



**ORDEM DOS ENGENHEIROS  
ENGINEERS PORTUGAL**

**QUALITY ASSESSMENT TO AWARD  
THE EUR-ACE LABEL  
(FIRST CYCLE - BOLOGNA PROCESS)**

**APPLICATION FORM  
FOR INSTITUTIONS  
(For Course applications)**

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## INTRODUCTION

ENAAE (European Network for Engineering Accreditation) was founded on 8 February 2006, at the end of the first EUR-ACE project, by 14 European Associations concerned with engineering education. It stemmed from **ESOEPE**, the “*European Standing Observatory for the Engineering Profession and Education*”, that had been established on 9 September 2000 with the purposes of:

a) Building confidence in systems of accreditation of engineering degree programmes within Europe;

b) Facilitating exchange of information;

c) Developing voluntary agreements on accreditation of engineering educational programmes and recognition of engineering qualifications and;

d) The development of standards for competency requirements of graduate engineers.

Members of ENAAE are agencies and professional organizations with an interest in the education and formation of engineering professionals.

ENAAE is the European body responsible for awarding authorization to accreditation agencies to award the EUR-ACE® label at first and second cycle to engineering programmes which they have accredited.

In April 2004 ESOEPE was instrumental in preparing and submitting to the European Commission the application for the (first) EUR-ACE project (2004-2006).

In October 2005, In view of the emergence of EUR-ACE, it was decided to transform ESOEPE from an “observatory” into the registered international not-for-profit Association ENAAE, that was formally established on 8 February 2006 in Brussels.

The first ENAAE General Assembly took place on 30 March 2006; since then, Assemblies have been held regularly each year.

The implementation of the EUR-ACE system started in 2007, with the award of the first EUR-ACE labels. ENAAE is the European body responsible for awarding authorization to accreditation agencies to award the EUR-ACE® label at first and second cycle to engineering programmes which they have accredited.

The founder members of ESOEPE in September 2000 were: UK: EC (now EngC); FR: CTI; DE: ASII (now ASIIN); PT: OE (Ordem dos Engenheiros); IT: CoPI; EU: E4 (now TREE -Teaching and Research Engineering in Europe)-no member any more.

The EUR-ACE label is distinguished into “EUR-ACE Bachelor” (“European Accredited Engineering Bachelor”) and “EUR-ACE Master” (“European Accredited Engineering Master”) respectively when the programme is accredited at the FC or SC level.

# 1. LIST OF PREREQUISITES AND REQUISITES

PREREQUISIT	OBJECTIVES	EVIDENCE
PR-1- Legitimacy of the functioning of the course	To proof the legitimacy of the functioning of the course.	Announcements in official organs, formalized decisions, authenticated documents and minutes of meetings.
PR-2- Organization of the process	To consider the organization of the submitted information.	To confirm the existence of an index in all documents; to verify if all the requested information has been provided.
PR-3 – Qualification awarded	To evaluate the degree obtained by the graduates who attend the Course.	

