

**SEFI Position
on
the Doctorate in Engineering**

Brussels, 3 May 2007

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Following the Berlin Conference on September 2003, the Doctoral level has been included as the third cycle in the Bologna Process.

At the May 2007 Ministers Conference in London, the progress of the Bologna process will be discussed.

The European Society for Engineering Education (SEFI) issues this statement to underscore its position regarding the third cycle: the Doctorate in Engineering.

1. A Doctorate in engineering must be the result of individual research work

Research activities of Doctoral candidates are an important source of new knowledge in engineering. SEFI emphasizes that a PhD in Engineering is an individual qualification. The research should reflect the individual's research competencies, even if the research work is often embedded in teams and clusters. It is characterized by achieving results beyond boundaries of existing scientific and /or technological knowledge.

2. The Doctorate is regarded as the third cycle of qualification within the Bologna Process

Qualifying as a researcher with a PhD within the Bologna Process should be the result of an individual learning process rather than curriculum-based education. Because of its particular research character, it should be considered as the first step in the research career of Doctoral candidates.

3. Diversity in Doctoral careers must remain possible

The Doctoral career path differs among European countries. In some countries the majority of PhD theses originate from professional activity as scientific co-workers at universities. Other career paths include research activities based on third party funding at universities and research work performed at external research institutions and in industry in co-operation with universities. This diversity must be maintained by all means.

4. Quality of mentoring must be enhanced

The quality of mentoring has an important impact on the quality of the PhD thesis. The mentor should be an experienced researcher, who spends sufficient time on supervision and feedback. Applying the rules of project management to the Doctoral research results in more efficient time management.

5. Clear entrance qualifications must be defined

The quality of a PhD thesis reflects the quality of the candidate. The European Universities of Technology will ensure sustainability of the quality of the PhD theses by defining clear and transparent entrance qualifications to a Doctoral program, which are as a rule based on a theory-oriented Second Cycle degree in a scientific/technological study program.

6. The doctoral degree program should not take the form of a formal curriculum

SEFI acknowledges the necessity of a continuous process of optimization of PhD projects, e.g. by offering integrated and structured PhD programs. Nonetheless, this must not turn them into educational programs. Any credit system should be used only in order to enhance the mobility of Doctoral candidates and the internationalisation of Doctoral Programs, but not lead to formal accreditation. It is the intrinsic the fundamental character of a PhD project that the related study and research environment remains within the autonomy of the universities.

Brussels, 3 May 2007

For SEFI,

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Founded in 1973, SEFI is an international non-governmental organisation under Belgian Law.

SEFI **aims and objectives** are : *to contribute to the development and the improvement of engineering education and of the position of the engineering professionals - to provide appropriate services and to promote information about engineering education - to improve communication and exchanges between teachers, researchers and students in the various European countries -to develop co-operation between educational engineering institutions and establishments of higher technical education - to promote co-operation between industry and those engaged in engineering education - to act as an interlocutor between its members and other societies or organizations - to promote the European dimension in higher engineering education*

The diversity of courses, teaching methods and the freedom of choice for those involved are fundamental qualities and valuable assets that must be preserved.

The Society serves as a **European Forum** and a **service provider** to its 250 institutional members, academic staff, related associations and industry.

SEFI organises **Annual Conferences, seminars and workshops**. Specific themes of engineering education are studied by standing or ad-hoc **working groups and committees**: Curriculum development - Continuing engineering education - Ethics and Engineering Education - Information and Communication technologies - Mathematics and engineering education – Physics and engineering education - Women in engineering - Accreditation of EE (ENAAE) - SEFI Vision statement/Action Plan - SEFI/IGIP Task Force.

SEFI **Publications** are the European Journal of Engineering Education (Bi-monthly as from 2006) – Scientific Journal; News@SEFI (monthly) – Electronic information bulletin and press review; Proceedings of conferences and workshops; SEFI Annual Report.

SEFI Projects

SEFI participates in several projects in the field of higher engineering education, notably in the frame of the *Socrates* and *Leonardo* - LLP EU Programmes, or in cooperation with other international bodies and associations.

SEFI Awards

The highest distinction that SEFI can bestow, is the **Leonardo da Vinci Medal**, awarded by the members of the Administrative Council to living persons who have made an outstanding contribution of international significance to engineering education. In recognition of meritorious service to engineering education in Europe, SEFI awards a **Fellowship** to some of its active individual members.

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