has a high social consideration. The faculty of engineering, together with the faculty of medicine, dentistry and pharmacy studies, are called “top colleges”

ACCESS TO THE PROFESSION

The engineering profession is regulated in Egypt and the professional title is awarded only to those enrolled in the Trade Union of Engineers in the corresponding sector to the specialization obtained by the professional.

The trade union is in fact, divided into several sectors: architecture, civil engineering, mechanical engineering and agronomy.

To enrol in the trade union, it is necessary to pass a professional qualification exam that is held at the university where the engineer has obtained his degree.

The university also deals directly with enrolling the engineer in the trade union, sending them the exam results and academic qualifications.

Further requisites for practicing the profession are: holding Egyptian nationality; a degree in engineering from an Egyptian university or from

[3] Strategic Plan for higher Engineering Education in Egypt

another university. In this case, the equivalent value of the degree must be approved by the trade union.

Foreign engineers can also practice the profession, after their ability has been acknowledged by the trade union.

In Egypt there are about 500,000 active engineers, especially in the field of water works, large hydraulic infrastructures, the petroleum industry and the mechanical industry.

It must be underlined that the trade union's role goes beyond the actual order and also enters the social security and national insurance field, to the advantage of its enrolled members.

TRAINEESHIPS

No professional traineeship or apprenticeship is currently foreseen for practicing as a professional engineer in Egypt. It is in fact possible to take the professional qualification exam immediately.

CONTINUING EDUCATION

In Egypt there is no continuing professional development system for members of the trade union which does, however, organize and provide several training courses.

PROFESSIONAL LIABILITY POLICY

Members are not obliged to take out a civil liability policy that protects third parties whilst carrying out their own professional activity.

7. FRANCE

State	France
Name of organization:	Ingénieurs et Scientifiques de France
Website:	www.iesf.fr
Contacts:	7 Rue Lamennais – 75008 Paris France Tel: +33 (0)1 44 13 66 88 Fax: +33 (0)1 42 89 82 50
Chairman	Eng. M. Julien Roitman

TRAINING FOR ACCESS TO THE PROFESSION

The training offer in France for engineering studies is based on several types of courses which are very different to each other.

They can be distinguished as follows:

A) Two-year diplomas

1) BTS (*Brevet de technicians Superieur)* is the traditional technical engineering diploma that is obtained at the end of technical high school education;
2) DUT (*Diplôme Universitaire de technologie*) that is awarded by universities at the end of a course that corresponds to 150 ECTS credits.

B) Three-year diplomas

1) DNTS (*Diplôme National de Technologie Spécialise*) that is awarded by universities to those already holding a BTS or DUT diploma, at the end of one further year of study.

C) Five-year diplomas

1) *Ingénieur Diplômé*, that is awarded on completion of a five-year study course at the *Grandes Ecoles* or universities.

Access to the Grandes Ecoles takes place on the basis of an extremely tough entrance test that can be taken at the end of secondary school studies or after attending the preparatory classes at the Grandes Ecoles (CPGE). In this latter case, the student is admitted to the third year.

It is possible to access universities, on the other hand, via entrance tests for the first year, and in some engineering courses direct access to the third year is also possible for subjects who already hold the two-year BTS and DUT diplomas.

The training provided during the five-year courses is characterized by a high level of theoretical information in subjects concerning the subjects of mathematical analysis and physics. Since the 1990s, however, a training model named NFI *(Nouvelle Formation d'Ingénieurs)* has been adopted, which sets itself the aim of integrating theoretical preparation with practical training and learning in the field.

Accreditation of the engineering degree courses has a certain amount of importance in the French education system. In fact, in France, since 1934, only schools that are accredited by the Commission des Titres d'Ingénieur (CIT) are authorized to award the *titre d'ingenieur diplome*. The 1934 law concerns the conditions for awarding and using the title of engineer. This law was requested for years by the engineers who qualified in the most prestigious schools who, in the context of the economic crises following the First World War, feared that the proliferation of the amount of schools awarding engineering diplomas would harm the profession.

In order to be accredited by the CTI, an engineering degree course must satisfy a minimum set of requisites:

- duration of at least 10 semesters for a total of 300 European credits (ECTS);
- it must provide a solid knowledge that allows understanding of the fundamental sciences, with the aim of ensuring that analytical abilities and systematic summary capacities are learned;
- the presence of structured connections with the professional world and companies, mainly through the possibility of traineeships during studies and after being awarded the degree.

ACCESS TO THE PROFESSION

In France, the engineering profession is not regulated and as no particular requisites are required, the profession can be freely practiced. However, for legal protection, it is the *titre d'ingenieur diplome* that can only be awarded by the schools accredited by the CTI and that guarantees greater prestige and visibility within the *engineering* market.

TRAINEESHIPS

In France, due to the non-regulation of the profession, there is no professional traineeship system. However, the five-year degree courses must also provide for practical training paths in order to be accredited by the CTI.

CONTINUING EDUCATION

Again, due to the non-regulation of the profession, there is no continuing professional development program available.

The French law therefore provides for the fact that companies allocate a 2% share of expenditure for remuneration of their own employees to continuing development programs and technical training for their own staff.

PROFESSIONAL LIABILITY POLICY

The law does not foresee any mandatory stipulation of professional liability insurance for practicing the profession.

France has a large number of engineers and technicians, which, according to the latest estimations numbered about 800 thousand.

8. GREECE

State	Greece
Name of organization:	Technical Chamber of Greece
Website:	www.portal.tee.gr
Contacts:	Directorate of European Affairs & International Relations – Department of European Affairs 4, Nikis str – 10563 Athens Greece Tel:+30 210 3291613, +30 210 3291608, +30 2103291345 Fax: +30 210 3291614
President	Eng. Christos Spirtzis

TRAINING FOR ACCESS TO THE PROFESSION

In Greece, the model used for engineering training is provided by three different public training institutions: universities, polytechnics and the so-called TEI (Technological Education Institutions).

There are basically two engineering degree courses which are based on the ECTS credits system:

- 300 credits are attributed to degree courses provided by polytechnics and by universities which last for 5 years.
- 240 credits are attributed to degree courses provided by the TEI which last for 4 years.

Only those students who have obtained a high school leaving certificate issued by grammar schools after a total of 12 years of schooling (6 years of primary school), 3 years of junior high school and 3 years of senior high school) can access the university courses provided by the three academic institutions.

ACCESS TO THE PROFESSION

In Greece, the engineering profession is regulated and the title of engineer, protected by the Law 4663/1930[4], is only issued to those who hold the license awarded by the Technical Chamber of Greece (TEE) that allows enrolment at the same institution.

