„Accreditation of Joint Degree Programs“

DAAD-Conference on „Promoting Internationalisation and Global Education: Joint and Double Degree Programs in Engineering Education between USA, Canada and Germany“

Chicago, 16-18. June

ASIIN

Akkreditierungsagentur für Studiengänge der Ingenieurwissenschaften, der Informatik, der Naturwissenschaften und der Mathematik

Freie Universität Berlin

DAAD Deutscher Akademischer Austausch Dienst German Academic Exchange Service

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The European Perspective: Joint Degree Programs and the Implementation of the Bologna Process

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General Objective: Completion of the EHEA until 2010; Creation of European knowledge society characterized by high mobility and permeability, lifelong learning

- ✓ **the creation of a system of easily readable and comparable degrees**
- ✓ **the creation of a degree system structured in three cycles, undergraduate, graduate and doctorate**
- ✓ **the introduction of a credit point system (like ECTS)**
- ✓ **the promotion of mobility**
- ✓ **the promotion of a European dimension in Higher Education**
- ✓ **the strengthening of European cooperation in Quality Assurance / Accreditation**

→ **Joint Programs / Joint Degree Programs are particularly suited to accomplish these goals; seen as both potential catalyst and prototype for the EHEA**

The context for the accreditation of (joint) engineering programs in an European landscape

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1.) Characterized by mostly public higher education systems; institutions and programmes derive their formal degree-awarding capacity from the state. Because of the diversity of both degrees and institutions, public knowledge about their quality is not sufficient across national borders and even sometimes within one country.

2.) Problem of a growing non-official higher education sector and the phenomenon of trans-national education with a lack of regulatory codes.

3.) In some countries the academic degree constitutes the automatic admission ticket to the job market whereas in others additional prerequisites are demanded to acquire professional status (e.g. registered engineer)

4.) Degree and institutional diversity is matched by a great variety of national quality assurance and accreditation systems (some of them are national, others decentralized). There are few mechanisms in place to recognize the results of an evaluation and accreditation.