REQUISITE	OBJECTIVES	EVIDENCE	
1 – Course framework	1.1- Strategy of the Higher Educational Institution regarding Education in the area of the Course / Educational needs of the stakeholders and market niches / Financial Resources  (REQUISITE 1)	To verify the School's understanding about the characteristics of its offers in the Course market and the identification of potential market niches to attain. To verify if the School Identify Educational needs consulting relevant industry and labour market organisations and other stakeholders and verify if this is done in a way to facilitate the programme aims in terms of professional profile. Sustainability and Financial Resources.	To characterize the offer provided by the School and its integration in the general context of the teaching projects competing with it. Identification of educational needs of the labour market and other stakeholders. Empregability.
	1.2- Course evolution (REQUISIT 2)	To verify the changes in the functioning of the Course in the recent past and to identify the shown tendencies.	List of changes in the functioning of the Course, new designations and respective justifications.
	1.3- Cooperation with other institutions (REQUISIT 3)	To identify the School's links in the Course's thematic areas with national and international Institutions in the scientific, pedagogic and professional ambit.	List and content of protocols, partnerships and collaboration with external entities as well as the effect of such links.
2 – Course development / Teaching and learning Process	2.1- Specific competences and minimum requirements (REQUISIT 4)	To verify if the programme aims have been developed in terms of professional profiles of the graduates. To identify the competences more closely related to the professional practice and to verify its coherence with the goals of the Course. To verify the satisfaction of the minimum requirements.	Set of programme aims. Substantiated characterization of the specific competences developed in the Course and its justification through the Course Plan. Detailed evidence of the satisfaction of the established minimum requisites.
	2.2- Curriculum structure and pedagogic programme / Planning and Management of the Learning process (REQUISIT 5)	To verify if the sequence and the content of the themes dealt with ensure a conducting line of transmission of knowledge without repetitions or gaps. To verify if the totally of the learning outcomes of the modules accumulate to constitute the programme outcomes. To verify if the learning process has been planned in order to enable students to achieve the programme outcomes in expected time. To verify how the learning process is managed by the School.	Tables that show the curricular structure and the articulation of the themes; minutes of the Course coordination meetings. Characteristics of the course units (ECTS, learning outcomes, pre-requisites, didactical material, assessment of students learning. Timetable of didactic activities and examinations. Documentation used to control the learning process and students learning assessment.

REQUISITE		OBJECTIVES	EVIDENCE
	2.3- Characterization of the content of academic activities (REQUISIT 6)	To identify the obtained formation with the attendance of the subjects and of all the other academic activities developed in the Course.	Demonstration of the coherence between the pedagogic goals, the presentation to the students of the themes treated and the exams carried out. Presentation of exams papers and characterization of project and laboratorial works.
	2.4- Outcomes (REQUISIT 7)	To identify the results of the given training and to verify if such training has had effective results in the students education. To verify if the programmes outcomes are consistent with the EUR-ACE Programme Outcomes for accreditation and with the established programme aims.	Set of programme outcomes. Real projects and problem solving, group dynamic, games with calibrated models, persistence tests, field work, action in hostile environment, case studies, oral and written communication in Portuguese and foreign languages.
3- Teaching Staff	3.1- Teaching adequacy (REQUISIT 8)	To verify the suitability of the training of the teachers, their experience in Engineering activity, their stability at the service of the School and their permanence in the School.	Characterization of the training of the teachers in their teaching area, maps with the teachers' seniority in the School and survey of their professional qualification.
	3.2- Involvement of the teachers in the running of the Course (REQUISIT 9)	To verify if the School attends to the anxieties, worries and needs of the teachers.	Credible data on the presence of teachers in the School; evidence of the effects of the inquiries to the teachers, synthesis reports about the internal information, activity reports, minutes with decisions.
4- Students	4.1- Admission, monitoring and evaluation of the students (REQUISIT 10)	To verify the existence of coherence between what is intended to teach, the demand that is made to the students and their ability to grasp the intended goals.	Characterization of the students who enter the Course, list their school success by subject, data on their complementary training activities.
	4.2- Evaluation of the Course by students, recent graduates and employers/ Partnerships for training periods and mobility (REQUISIT 11)	To verify if the School attends to the students' expectations and worries about their professional performance. To verify if exist partnerships which enable training periods outside the university and partnerships which enable international study mobility periods.	Conclusions about the results of the Inquiries and documental proofs of the decisions made. List of partnerships enabling training periods and international mobility periods.
5- Facilities and Pedagogic Resources	5.1- Suitability of premises (REQUISIT 12)	To verify the functionality, capacity and quality of the premises.	Only verified at the School visit.
	5.2- Pedagogic resources/ (REQUISIT 13)	To prove the existence of equipment and other resources and working tools available for the students.	Only verified at the School visit.
6- Ensuring Quality	6.1- Course monitoring (REQUISIT 14)	To verify the substantiation of the strategy for improvement of the functioning of the Course and the performance-related information system	Data, ratios, minutes, information, instructions, procedures that support the quality improvement strategy.
	6.2- Corrective actions and quality plan (REQUISIT 15)	To verify if the evaluation processes of the OE, FUP, APESP, CCISP FCT have any teaching improvement effect.	Synthesis reports of information provided by teachers, activity reports, minutes, information, instructions, procedures and quality improvement plan.