To access the engineering profession, it is therefore necessary:

- To have a five-year degree certificate, issued by public universities or polytechnics;
- To pass the exam organized and held by the TEE, which analyses the candidate's graduation thesis and checks his capacity to address various professional problems. Passing the exam means that the license is granted and the engineer can register with the Chamber

It is important to point out that only graduates from the public polytechnics and universities[5] with a five-year degree qualification can enrol in the Technical Chamber. Therefore, graduates from the TEI, for which the academic qualification is not recognized by the technical Chamber for the purpose of enrolling in the professional Register, cannot work as an independent professional.

Currently, the TEI engineer can therefore work as an employee, but cannot practice the activities that are reserved by law [6] to those enrolled in the technical Chamber.

The TEE, established in 1930, is based in Athens and is organized territorially in the country's various regions. The Register that the members enrol in has 11 sections, based on the various engineering specializations (Civil Engineering, Architecture, Mechanical and Electrical Engineering, Mechanical Engineering, Electrical Engineering, Rural Engineering, Chemical Engineering, Metal Engineering, Naval Engineering,

4 With regard to the title of civil engineer

5 The 1975 constitution in fact forbids recognition of private universities.

6 As an example, reference can be made to the laws 6422/1934, royal decree 16/1950, presidential decrees 252/1988 and 50/2003 which govern the activities reserved for civil engineers and are specified in detail.

Marine Engineering, Electronic Engineering) and has about 85 thousand members in all.

Foreign engineers who wish to practice the profession must be enrolled in the Technical Chamber of Greece. An accreditation body (Dikatsa) decides on the equivalence of qualifications that allow access to the Register.

Engineers enrolled in the technical chamber must abide by a code of ethics that is drawn up by the TEE. In the event of infringement of the code, the disciplinary committee will issue the corresponding sanctions that range from a simple reprimand to the suspension of licenses for a certain period of time.

Public works legislation provides for the fact that only engineers enrolled in certain registers (MEK, MEEN, etc.) that are kept by the Ministry for Public Works (where the TEE is represented) can be commissioned for public works.

TRAINEESHIPS

No professional traineeship is a requirement for becoming a professional engineer.

CONTINUING EDUCATION

In Greece there is no continuing professional development system for TEE members.

PROFESSIONAL LIABILITY POLICY

TEE members are not obliged to take out a civil liability policy that protects third parties whilst carrying out their own professional activity.

9. ISRAEL

State	Israel
Name of organization:	Association of Engineers, Architects and Graduates in Technological Sciences in Israel
Website:	www.aeai.org.il
Contacts:	200 Dizengoff St, Tel Aviv P.O. Box 6429 Zip 61063 Tel: +972-3-5240274 Fax: +972-3-5235993

TRAINING FOR ACCESS TO THE PROFESSION

In Israel, due to its productive vocation which is strongly oriented towards technology, there is a vast offer of various types of engineering training courses.

Of all the training courses offered, the following can be named:

A. Diploma in *Practical engineering – handasai* that is awarded on completion after a 3-year cycle of studies by the *technological colleges*;

B. The *Bachelor of Technology (B.tech.)* that is awarded on completion of a 4-year cycle of studies by universities. The Bachelor of Technology can be obtained by those who hold a diploma in Practical engineering with extra attendance of at least 5 semesters;

C. The diploma in *Engineering–mehandes,* which is awarded on completion of a 4 or 5-year study cycle which is issued by universities.

The diploma in *Practical engineering* comprises a theoretical study path, together with an important period of practical training in companies and private enterprises. A *Practical Engineer* is basically a professional figure who acts as an intermediary between "engineers" and "technicians". The role is therefore a connecting figure who can adapt the guidelines

given by engineers, in production processes, with the intention of making them easier to implement for technicians.

The diploma in *Engineering-mehandes,* on the other hand, foresees thorough studies in subjects that concern mathematics and physics, with specific in-depth specialization according to the area of engineering chosen. Attendance of a period of practical training at companies that have been accredited by the university is also included.

Anyone with a high school leaving certificate after a total of 12 years schooling, which comprises 6 years of primary school, 3 years of junior high school and 3 years of high school, and after passing an entrance test, can access university engineering courses.

ACCESS TO THE PROFESSION

In Israel, the profession is regulated and the title of engineer, protected by law, can only be used by members of the "Register of engineers and architects" (*Pinkas Hamehandesim VeHaAdrichalim*) kept at the Ministry of Economy *(ex Ministry of Trade, Industry and Labor).*

Only those subjects with an engineering qualification that is accredited by the *National Institute for Technological Training* held at the Ministry of Economy, can enrol in the Register of Engineers.

Generally, enrolment in the register is sufficient for practicing the profession. However, in addition to enrolment in the register, civil and chemical engineers and architects must also hold a license issued by the Ministry of Economy to graduates with at least 3 years of working experience in their own sector of specialization. Subjects applying for the license can also gain part of the required 3 years experience overseas, but it is necessary that at least 1 year of work experience is gained in Israel.

Electrical and electronic engineers must also hold the license, issued by the *HaYechida LeChashmal VeLeElectronika* department at the Ministry of Economy, based on the examination of qualifications and working curriculum, but it is not instead necessary for the graduates to have gained three years of working experience.

Members are permitted to practice certain reserved activities based on the qualification that they possess. For example, members holding the

Practical engineer diploma are permitted to design small-scale buildings, up to four floors.

It is estimated that there are currently about 110 thousand engineers in the country, and there is the highest incidence worldwide of engineers in the country: according to the Holon Institute of Technology, in fact, there were already 13.5 engineers for every 1,000 inhabitants back in 2006.

In Israel, the practicing of the profession without the required requisites constitutes a criminal offense.

TRAINEESHIPS

No professional traineeship is generally foreseen for becoming a professional engineer. However, in the fields of civil and chemical engineering and architecture, three years of working experience are necessary for obtaining the license.

CONTINUING EDUCATION

In Israel, no continuing professional development program exists in order to practice the profession.

PROFESSIONAL LIABILITY POLICY

There is no mandatory requirement to possess any liability policy in order to practice the profession.