Typical options for European HEI systems

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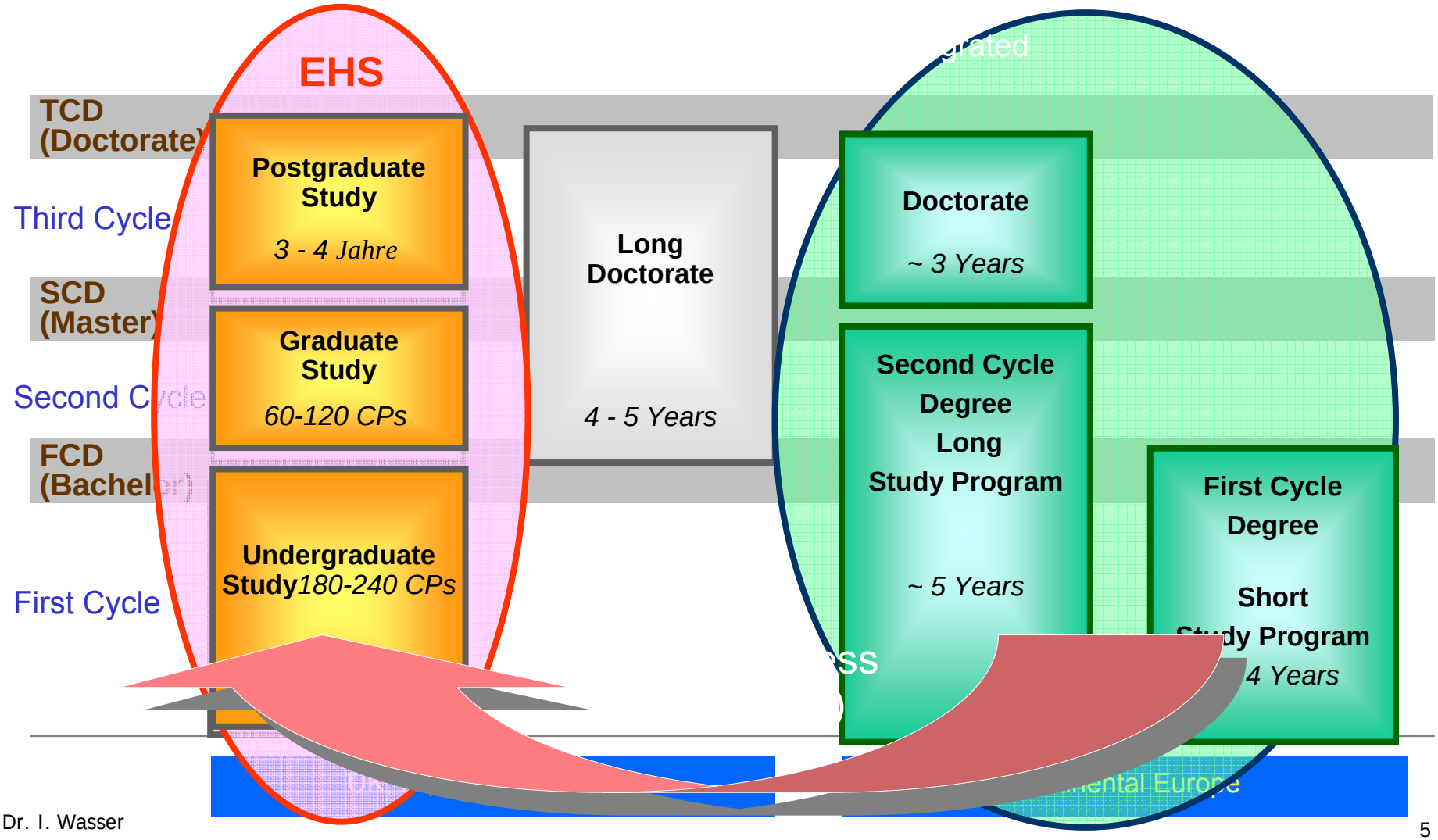

University Diplomas

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- OBTAIN A PROSPEROUS FUTURE, MONEY-EARNING POWER, AND THE PRESTIGE THAT COMES WITH THE DEGREE YOU HAVE ALWAYS DREAMED OF.
- (NON-) ACCREDITED UNIVERSITIES BASED ON YOUR PRESENT KNOWLEDGE AND LIFE EXPERIENCE.
- If you qualify, no tests, study, books or exams.
- We have Bachelor's, MBA's, Doctorate & PhD degrees available in your field.
- CONFIDENTIALITY ASSURED
- CALL NOW TO GET YOUR DIPLOMA WITHIN 2 WEEKS
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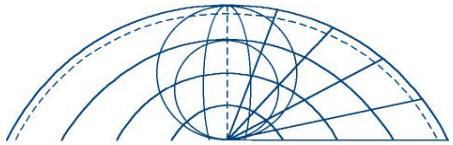
Variety of Academic Titles in Europe for Engineers



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Akademiingeniør
Bachelor of Arts
Bachelor of Engineering
Bachelor of Science
Civilingeniør
Civilingenjör
Diplom-Ingenieur
Diplom-Ingenieur ETH
Diplom-Ingenieur (FH)
Diplomi-Insinöör
Diplomirani Inženir
Doktor-Ingenieur
Dottore in Ingegneria

Engenheiro
Europa-Ingenieur
Ingenieur (grad.)
Ingeniør
Inginer
Insinööri
Ingeniero Químico
Ingeniero Superior
Ingeniero Técnico
Ingénieur civil
Ingénieur diplomé
Ingénieur industriel
Ingénieur technicien

Inženyr
Inžinier
Inżynier
Magister Inżynier
Master of Arts
Master of Engineering
Master of Science
Okleveles mérnök
Okleveles üzemmérnök
Sivilingeniør
Teknikfræðingur
Teknikumingeniør
Verkfræðingur