## 2. LIST OF CRITERIA EMPLOYED AND INFORMATION REQUIRED FOR COURSE ASSESSMENT

### 2.1. PREREQUISITES

#### PREREQUISITE 1 – LEGITIMACY OF THE FUNCTIONING OF THE COURSE

***Proof of the legal situation must form part of the documentation handed in as part of the application process. As such the following should be provided:***

- I. Detailed information concerning the legality of the functioning of the Course in accordance with the internal regulations of the academic institution or those external to it, with bodies under ministerial guidance, with the law or with the regulations regarding the submission of the application.
- II. Contractual establishment and proof of the type of service provided and any responsibilities assumed in those cases where there are protocols involving service provision by some academic institutions for others (such as is the current situation with military institutions).

#### PREREQUISITE 2 – ORGANISATION OF THE APPLICATION PROCESS

***The application should be complete, organized for easy reading and indexed, numbering the information supplied and identifying the electronic pages where supplementary information may subsequently be obtained.***

***For this purpose, the following should be observed:***

- I. Correct organization of easily browsable documentation, to be handed in to the Portuguese Institution of Engineers (OE).
- II. Identification of the member of staff responsible for selection of the information presented.
- III. Specification of all the components which form part of the application process in the official letter which accompanies the application. Existence of an index in every document.

#### PREREQUISITE 3 – QUALIFICATION AWARDED

***Graduation must bring added value through professional recognition of competences.***

***Regarding this objective, the following should be provided:***

- I. Identification of the qualification awarded following attendance of the programme.

## 2.2. REQUISITES

### 2.2.1. COURSE FRAMEWORK (R1, R2, R3)

REQUISITE 1 – STRATEGY OF THE HIGHER EDUCATIONAL INSTITUTION / EDUCATIONAL NEEDS OF THE STAKEHOLDERS AND MARKET NICHES / FINANCIAL RESOURCES

***An Engineering Programme must be sustained with respect to the financial aspects, professional interest and the satisfaction of social needs. The reasons for the sustainability of the course must be clearly expressed and documented, based on objective and credible information.***

***For this purpose the following should be provided:***

- I. Self evaluation of strengths and weaknesses of the Higher Educational Institution within the context of other similar courses available.
- II. Identification of the objectives of the programme and clarification of what differentiates the Course from the aforementioned courses.
- III. Analysis of the marketplace perspective of the Higher Educational Institution as well as of the opportunities to be taken advantage of and the position it has adopted with regard to the threats with which it is faced.
- IV. Identification of educational needs of the labour market and other stakeholders. Employability.
- V. Analysis of sustainability of the programme regarding the financial, pedagogic and institutional aspects.

REQUISITE 2 – COURSE EVOLUTION

***The restructuring of an Engineering Course must be in line with a previously diagnosed need, and, therefore, has to be well justified.***

***For this purpose, the following should be provided:***

- I. Description of the evolution of the programme in the last 5 years, specifying the main restructuring, changes of name and objectives behind each of these alterations and the date on which they came into force and the reasons for their adoption.
- II. Information on the year in which the first graduates after the latest restructuring are/were to graduate.