10. ITALY

State	ITALY
Name of organization:	Consiglio Nazionale degli Ingegneri
Website:	www.tuttoingegnere.it
Contacts:	Via IV Novembre 114, 00187 Roma, Italy Tel. +39.06.6976701 Fax. +39.06.69767048/49 segreteria@cni-online.it Certified E-Mail: segreteria@ingpec.eu
Chairman:	Eng. Armando Zambrano

TRAINING FOR ACCESS TO THE PROFESSION

In Italy, the university courses that lead to access to the profession of engineer are contained in the Presidential Decree nr. 328 dated 5 June 2001 (DPR 328/2001) and are organized based on the system known as "**3+2**", i.e. two training cycles lasting three and two years respectively.

All those who have obtained their high school leaving certificate after a total of 13 years of schooling (5 years at primary school and 8 years of high school, which are divided into 3 years of junior high school and 5 years of senior high school) can access the university courses, of which almost all currently do not limit access by numbers, but only require candidates to take a non-competitive admission test.

The universities, as defined in the Ministerial Decree nr. 509, dated 3 November 1999, and amended by Decree nr. 270 dated 22 October 2004, issue the following first and second level qualifications, based on the "3+2" system:

a) Bachelor degree

b) Master's degree

The Bachelor's **degree** awarded at the end of the first cycle, has the aim of providing the student with adequate competence in general scientific methods and content, and specific professional knowledge.

The master's **degree course**, not contradictory to the previous one, and which is actually a natural continuation thereof, aims to provide the student with an advanced level of training for the practice of high level qualified engineering services in specific environments.

The two university cycles, with the aim of making the commitment required of students "objective" to favoring mobility (between the various courses or various universities) are defined on the basis of university course credits (CFU)[7] that represent the amount of work load carried out by the student to acquire knowledge and skills in a given subject.

In order to **graduate with a bachelor's degree** the student must have acquired **180 Credits**. While in order to obtain a **master's degree** the student must have acquired **300 Credits**, including the ones already acquired and acknowledged as valid for the relative specialized degree course.

The Ministerial Decree dated 4 August 2000 defines the classes of decree already foreseen by the Ministerial Decree 509/99, indicating the respective "*Qualifying training goals*" and the "*Essential training activities"*.

The Presidential Decree 328/2001 lists the classes of degree that can access the State examination for qualification as a professional engineer:

For admission to the State examination and later enrolment in section A, obtaining the master's degree is therefore necessary in one of the following areas of the degree:

a) for the civil and environmental sector:

[7] The CFU credits are equivalent to ECTS credits

1) Architecture and construction engineering

2) Civil engineering;

3) Engineering for the environment and for the territory;

b) for the industrial sector:

1) Aerospace and astronautical engineering;

2) Biomedical engineering;

3) Chemical engineering;

4) Automation engineering;

5) Electrical engineering;

6) Energy and nuclear engineering;

7) Managerial engineering;

8) Mechanical engineering;

9) Naval engineering;

10) Materials science and engineering;

c) for the information sector:

1) Information Technology;

2) Biomedical engineering;

3) Automation engineering;

4) Telecommunications engineering;

5) Electronic engineering;

6) Managerial engineering;

7) IT Engineering.

For admission to the State examination and later enrolment in section B, obtaining a degree is therefore necessary in one of the following classes:

a) for the civil and environmental sector:

1) Architecture and construction engineering sciences;

2) Civil and environmental engineering;

b) for the industrial sector:

1) Class 10 - Industrial engineering;

c) for the information sector:

1) Class 9 - Information engineering;

2) Class 26- Information technology and science.

As qualifications from state universities or recognized by the state in Italy have a legal value, the inter-ministerial decree nr. 233 dated 9 July 2009 published in the Official Gazette dated 7 October 2009 established a table of equalization between old system bachelor degrees (DL, master's degrees (LS) ex Ministerial Decree 509/1999 and full five-year degrees (LM) ex Ministerial Decree 270/2004. When the Presidential Decree 328/2001 was issued, professional authorization could only be connected to a currently valid type of degree (at that time the degrees and master's degrees from the 1999 reform). Further to the 2004 reform, provisions contained in the Presidential Decree 328/2001 concerning master's degrees (which now no longer exist) must be applied to the corresponding full five-year degrees, according to the above-stated table of equalization, contained in the Inter-ministerial Decree dated 9 July 2009.

ACCESS TO THE PROFESSION

In Italy, the engineering profession is regulated by law and the professional title of engineer is issued only to those enrolled in the state register.

To become a professional engineer, therefore, according to article 4 of the Presidential Decree 328/01 it is necessary:

- Passing the State examination, which is held every 6 months at the universities indicated by the Ministry for Education, and corresponding to the class and type of degree obtained;
- Subsequent mandatory enrolment in the Register at one of the 106 Provincial Associations.

The Register of engineers is organized into two sections: A and B.

Each section is then divided into three sectors: civil and environmental engineering; industrial engineering; information engineering.

Those with a master's degree can access section A, while those with a bachelor's degree can access section B.

The members of section A (of whom there are more than 236 thousand) can use the following professional titles:

a) those enrolled in the civil and environmental sector can use the title "Civil and Environmental Engineer";

b) those enrolled in the industrial sector can use the title of Industrial Engineer;

c) those enrolled in the information sector can use the title of Information Engineer.

The members of section B (of whom there are about 9 thousand) can use the following professional titles:

a) those enrolled in the civil and environmental sector can use the title "Junior Civil and Environmental Engineer";

b) those enrolled in the industrial sector can use the title of Junior Industrial Engineer;

c) those enrolled in the information sector can use the title of Junior Information Engineer.

The professional activities that are dealt with by the engineering profession are set out in the Presidential Decree 328/01 and are divided between section A and section B.

In particular, activities carried out by members enrolled in section A, are the ones divided between the three sectors stated above, and that imply the use of advanced, innovative or experimental methods in planning, supervision of works, estimation and inspection of structures, systems and complex or innovative processes.

Activities carried out by members enrolled in section B, on the other hand, are all the ones that imply the use of standard methods in addition to simple or repetitive systems and processes.

TRAINEESHIPS

No professional traineeship is currently a requirement for becoming a professional engineer. It is therefore possible to take State examination immediately.

CONTINUING EDUCATION

As of 1 January 2014, one requisite for practicing as a professional engineer is that the members enrolled in the Register must carry out continuing professional courses along the entire length of their career, maintaining at least 30 training credits (CFP).

PROFESSIONAL LIABILITY POLICY

As of 15 August 2013, members are obliged to take out a civil liability policy that protects third parties whilst carrying out their own professional activity.