Types of accreditation

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1) Accreditation with the seal of the German Accreditation Council

2) ASIIN accreditations / ”substantial equivalency”-accreditations

3) “EUropean ACcredited Engineer”/EURO-Bachelor + EURO-Master Chemistry/EURO-INF

Procedural rules for the accreditation of joint programs/joint degree programs

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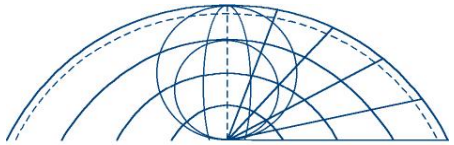
Accreditation with the seal of the German Accreditation Council

Limitations:

- **as a rule, a degree program culminating in a degree from a German HEI may only receive ASIIN accreditation with the seal of the Accreditation Council if at least half of the coursework was completed at a German HEI and the degree was awarded by that HEI.**
- **Exception to this general rule: three-semester international Master's degree programmes funded by the German Academic Exchange Service (DAAD). They involve spending a semester at a German HEI and a foreign partner HEI respectively. The Master's thesis is written in the third semester, which may also be spent abroad. This "one third/two thirds" model is also eligible for accreditation in principle. However, each Master's thesis written at a foreign partner HEI must involve a professor from the German HEI as a co-supervisor with equal rights from the outset (including the selection of the thesis topic).**

Procedural rules for the accreditation of joint programs/joint degree programs



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With regard to the quality assurance of the programme contribution by the cooperating foreign HEI, there are two options available:

- in case, the corresponding foreign programme has been accredited by an acknowledged domestic accreditation agency (in the future, the ENQA register of agencies, which adhere to a code of good practice, will constitute such a data base), the results are accepted and there is no further check
- in the adverse case, the program coordinators and staff of the foreign HEI are asked to participate in the on-site review in Germany or the peer group (subgroup) will travel abroad to visit the institution and check into the quality of the programme. In both instances the information with regard to the corresponding foreign programme must be provided with regard to the ASIIN guidelines (descriptions of the curricular modules, qualification of the teaching staff etc.).

The Accreditation procedure for the dual degree programs between the HAW Hamburg and the USST Shanghai – a Case study

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01- 07/2004

Application for the ASIIN-accreditation for the bi-national bachelor programs for mechanical engineering and electrical engineering offered by the USST Shanghai and the HAW Hamburg.

Presentation of a **written self report** by the persons in charge of the program describing the two study programs and the responsible institutions.

09/2004

On-site-visit of the peergroup:

2 professors for mechanical engineering from German HEI

2 professors for electrical engineering from German HEI

2 representatives with substantial professional and managing experience with companies working in the fields of engineering in China and Germany

11-12/2004

Assessment of the **report of the auditors** within the two responsible **technical committees** of the ASIIN.

Assessment of the report of the auditors and the comments of the technical committees within the accreditation commission of the ASIIN. Final decision by the **accreditation commission** to grant the accreditation for the two bachelor programs under conditions to be fulfilled within one year.

The information base for the accreditation of the USST-programs

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With the help of the self report of the USST Shanghai and the HAW Hamburg as well as from the meetings during the on-site-visit the auditors gained an information base showing comparable quality with regard to the ASIIN standard-procedure

The auditors evaluated information on:

- **reasons** for establishing the programs, **demand** for the study programs by students and employers
- **educational objectives** of the programs
- **structure** and **duration** of the programs
- formal aspects like **degree** awarded, **study and examination regulations**
- **admission requirements** for the programs
- **modularization**, **credit point system** and **work load** for students
- **curricula**, **contents**, **internships** and **teaching methods**
- **Institutional and organizational environment** including the co-operation agreements between the two universities and well as the financing of the programs as well as the qualification of the **teaching staff**
- internal **quality assurance measure** of the two universities involved

Consistencies in comparison to the ASIIN-rules

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When comparing the two Chinese-German study programs from USST and HAW in mechanical and electrical engineering to the ASIIN standards, the auditors and the deciding bodies within ASIIN found substantial consistencies so that the accreditation could be granted.

