

The Accreditation of Engineering Education in Europe

SEFI Position Paper



**Prepared by the SEFI Task Force
on Accreditation and Quality Assurance**

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Background

During the last decades Higher Education (HE) has been characterised in most European countries by a strong growth in the number of students, and by a large diversification of HE institutions, usually not supported by an increase of governmental budget funding. Engineering Education (EE) has also seen a strong diversification of branches, as a natural consequence of the far-reaching technological development.

As a result of these trends HE has been moving towards “mass studies”, with a strong competition for resources and students, and an obvious risk of lowering the quality of education and research. This fact raises the need to define “standards” of minimum (and/or average) quality criteria in HE, for “first level” and “second level” degrees, as introduced in the Bologna Process, as well as for “long cycle” programmes of studies, as still offered by more traditional institutions.

This need is also motivated by an increasing demand for transparency in order to favour mobility of students and engineers within Europe and beyond, a trend to which more relevance is given by what is generically referred to as “globalisation”.

It is worth remembering, as already done several times, that such “standardisation” should not be understood as an attempt to arrive at a uniform EE throughout Europe, but rather as a tool for transparency and comparability, fully in line with the Bologna Process. This is obviously also the position of SEFI.

In order to avoid misunderstandings, it is also important to agree about a definition of Accreditation. In general, “accreditation” is defined as a declaration by a competent body that a certain study programme satisfies appropriate criteria. More precisely, SEFI agrees with the definition of “Accreditation” given by the EUR-ACE Framework Standards (about which more later): “Accreditation of an engineering programme is the result of a process used to ensure the suitability of that programme as the entry route to the engineering profession”, obtained by “peer review of written and oral information by trained and independent panels including academics and professionals”. It is understood that this must take into account certain specificities of each (large) sector of engineering for which the programme under examination is implemented. Note also that by adopting this definition, this position paper intends to be concerned with the accreditation of study programmes and not with the accreditation of HE institutions.

There is naturally a strong link between accreditation and Quality Assurance (QA). This position paper refrains from expressing opinions about QA methodologies, believing that they have to remain part of the flexibility of each HE institution and of each accrediting body. However, SEFI strongly supports that, whatever methods are used for QA, the evaluation of a study programme must include an evaluation of its Learning Outcomes (LO). This approach maintains the autonomy of each HE institution as far as the corresponding organisation of studies.

Old and recent initiatives

Accreditation of EE has a long history in Europe, beginning with organisations such as the CTI (Commission des Titres d’Ingénieur) in France and the Engineering Council in the UK. A very first initiative to study the feasibility of a European Accreditation System for EE programmes was ESOEPE (European Standing Observatory for Engineering Profession and Education), established in 2000 and later (2006) evolved into the European Network for Accreditation

of Engineering Education (ENAE), which manages the EUR-ACE System and is the owner of the EUR-ACE label. SEFI is a founding member of ENAE.

SEFI has participated and contributed to all Thematic Networks (TNs) dedicated in general to EE, where it has been involved in discussions on accreditation, QA, and mobility, since all such TN have had working groups dedicated to these themes. Work has been going on

starting with the first TN, H3E (Higher EE for Europe, 1998-2000), then E4 (Enhancing Engineering Education in Europe, 2000-2004), TREE (Teaching and Research in Engineering Education, 2004-2007), TREE-diss (2007-2008), and EUGENE (EUropean and Global ENgineering Education, 2009-2012). Three European Workshops on Accreditation of Engineering Programmes (EWAEP) have been organised in 1998, 1999 and 2001. In 2001 the first position paper on Accreditation was published by SEFI.

EUR-ACE (EUROpean ACcredited Engineer) is a system for accreditation of EE programmes, first defined in 2006, that follows the main recommendations of the 2001 SEFI's position paper. In particular EUR-ACE respects the

rich cultural diversity in EE among European HE Institutions. EUR-ACE has been developed with the support of a sequence of EC-DG EAC projects from 2004 to 2010.

SEFI strongly supports the further development of the EUR-ACE System, as it constitutes the first and a successful example of pan-European accreditation system in EE. It must be remembered that the learning objectives of EUR-ACE, defined in the EUR-ACE Framework Standards, are fully compatible with the European Qualification Frameworks, apply to first and second level degrees, as well as "integrated (long) degree" programmes, and can be used also by institutions in countries that have not yet established a National engineering accreditation agency.

SEFI's position on Accreditation in EE

- ✓ One of the main goals of the accreditation of EE programmes is to ensure transparency and hence build TRUST, favouring mobility of students and engineers;
- ✓ A European accreditation system for EE should respect the rich cultural diversity of European HE Institutions;
- ✓ SEFI fully supports the development of the EUR-ACE System, since it is fully compatible with the requirement mentioned in the previous point, being based on cooperation and mutual recognition between existing National accreditation bodies, and being based on LO for its implementation;
- ✓ SEFI also appreciates the fact that the EUR-ACE System has acquired global visibility through contacts with the Washington Accord, the Sydney Accord, and the whole International Engineering Alliance (IEA);
- ✓ SEFI encourages all its HE institutional members to apply for EUR-ACE labels for their programmes;
- ✓ SEFI encourages HE institutional members in countries that have not yet an established EE accreditation procedure to solicit the relevant authorities in this direction, and in the meantime to take advantage of the possibility to let one of the EUR-ACE-authorized agencies accredit (some of) their EE programmes;
- ✓ SEFI wishes to ensure its strong support and involvement regarding ENAEE activities, and in particular supports the idea of submitting to the EC a new application to further advance the European system for accreditation of EE, in which SEFI intends to play an active role.

SEFI is the largest network of higher engineering education institutions (HEIs) and educators in Europe. It is an international NGO created in 1973 to contribute to the development and improvement of HEE in Europe, to reinforce the position of the engineering professionals in society, to promote information about HEE and improve communication between teachers, researchers and students, to reinforce the university-business cooperation and to encourage the European dimension in higher engineering education. SEFI is an international Forum composed of HEIs, academic staff and teachers, students, related associations and companies in 47 countries.

Our activities: Annual Conferences, Ad hoc seminars/workshops organised by our working groups and Task forces, organisation of the European Engineering Deans Conventions, Scientific publications (incl. the European Journal of Engineering Education), European projects, Position papers, cooperation with other major European associations and international bodies such as the European Commission, the UNESCO, the Council of Europe or the OECD. SEFI also participated in the creation of ENAEE, IFEEES, EuroPace, IACEE and of the European Engineering Deans Council.



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