11. LEBANON

State	Lebanon
Name of organization:	Ordre des Ingénieurs et Architectes de Beyrouth
Website:	http://www.oea.org.lb/
Contacts:	Maison de l'ingénieur – Boulevard de la Cité Sportive – B P 11 – 3118 Beyrouth Lebanon Tel: +961 1 826 146 Fax: +961 1 826 145 E-mail: Info@oea.org.lb
Chairman:	Eng. Khaled Chehab (seat of Beirut)
Chairman:	Eng. Marius Behaini (seat of Tripoli)

TRAINING FOR ACCESS TO THE PROFESSION

In the Lebanon, the training path that allows access to the engineering profession is modelled on the French system, which can be defined as 2+3, i.e. a two-year preparatory cycle and subsequently a three-year specialization cycle.

The academic institutions that issue engineering diplomas are the universities and the higher technical institutes, which are all public.

The students with a high school leaving certificate obtained after a total of 11 years of schooling and who have passed an entrance exam can access the two-year preparatory cycles.

With special regard to the organization of education, it is based on a model that provides for a two-year course - corresponding to the two years of preparation common to all engineering students (tronc commun) and then several years of specializations in the civil, electronic, chemical, mechanical and hydraulic engineering fields. Architecture is also a specialization of engineering science.

ACCESS TO THE PROFESSION

In the Lebanon, the profession is regulated and the title of engineer is protected by Law nr. 636.

To practice as an engineer, it is in fact necessary to hold a license issued by the Ministry of Public Works.

The following requisites are essential for obtaining a license:

- an engineering degree from a Lebanese university that is accredited by the Order;
- an engineering degree from an overseas university or institute. In this case, recognition of the qualification must be requested from the Ministry of Culture and Higher Education, which issues the relative certificates.

All license holders must enrol in one of two orders present in the country (Order of Engineers of Tripoli and the Order of Engineers of Beirut), without having to pass any professional qualification exam.

Finally, it must be pointed out that engineering activities are reserved for those who have a regular *license* issued by the Ministry of Public Works and who are regularly enrolled in the order.

The Lebanon has a large number of engineers, 50,000 in total, 35,000 of whom are enrolled in the Order of Beirut and the remaining 15,000 in the Order of Tripoli.

TRAINEESHIPS

The Lebanese order does not provide for a professional traineeship or apprenticeship. In spite of this, training courses to obtain engineering diplomas, universities and technical institutes provide for work experience cycles.

CONTINUING EDUCATION

No continuous professional development courses are provided for, although the Order regularly organizes conferences and seminars on the most current topics with the aim of providing professional information and development for its members.

PROFESSIONAL LIABILITY POLICY

To practice as an engineer, the Lebanese order does not require any mandatory insurance cover for the risks deriving from the profession.

12. LIBYA

State	Libia
Name of organization:	Lybian Engineers Syndicate
Contacts:	P.O. Box 4865 Tripoli Libya Tel +218 21 477 3901/1465 Fax +218 21 477 7874
Chairman:	Eng. Ismail Mohamed ALjiru

TRAINING FOR ACCESS TO THE PROFESSION

In Libya, engineering qualifications are awarded by universities and polytechnics.

The Libyan university system was developed during the decolonization period, thanks to technical and financial support from international organizations, in particular UNESCO, which contributed to the establishment of universities and polytechnics.

The entire matter of university education is currently governed by Law nr. 18 from 2010, which attributes all administrative functions to the *Ministry of Higher Education and Scientific research (MHE&SR).*

Degrees in engineering are awarded on completion of a five-year study path and the offer of courses includes the following specialization sectors: civil engineering and architecture, mechanical, electronic, transport, marine, naval, geological, industrial, chemical, information technology, petroleum, aerospace and nuclear.

All those who have obtained their high school leaving certificate, on completion of a total of 12/13 years of schooling (6 years of primary school, 3 years of junior high school and 3/4 years of specialization at high school) can access university courses.

The *Ministry of Higher Education and Scientific research* establishes the criteria for accessing universities each year, based on the marks awarded at the end of each specialization area at high school.

Currently, the legislative and information framework is extremely confused and does not allow sufficient information to be provided to indicate the access system to the profession.

13. MALTA

State	Malta
Name of organization:	Chamber of Engineers
Website:	www.coe.org.mt
Contacts:	127, Professional Centre, Sliema Road, Gzira GZR 1633 – Malta, Tel. +356 2133 4858 – +356 7999 4632, fax +356 2134 7118
Chairman:	C.Eng. Norman Zammit
Chairman:	Perit Stephen Farrugia (Kamra tal-Periti)

TRAINING FOR ACCESS TO THE PROFESSION

In Malta, the training path to obtain an engineering qualification is based on the English model that involves several different study paths: *Undergraduate (bachelor)* and *Postgraduate (Master* and *Ph.D.).*

The university engineering courses last for a minimum of 4 years. These are arranged into semesters, and foresee different specialization paths in civil, electronic, mechanical and information technology engineering and architecture.

The first semester of the first year of the course is the same for all students, while paths are then differentiated from the second semester onwards.

Students who have obtained their high school leaving certificate, after a total of 12 years of schooling (5 years of primary school, 5 years of junior high school and 2 years of high school) can access the university courses). It must also be pointed out that due to the strong Anglo-Saxon influence in the organization of university courses, admission to the engineering degree courses is only permitted to those who hold an English language certificate.

ACCESS TO THE PROFESSION

The engineering profession is regulated in Malta and the professional title is only awarded after obtaining a *license* and enrolment to the Board.

There are two separate bodies who can issue licenses: one aimed at the civil engineering and architecture sector (*Periti Board*) and one at the remaining sectors of specialization (*Board).*

Subjects with the following requisites can apply to obtain a license:

- a four or five-year degree certificate, awarded at an accredited degree course by the two *Boards*;
- completion of professional traineeship:
- a state qualification examination must only be passed for the civil engineering and architecture sector.

The two *Boards* have the important tasks of keeping registers of the license holders and also that of controlling observance of ethical and conduct rules by the members. The Boards also have sanctioning powers in the event of violation of the regulations on the correct practice of the profession.

In addition to the *Periti Board* there is also another regulatory body for the profession, called the Chamber of Civil Engineers and Architects (*Kamra tal-periti).* The chamber carries out a technical support role, drawing up codes of ethics and minimum standards of quality and also provides consulting and information to the Ministry of Labor for the update of sector legislation.

TRAINEESHIPS

To access the engineering profession, a professional traineeship must be completed that lasts for different periods depending on the specialization path followed.

For the civil engineering and architecture sector, a duration of at least 2 years has been established, following the four-year degree course. It is also possible for one of the two years of traineeship to be carried out overseas, further to approval from the *Periti Board*. If a five-year degree course is completed, then only one year of traineeship is sufficient.