The major features to ensure comparability were:

- defined educational objectives and profiles
- structure and contents of the curricula with a significant share of mathematics, natural sciences, engineering basics and deepening, engineering applications
- established credit point system (30 student work hours = 1 cp) and modularization of the curricula
- technical equipment and laboratory facilities for student training in engineering applications
- transparent formal regulations for studying, examinations, access requirements, degrees granted
- scientific environment, formally fixed co-operations and qualification of the teaching staff involved in the program

Differences in comparison to the ASIIN-rules

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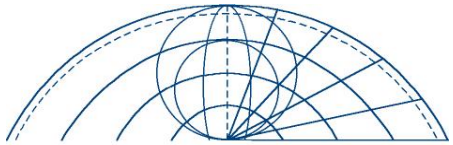
Some structural differences between expectations underlying the ASIIN-rules and the features of the Chinese-German study programs were observed by the auditors during the accreditation procedure, too. They did not impede the accreditation thanks to the wise handling by the responsible universities.

The major discussion points were with this regard:

- the lack of teaching in specific fields of natural sciences, mathematics and engineering basics
- the workload for the students - which seemed significantly higher than in Europe – and the lower share of self-study by the students in the single courses
- the formal approbation of the study programs by the respective national supervisory bodies
- the availability and contents of the company placements of students, that should assure on the job training in engineering activities
- the enhancement of internal quality assurance measures leading to continuous improvement of the study programs and their outcome

Experiences and lessons learned for the accreditation process



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Organizational challenges

- extension of the standard duration of on-site-visits up to three days needed due to the necessity of translations
- need of translators enabled in technical and engineering fields and enjoying the confidence of the applicant university and the auditors
- need of mixed teams of Chinese-German auditors, experienced in the respective communication culture and engineering approach

Professional challenges

- to deal with different approaches to internal quality assurance and the participation of students in internal evaluation measures
- alignment of the respective traditions in the fields of engineering education and enhancement of the application oriented training of students
- revision of the accreditation standards with regard to differing national rules and traditions (e. g. admission, credit points, workload) without neglecting the quality expectations

The EUR-ACE Project and its potential for the accreditation of dual degree programs