For the remaining specialization sectors, the law foresees at least 1 year of *engineering work training* either prior to or subsequent to being awarded the degree. The law also provides for at least 2 years of *traineeship* to be carried out after being awarded the degree, with an engineer who is enrolled in the *Board*.

CONTINUING EDUCATION

Maltese law does not foresee any mandatory continuing professional development for practicing the profession. However, several associations representing engineers, such as the *Chamber of Engineers,* promotes several activities for the professional development of its members.

PROFESSIONAL LIABILITY POLICY

To practice the profession, it is necessary for members of the *Boards*, to stipulate a professional liability insurance policy to protect third parties.

The *Boards* carry out a control on the insurance policy, to check the actual correspondence between risk deriving from professional activity and the level of coverage.

14. MONTENEGRO

State	Montenegro
Name of organization:	Engineer Chamber of Montenegro
Website:	www.ingkomora.me
Contacts:	Bulevar Džordža Vašingtona 31 – 81000, Podgoriga, Montenegro Tel. +382 (0) 20 228 295 +382 (0) 67 226 574 Fax: +382 (0) 20 228 296
Chairman	Ing. Branislav Glavatovic

TRAINING FOR ACCESS TO THE PROFESSION

In Montenegro the training path provided by university courses that award the engineering qualifications last for four years, structured on a 3+1 model basis. Only the degree in architecture course lasts for 5 years (4+1).

As part of the university courses that award engineering qualifications, the first 3 years are dedicated to theoretical basic training on mathematical and technical subjects, while the last one is dedicated to a specialization chosen in construction, electronic or mechanical sectors.

Students with a high school leaving certificate, obtained after a total of 12 years of schooling (8 years of primary school and 4 years of secondary school) can access the university courses.

No accreditation system of the engineering degrees is provided for.

ACCESS TO THE PROFESSION

In Montenegro, the engineering profession can be freely practiced and is allowed once the engineering degree has been awarded.

In the event of the provision of engineering services for companies that are taking part in work tenders, supplies and services to public bodies, the participating companies in the tenders must certify that the parties in their employment and workers hold an engineering license. It is not, therefore, necessary to possess a license or to be enrolled in the Order outside of the public contracts sector.

The license is issued by the *Engineer Chamber* based on the evaluation of applications submitted by the interested parties in possession of the following requisites:

1. a degree awarded by a Montenegro or overseas university (based on the education qualification recognition system);
2. passing a technical examination organized by the Engineer Chamber and which is taken at the end of one year of practicing the profession;
3. three years of practicing the profession.

There is an exemption that can be applied only to subjects who, in the year 2000 already possessed a university engineering degree and who had already - on the same date - practiced the professional for a period of five years, which allows licenses to be issued without having to pass the above-stated examination.

Those subjects with a license are automatically enrolled in the Engineer Chamber,

The Chamber also provides technical and information support to its members. A control body is also set up within the chamber to pass judgment on the correct use of licenses and which can also order revocation or suspension thereof in the event of any irregularities.

The Chamber also has its own qualification and engineering qualification recognition system for qualifications awarded overseas. It must, in fact, be underlined that overseas engineers who wish to provide their engineering services in the public contracts sector require a license issued by the Chamber.

There are about 2000 engineers enrolled in the Chamber, which includes overseas engineers practicing their profession in Montenegro.

TRAINEESHIPS

No professional traineeship is currently a foreseen for becoming a professional engineer. It is only mandatory to have practiced for at least three years for the issuing of the engineer's license.

CONTINUING EDUCATION

Continuing professional development courses are not mandatory. A technical and legal consultancy service is provided for engineers enrolled in the Chamber only.

PROFESSIONAL LIABILITY POLICY

There is no mandatory requirement for the stipulation of insurance cover for damaged caused whilst practicing the profession.

15. MOROCCO

State	Morocco
Name of organization:	Union Nationale des Ingénieurs Marocains
Contacts:	Résidence Kays, Immeuble B N° 4 –Agdal Rabat Morocco Tel: +212 7 776 857 Fax: +212 7 776 851
Chairman:	Ing. Badia Aarab

TRAINING FOR ACCESS TO THE PROFESSION

In Morocco, the academic training path that allows access to the engineering profession is organized along the lines of the French model that can be summarized as (2+3): a general preparatory cycle lasting two years followed by a three-year specialization course on engineering subjects.

An engineering degree in Morocco is almost exclusively awarded by the Great Engineering Schools, and is called the *Diplôme d'Ingénieur d'État* which requires the discussion of a final thesis.

There are several engineering schools throughout the country, which differentiate in their admission procedures, length and organization of study cycles.

On the one hand there are the less widespread schools, the *Écoles d'ingénieurs post-bac (Cycle préparatoire intégré)* which provide for 5 years in total of studying and include the two years of the preparatory cycle within that period. Admission to this type of school (e.g. the École nationale forestière d'ingénieurs) is usually via a test that is taken at the same university.

On the other hand, there are the more widespread schools called *Écoles d'ingénieurs post-prépas*, which are entered after passing a national

public exam[8] (held once a year), and that does not provide for the two-year preparatory cycle within their courses.

Only students who have attended and passed the two-year preparatory course for the admission exam to the schools can take the national[9] exam (CNC), which is held in the last two years in some selected high schools after completing the high school leaving diploma.

Engineering degree courses are accessed after a total of twelve years of study: nine years of primary education and three years of secondary education.

ACCESS TO THE PROFESSION

In Morocco the engineering profession is not regulated. Therefore, on being awarded a degree, the profession can be freely practiced.

The title of "Engineer" is granted, however, only to those who have been awarded the degree from the great engineering schools. On the French model, engineering courses in Morocco are subject to accreditation by the State.

Therefore, there are no official Orders that engineers must be enrolled in to practice their profession and there is no State examination for attribution of the title.

There are, however, two important associations in the country that protect the profession, which engineers can join on a voluntary basis.

It is estimated that there are about 300 thousand engineers in the country.

TRAINEESHIPS

Due to the non-regulation of the profession, there is no professional traineeship system.

[8] http://www.amci.ma/telechargement/Concours_CNC%202009.pdf

[9] http://fr.wikipedia.org/wiki/Concours_national_commun

CONTINUING EDUCATION

Again, due to the lack of official institutes or lists for the profession, there are no continuous professional training courses organized. Currently, there are no significant proposals for the adoption of professional continuous development programs

PROFESSIONAL LIABILITY POLICY

For the same reasons as above, there is no mandatory stipulation of any professional insurance policy.

16. PALESTINE

State	Palestine
Name of organization:	General Union of Palestinian Engineers (GUPE)
Contacts:	VAT O. Box 155 Ramallah P.L.O. building, Albalou, Ramallah Palestine Tel: 00970 2 242 33 65 Fax: 00972 2 242 33 75
Chairman	Eng. Marwan Abdelhamid

TRAINING FOR ACCESS TO THE PROFESSION

In Palestine, the training path to obtain an engineering qualification is based on the Anglo-Saxon model that involves several different study paths: *Undergraduate (bachelor)* and *Postgraduate (Master* and *Ph.d).*

The university engineering courses last for a minimum of 5 years. These are arranged into semesters, and foresee different specialization paths in civil, electronic, communications, mechanical, chemical and industrial engineering.

It must be emphasized that, due to the strong push for internationalization in the organization of university training courses, the engineering degree courses are mainly held in English.

Another important element is the *Accreditation and Quality Assurance Council (AQAQ)*. This body was established as part of the Ministry for Education and Higher Learning as an accreditation body for degree courses.

Students who have obtained their high school leaving certificate, after a total of 12 years of schooling can access the university courses.

ACCESS TO THE PROFESSION

The profession is regulated in Palestine on the basis of a "professional associations" model, with a large number of activities that are entirely reserved to members of the order.

All those with an engineering or architecture diploma can enrol in the association. No professional qualification examination is necessary and enrolment in the association awards the titles of engineer and architect to members.

To practice the profession, it is also necessary to enrol in the Register of Engineers of Jordan at the same time.

TRAINEESHIPS

No professional traineeship is currently a foreseen requirement for becoming a professional engineer.

CONTINUING EDUCATION

No mandatory continuing professional development courses are foreseen to practice the profession.

PROFESSIONAL LIABILITY POLICY

In Palestine, the Register of Engineers provides professional liability insurance for its members practicing their profession.

17. PORTUGAL

State	Portugal
Name of organization:	Ordem dos Engenheiros
Website:	www.ordemengenheiros.pt
Contacts:	Av. António Augusto de Aguiar n° 3D – 1069- 030 Lisboa Portugal, Tel. +351 213132600, Fax +351 213524632
Chairman:	Ing. Carlos Matias Ramos

TRAINING FOR ACCESS TO THE PROFESSION

The training paths for obtaining an engineering qualification are organized on the basis of an offer characterized by the establishment of two separate qualification levels.

An *Engenheiro técnico* that is awarded at the end of a three-year cycle of studies from Polytechnics and Universities, and an *Engenheiro* qualification that is awarded at the end of a five-year study cycle from universities.

Alternatively, the five-year study paths can be organized in a single cycle or in two cycles on a 3+2 model.

Subjects with an *Engenheiro técnico* qualification can integrate their own qualification by attending a two-year specialization program, to achieve *Engenheiro*

Anyone with a high school leaving certificate after a total of 12 years schooling: 9 years of primary school (*ensino básico*) and 3 years of secondary school (*ensino secundário*) can access the university courses.

The degree courses to become a technical engineer are intended to train a professional figure who can be employed as middle management in the management of production processes.

In reference to the five-year degree courses, on the other hand, they set themselves the aim of training highly specialized professional figures with the 4th and 5th year of teaching dedicated to a specialization in one of the engineering science sectors.

ACCESS TO THE PROFESSION

In Portugal, the profession is regulated and the title of engineer can only be used by those enrolled in the Order. The Portuguese system actually contains two separate Orders:

- *Ordem dos Engenheiros* where subjects holding an *Engenheiro* qualification can enroll;
- *Ordem dos Engenheiros técnicos* where subjects holding an *Engenheiro técnico* qualification can enroll.

To access the profession, it is necessary:

- to enroll in the order corresponding to one's qualification;
- to pass the professional qualification examination if not already in possession of a qualification accredited by the Order. If instead, the subject already holds an accredited qualification, it is not necessary to pass the professional qualification examination.

The Order has the role of accrediting study courses that are held by the academic institutions.

The *Ordem dos Engenheiros técnicos* was established by the *decreto-lei* 349 dated 2 September 1999, amended by the *lei* 47 dated 27 June 2011. Organization and operation copy the better known *Ordem dos Engenheiros* model.

The *Ordem dos Engenheiro s* was established by the *decreto-lei* 272 dated 24 November 1988, and is organized territorially and by sectors of specialization: civil engineering, electronic engineering, mechanical engineering; chemical engineering; mining engineering; geographical engineering; agronomy; metal engineering; information technology engineering and environmental engineering.

Both Orders have adopted their own Regulations which specify the members' rights and obligations, and provides for a system of penalties and fines in the event of infringement of the regulations.

It is estimated that there are about 65,000 engineers in the country, 16 thousand of whom are professionals enrolled in the Order.

TRAINEESHIPS

When first enrolling in the Order, the member becomes a *Membro Estagiario,* and it is mandatory to attend a period of traineeship of at least two years.

CONTINUING EDUCATION

No mandatory continuing professional development for members of the professional orders of engineers is provided for in the Portuguese system. The obligation to attend a "Training course in Professional Ethics has been mandatory for the *Membros Estagiarios* since 2002.

PROFESSIONAL LIABILITY POLICY

In Portugal, the Order of Engineers provides professional liability insurance for its members practicing their profession.

18. SLOVENIA

State	Slovenia
Name of organization:	SLOVENIAN CHAMBER OF ENGINEERS (IZS)
Website:	www.izs.si
Contacts:	Jarska cesta 10 B 1000 Ljubljana Slovenia Tel: +386 (0)1 547 3340 Fax: +386 (0)1 547 3320
Chairman:	Eng. Crtomir Remec

TRAINING FOR ACCESS TO THE PROFESSION

The academic training path in Slovenia which provides access to the engineering profession is based solely on the 3+2 ("Bologna" Model) system, i.e. on two university study cycles that last for three and two years respectively.

However, access to the profession is also possible via a qualification obtained by attending a four-year course, known as *four-year tertiary*.

All those who have obtained a high school leaving certificate after a total number of 13 years of schooling (9 years of mandatory primary school and 4 years of secondary school) can access the university courses, after passing the entrance test.

The universities award the following qualifications, first and second level, based on the 3+2 system, which are usually called:

- Bachelor (*Diplomirani*);
- Master (*Magister*).

The first level degree, obtained after acquiring 180 ECTS credits, aims to provide the student with basic engineering knowledge.