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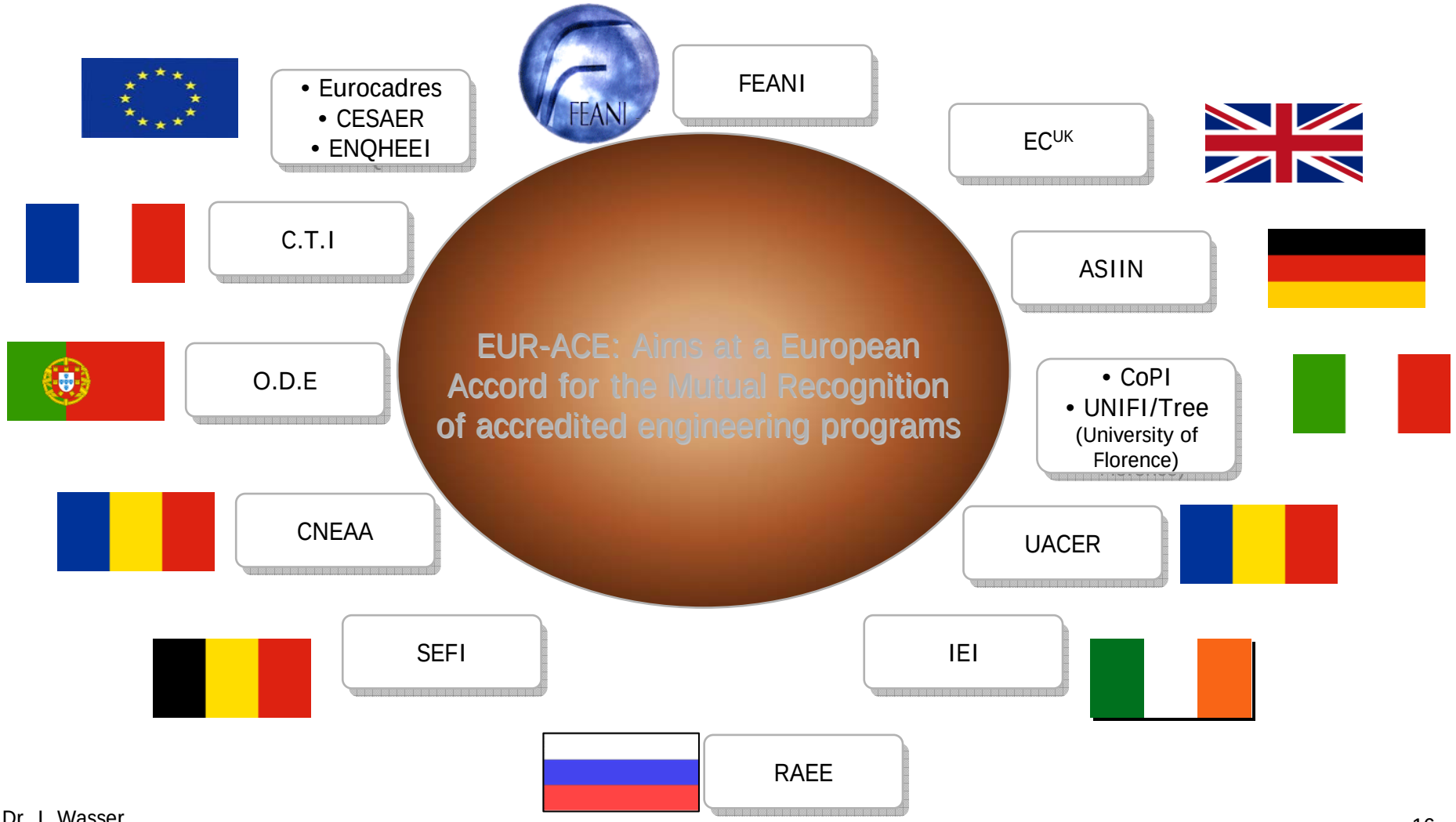

What is the central purpose of the EUR-ACE project?

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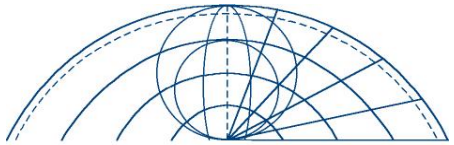
In order to overcome the difficulties in the mutual recognition of academic and professional qualifications, and facilitate the mobility and trans-national acceptance of engineers

EUR-ACE has on the 31.12.2005 proposed **a framework for setting up a [single] European system for accreditation of engineering education at the First Cycle and Second Cycle level (as defined within the Bologna process)**

contributing thereby to establishing the European Higher Education Area ....

The EUR-ACE Project: Objectives



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The EUR-ACE project is a contribution to the realization of the European Higher Education Area. It aims at proposing a framework with the following main aims:

- to provide an appropriate “European label” to the graduates of the accredited educational programmes in Europe, while distinguishing between a first and second study cycle.
- to facilitate mutual recognition agreements
- to facilitate recognition by the competent authorities, in accord with the EU Directives. An intensive networking system with the FEANI index is planned.
- to improve the quality of educational programmes in engineering.

EUR-ACE Project: What has been accomplished? (I)

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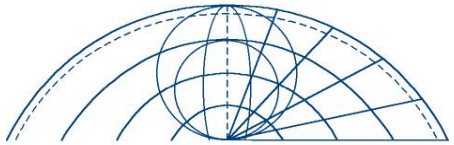
- ✓ EUR-ACE has reviewed criteria and standards already existing in Europe for FC and SC engineering degrees, compiling a background document: **"Overview: Accreditation Procedures and Criteria for Engineering Programmes in Europe**".

- ✓ The EUR-ACE- partners meanwhile have reached a consensus concerning Outcome-Standards for first and second cycle accredited engineering programmes. They are valid for all branches of engineering. On the basis of 6 indicators (Knowledge and Understanding, Engineering Analysis, Engineering Design, Investigations, Engineering Practice, Transferable Skills), the qualification and capabilities competences of graduates are described.

- ✓ An Agreement concerning the number of Credits assigned to the two cycles has been reached : a graduate from a FCD must have no less than 180 credits, a graduate from an accredited SCD no less than 240 credits.

EUR-ACE Project: What has been accomplished? (II)



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- ✓ The criteria and quality requirements for the accreditation of engineering programs have been defined, considering the following items (Needs, Objectives and Outcomes; Educational Process; Resources and Partnerships; Assessment of the Educational Process; Management System).
- ✓ The 14 partners have reached a consensus with regard to "Guidelines for the Evaluation of Individual Requirements (acceptable; with prescriptions; unacceptable) and for programme accreditation (accredited without reservation; accredited with prescriptions; not accredited).
- ✓ Consensus on Procedures for Programme Accreditation (composition of accreditation team, duration and structure of the visit; verification and validation of the report; decision on the accreditation; publication (template)

All of these agreements are of great value when it gets to accredit dual degree programs

The agreement of ASIIN with the Commission des Titres d'Ingenieurs

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In this agreement ASIIN and C.T.I. have agreed to cooperation in the accreditation of joint binational german-french study programs.

ENAEE European Network for Accreditation of Engineering Education

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Founding Date:

- Initiated on October 7, 2005, in Berlin, Germany
- Statutes to be ratified in February 2006

Founding Members:

- FEANI
- Engineering Council UK (ECUK)
- Commission des Titres d'Ingenieurs (CTI)
- ASIIN
- Ordem dos Engenheiros (OE)
- Conferenza dei Presidi delle Facoltá di Ingeneria Italiane (CoPI)
- Uniunea Asociatilor Inginerilor Constructori Romania (UAICR)
- Societe Europeenne pour la Formation d'Ingenieurs (SEFI)
- Engineers Ireland (EI)
- Russian Association for Engineering Education (RAEE)
- Conseil des Cadres Europeennes (EUROCADRES)
- University of Florence (UNIFI)

GOALS

→ European Accord with regard to the mutual recognition of engineer degrees

→ FEANI has decided to accept the „EUR-ACE"-accreditation for the FEANI index and the „EURO-ING" register.

The members of the Washington Accord

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Provisional Members

GERMANY
Accreditation Agency for Study Programs in Engineering, Informatics, Natural Sciences and Mathematics (ASIIN)

KOREA
Accreditation Board for Engineering Education of Korea (ABEEK)

MALAYSIA
Engineering Accreditation Council of Malaysia (EAC, MALAYSIA)

SINGAPORE
The Institution of Engineers, Singapore

CHINESE TAIPEI
Institute of Engineering Education Taiwan (IEET)

Members :

Australia (Institution of Engineers, Australia)
since 1989

Canada (Canadian Engineering Accreditation Board of the Canadian Council of Professional Engineers)
since 1989