The second level degree, which is obtained on acquiring 120 ECTS credits instead aims to provide students with an advanced level of training.

ACCESS TO THE PROFESSION

The engineering profession in Slovenia is regulated and the professional title of *pooblaščenih inženirjev* (Certified Engineer) can only be used by members enrolled in the Slovenian Chamber of Engineers.

To access the profession, it is therefore necessary to:

- hold an engineering degree, or a non-academic qualification named *four-year qualification.* A new law is currently being drawn up that will allow access to the profession only for those who have a university qualification;
- pass a professional qualification examination;
- enroll in the Slovenian Chamber of Engineers based on the specialization possessed.

The Slovenian Chamber of Engineers is organized based on specialization and includes the following sections:

- Civil engineering;
- Mechanical engineering;
- Electronic engineering;
- Technology engineering and other specializations;
- Mining and geotechnological engineering;
- Surveyors' section.

It is estimated that there are 6,500 engineers enrolled in the Slovenian Chamber of Engineers.

TRAINEESHIPS

In addition to the academic qualification (or the one named *four-year-qualification*), it is also necessary to complete a professional traineeship, the duration of which depends on the qualification possessed:

- at least 3 years if the subject holds a degree;

- at least 5 years if the subject holds a *four-year-qualification*.

After the traineeship, it is possible to take the professional qualification examination.

CONTINUING EDUCATION

No mandatory continuing professional development courses are foreseen to practice the profession. A law is however under discussion which may make continuing professional development mandatory by the end of 2014.

PROFESSIONAL LIABILITY POLICY

To be able to practice the profession legally, it is necessary to stipulate a professional liability insurance policy.

19. SPAIN

State	Spain
Name of organization:	Istituto de la Ingenieria de España
Website:	www.iies.es
Contacts:	General Arrando 38 – 28010 Madrid, Spain Tel. +34 91 3197417 / 7427 Fax. +34 91 310 3380
Chairman:	Ing. Manuel Moreu Munaiz

TRAINING FOR ACCESS TO THE PROFESSION

In Spain, the training courses for obtaining an engineering diploma are organized by the universities on the basis of two separate levels of qualification: the *Ingegnero técnico* diploma and the *Ingegnero Superior diploma.*

The two diplomas correspond to two different university training paths: the first is a single study cycle lasting three years and the second comprises 2 cycles of study lasting four or five years in total.

The *Ingegnere tecnico* degree course provides a practical type of professional skill that can be used in sectors regarding the organization of production.

To the contrary, the *Ingegnero Superior* degree course is aimed at taking on highly professional roles, both autonomously and at the service of large public and private enterprises, in usually executive managerial roles.

Each of the study cycles comprises a set of basic examinations called "*materias troncales*", to which a second set of exams established directly by each university as part of their autonomy, are added.

The university courses are also organized on the basis of the following 8 specialization sectors: civil engineering, mineral; aeronautical; mountain; agrarian; industrial; naval and telecommunications.

All those who have attended a total of 13 years of schooling (6 years of primary school, 4 years of junior high school and 2 years of high school,

plus 1 year of preparation for the university entrance test) can access university courses. Only students who have passed the entrance test (*Selectividad*), can attend university courses.

ACCESS TO THE PROFESSION

The profession is regulated in Spain on the basis of an "order" model, with a large number of activities that are entirely reserved to members of the order.

In particular, the Spanish model is characterized by a close network of *Colleges,* set up regionally, and on the basis of different levels of professional qualification (*Colegios para Ingegneros Superiores* and *Colegios para Ingegneros Técnicos).*

Engineers must be enrolled in the *Colegios* in order to practice the profession. University qualifications provide professional status and once awarded, allow the engineer to enrol in the boards corresponding to each particular specialization.

The *Colegios* also have control and disciplinary functions concerning engineers' activities, and also several technical and legal consultancy activities for the members. The professional employment services for unemployed engineers or aimed at finding alternative employment, is also of considerable importance.

CONTINUING EDUCATION

There is no mandatory continuing professional development for the members of the *Colegios* which do, however, organize different training courses for engineers.

PROFESSIONAL LIABILITY POLICY

Members are not obliged to stipulate professional liability insurance for damage caused to third parties while practicing their profession.

20. SYRIA

State	Siria
Name of organization:	Sirian Engineers Syndicate (Order of Syrian Engineers and Architects)
Website:	www.osea.org.sy
Contacts:	Azme Square, Dar Al Mohndissen Building PO Box 2336Damascus Syria Tel:+963 11 221 4916 / 4718 Fax:+963 11 221 6948
Chairman:	Eng. Walid Gazal

TRAINING FOR ACCESS TO THE PROFESSION

The training path that allows access to the engineering profession in Syria requires a four-year basic cycle of studies and a possible two-year specialization course.

All those who have obtained their high school leaving certificate after a total of 12 years of schooling (6 years of primary school, 3 years of junior high school and 3 years of high school) and after being accepted beforehand at the chosen university faculty, can enrol in the university engineering courses.

ACCESS TO THE PROFESSION

The engineering profession is regulated in Syria by the Legislative Decree nr. 80 from 2010 and the title of engineer is protected by law. Only those subjects who are enrolled in the Register can use the title of engineer, with the mandatory obligation of indicating the area of specialization.

To practice the profession, therefore, it is necessary to have the following requisites:

1) To hold Arabian Syrian citizenship;
2) To have an engineering degree;
3) To have no criminal record;
4) To be enrolled in the Register of Engineers

It is estimated, that there are about 120,000 engineers in the country.

TRAINEESHIPS

To access the engineering profession, a professional traineeship of three years is required.

CONTINUING EDUCATION

A continuing professional development system for members of the Register of Engineers is also provided for in Syria.

PROFESSIONAL LIABILITY POLICY

In order to practice, members of the Register are obliged to take out a civil liability policy that protects third parties whilst carrying out their own professional activity.

21. TUNISIA

State	Tunisia
Name of organization:	Ordre des ingénieurs tunisiens
Website:	www.oit.org.tn
Contacts:	28 avenue Habib Bourguiba – Tunis Tunisia Tel:+216 71 345 311 / 332 041 Fax:+216 71 344 810
Chairman:	Ing. Almoji Melad

TRAINING FOR ACCESS TO THE PROFESSION

In Tunisia, the academic training path that allows access to the engineering profession is also based on the French system (2+3): a general preparatory cycle lasting two years followed by a three-year specialization course on engineering subjects.