Hong Kong (Hong Kong Institution of Engineers)
since 1995

Irland (Institution of Engineers of Ireland)
since 1989

Japan (Japan Accreditation Board for Engineering Education)
since 2005

New Zealand (Institution of Professional Engineers, New Zealand)
since 1989

South-Afrika (Engineering Council of South Africa)
since 1999

United Kingdom (Engineering Council)
since 1989

USA (Accreditation Board for Engineering and Technology)
since 1989

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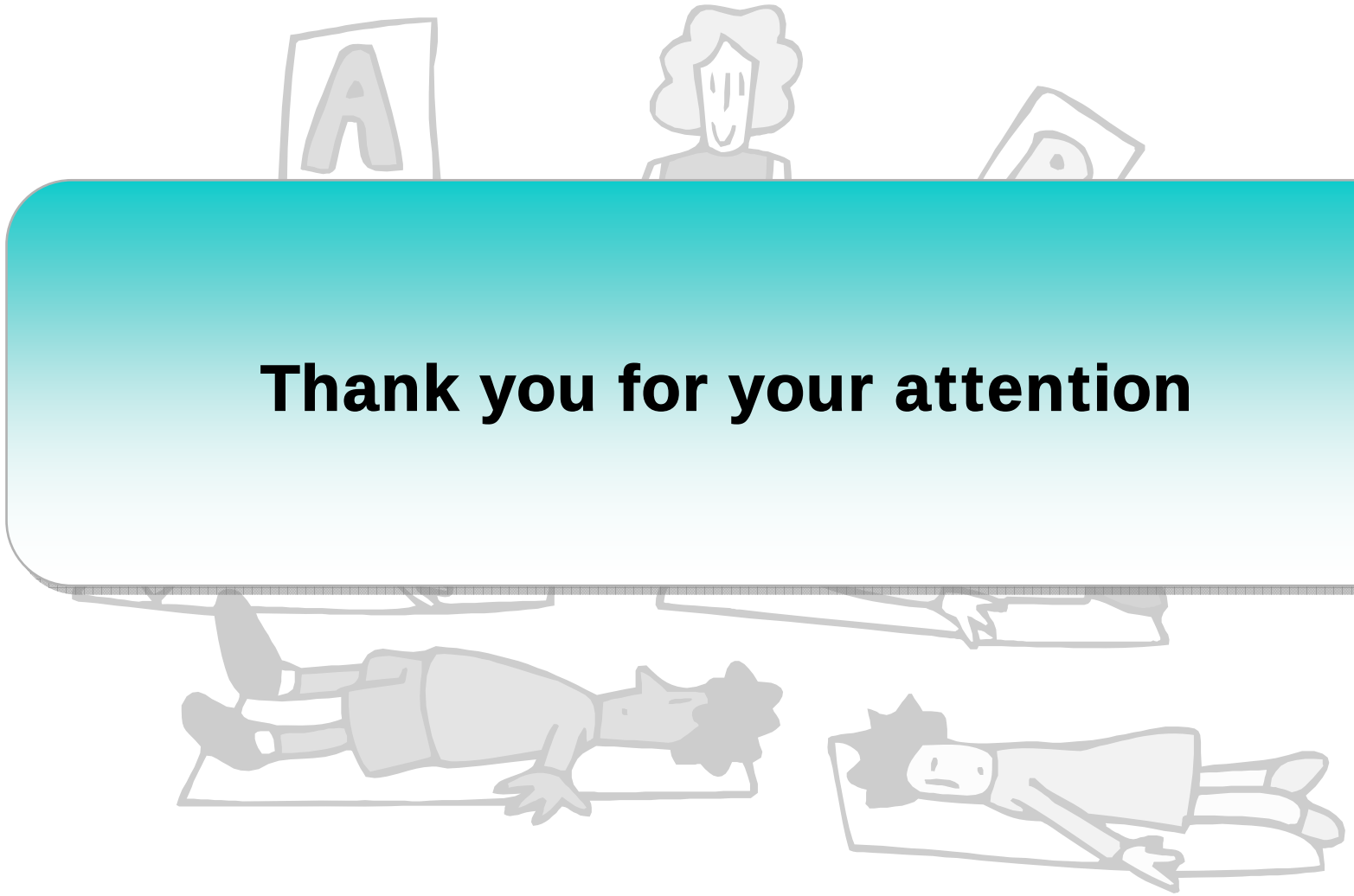

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