An engineering degree in Tunisia is awarded in the Great Engineering Schools, which are all public and which requires the discussion of a final thesis.

The engineering degree courses are subject to accreditation by the State.

To gain a degree in engineering, it is therefore necessary to attend a preparatory two-year course first of all, after obtaining a high school leaving certificate and at the end of 13 years in total of schooling (6 years of primary school, 3 years of junior high school and 4 years of high school).

Attending this preparatory course then gives the students the right to take part in the national public examination for access to the engineering schools.

The main objective of the two-year preparatory cycle is, in fact, to provide a basic solid scientific, technological preparation that is necessary to take part in the national public examination to access the "engineering training courses".

On the basis of the mark obtained in the public examination and on the basis of the total applications, the students are assigned to an engineering school until all the places are occupied.

The contents of the preparatory cycle are divided into 4 specialization areas. Some sectors of the preparatory cycles can only be accessed by students who have graduated from certain high schools. For example, the specialization in biology is currently reserved solely for graduates from the Higher Institute of Experimental Sciences.

Each specialization area in the preparatory class corresponds to the possibility of accessing a determined specialization in the engineering degree course. Therefore, for example, the Maths and Physics, Physics and Chemistry and Technology paths also allow enrolment in all the engineering courses. While following the specialization in Biology brings about more limited choices aimed at, for example, courses in engineering courses in Agrarian Science and Technology, Biology and Geology.

All the engineering degree courses follow the regulations contained in article 5 of Decree 95/2602 dated 25 December 1995. The first and second year of study each include thirty-six (36 weeks) of lessons, four (4) weeks of which of work experience. The third year includes thirty-two (32) weeks, 16 of which are reserved for the degree project.

The following specializations are foreseen:

Civil Engineering; Hydraulic and Environmental Engineering; Electrical Engineering; Industrial Engineering, Mechanical Engineering; Computer Engineering; Telecommunications Engineering; Advanced Technologies; Modeling for Industry and Services.

ACCESS TO THE PROFESSION

The engineering profession in Tunisia is regulated and the professional title, protected by law, is assigned to members of the Register. For the same reason, abusive use of the title is punishable by law, pursuant to article 159 of the Penal Code.

Pursuant to Decree Law nr. 82/11 dated 21 October 1982 and Law nr. 97-41 dated 9 June 1997, a series of requisites must be observed to practice the engineering profession in Engineering:

- Tunisian nationality;
- enjoyment of civil rights;
- possession of an engineering degree issued by accredited higher education institutes or an equivalent degree, recognized by the national authority of equivalence;
- mandatory enrolment in the Order of Engineers register.

The Order Council has the discretionary right to grant authorization to practice the engineering profession to engineers of other nationalities.

The engineer enrolled in the order is obliged to observe all the ethical obligations contained in the Code of Ethics drawn up by the Order and approved by decree.

The Order of Engineers is administered on a local level by the country's governorates and acts as a connection between central and peripheral government.

There are about 80 thousand engineers in the country.

TRAINEESHIPS

No professional traineeship for practicing the professional is required.

CONTINUING EDUCATION

No mandatory continuing professional development courses are foreseen to practice the profession.

PROFESSIONAL LIABILITY POLICY

Engineers are not required to take out any professional liability insurance policies to practice the profession.

22. TURKEY

State	Turkey
Name of organization:	The Union of Chambers of Turkish Engineers and Architects
Website:	http://www.tmmob.org.tr
Contacts:	Selanik Cadessi N° 19 Kat 1 06650 Yenisehir Ankara Turkey Tel: +90 312 418 1275 Fax: +90 312 417 4824
Chairman:	Eng. Stelios Achniotis

TRAINING FOR ACCESS TO THE PROFESSION

The training path offered in Turkey that allows access to the engineering profession is focused on a two-track academic system (4+2) lasting a minimum of four years, offered by about 80 universities, 25 of which are private.

All those who have gained a high school leaving certificate, after a total of 11 years of schooling (5 years of primary school plus 6 years of secondary school, divided into 3 years of junior high school and 3 years of high school) can access the university courses, after passing an entrance test.

The academic qualification awarded at the end of four years of studies is equivalent to the *Bachelor degree*, while attending the further 2 years is equivalent to gaining a *Master's degree.*

The title of Engineer is reserved only for engineering graduates and the use of this title by non-graduates is a criminal offense.

Generally speaking, in order to obtain the four-year degree in engineering, work experience must be gained in companies or professional studios during the second and third year of studies.

No accreditation mechanism for university qualifications is currently foreseen in Turkey.

The Chamber of Engineers organizes training courses.

ACCESS TO THE PROFESSION

In Turkey, the engineering profession is regulated by Law nr.6235 from 1954 (amended and updated by Legislative Decree nr. 601 from 2000) and the title of “Muh.” or “Muhendis” is reserved exclusively for engineers who have graduated from a Turkish university. Use of the title by non-graduates is a criminal offense and can be punished by 2 years' imprisonment. Foreigners must have their engineering or architecture studies recognized as an equivalent qualification.

To access the engineering profession, it is therefore necessary:

- Possession of a four-year degree (minimum);
- enrolment in the Union of Engineers and Architects of Turkey (UCTEA).

To enroll in the register, it is not necessary to pass a state examination.

The Turkish system provides for different areas of "reserved activities" for the engineer's skills.

Uctea was established in 1954 by the Law 7.303. Uctea is a public body (as stated in article 135 of the Constitution) and counted about 423 thousand members at the end of December 2012.

Uctea coordinates 24 "sector chambers) organizational division based on technical specialization) and 48 provincial coordination councils (that can be compared to our provincial registers).

Graduates of about 70 academic subjects which are part of the various operational realms of engineering, architecture and town planning can enroll in the "specialization chambers" gathered together under the Uctea umbrella.

Each Chamber has its own administrative autonomy. For example, referring to the Chamber that gathers together civil engineers, there are currently 72 thousand members. Another 40 thousand are enrolled in the Chamber of Electrical Engineers. There are 34 thousand architects

enrolled in their respective Chamber. The Chamber with the highest number of members is that of Mechanical Engineers, with almost 73 thousand members.

The law acknowledges a range of reserved activities based on respective acquired specializations for all engineers enrolled in the chambers.

TRAINEESHIPS

No professional traineeship is currently a foreseen for becoming a professional engineer.

CONTINUING EDUCATION

No mandatory continuing professional development courses are foreseen for practicing the profession.

PROFESSIONAL LIABILITY POLICY

Turkish engineers are not required to take out any professional liability insurance policies to practice the profession.