REQUISITE 3 – COOPERATION WITH OTHER INSTITUTIONS

***The list of partnerships with other national and foreign institutions is one of the objective ways of gauging the prestige of the institution being evaluated and it is thus important to carry out detailed identification of these partnerships, their objectives, participants and results already obtained.***



***For this requisite, the following should be provided:***

- I. List of the academic and professional bodies with which the school has formalized links with, and also the types of cooperation agreements which have been established for technical and scientific purposes and those where only an institutional agreement exists

## **2.2.2. COURSE DEVELOPMENT / TEACHING AND LEARNING PROCESS (R4, R5, R6, R7)**

### **REQUISITE 4 – MINIMUM REQUIREMENTS**

***The definition of the specific areas which are minimally required for training in a given speciality is an essential element of the formulation of the programme.***

***Is important to verify if the programme aims have been developed in terms of professional profiles of the graduates.***

***As such, the following should be provided:***

- I. Justification with regard to satisfying minimum course requirements.
- II. Set of programme aims.

### **REQUISITE 5 – CURRICULUM STRUCTURE AND PEDAGOGIC PROGRAMME /PLANNING AND MANAGEMENT OF THE LEARNING PROCESS**

***The curricular structure must lead to coherent articulation between subjects through a pedagogically appropriate sequence of subjects subordinated to the specific skills, so as to mould the Course within a pedagogically structured process.***

***Is important that the totally of the learning outcomes of the modules accumulate to constitute the programme outcomes. The learning process must be planned in order to enable students to achieve the programme outcomes in expected time.***

***In order to assess this requisite, the dossier should include:***

- I. Characteristics of the course units (ECTS, learning outcomes, pre-requisites, didactical material, assessment of students learning.)
- II. Presentation of the programme, establishing a connection between disciplines and scientific principles, evidencing that it is in accordance with one of the specialities defined by the Portuguese OE.
- III. Identification of the diversity of learning activity, viz. - laboratory and workshop training; presentation of problems for synthesis and integration of knowledge in disciplines for conception and design; field work, seminars and industrial training.
- IV. Records of study visits, seminars and talks given by visiting speakers, whose role in training is fundamental in order to provide knowledge of the professional world which exists outside the Higher Education Institution.

- V. Information on the annual visitors' programme at the beginning of the academic year, on its advertising and on how students participation in visits is taken into consideration in their grading.
- VI. Timetable of didactic activities and examinations.
- VII. Information on rules for changing the natural sequence of disciplines and grounds to expel a student.

#### REQUISITE 6 – CHARACTERIZATION OF THE CONTENT OF ACADEMIC ACTIVITIES, PEDAGOGIC GOALS AND TOOLS

***Pedagogic activities should be described based on the pedagogic objectives which are seen to provide added values and these should be compatible with the themes dealt with, the pedagogy used, the tools employed and the evaluation carried out. The curricular enrichment obtained through innovative pedagogic processes must be shown to the Assessment Commission with emphasis put on showing their objective results.***

***For this purpose, the information supplied should highlight and allow to assess:***

- I. Pedagogic objectives:
  - I.I. In disciplines aiming at knowledge integration - the capacity to conceive, dimension or optimize technical and economic aspects and propose solutions;
  - I.II. In applications oriented disciplines - the capacity to run tests, to interpret results and to take conclusions about quality, feasibility or technical-economical interest of the proposed solutions;
  - I.III. In general - developing of competencies to diagnose, optimize and propose innovative solutions in accordance with the social reality and environmental protection requirements;
- II. Communication skills.
- III. Behaviour within group work.
- IV. Criteria for the selection of seminar subjects and talks and assessment of the students' reports.
- V. Informatics tools employed
- VI. Promotion of the use of foreign languages.
- VII. Laboratory work
- VIII. Students stimulation to solve problems requiring perseverance.
- IX. Suitability of assessment methods with relation to pedagogic objectives.

#### REQUISITE 7 – OUTCOMES

- I. To verify if the outcomes, as presented in Section 4 are fulfilled.
- II. To verify if the programmes outcomes are Consistent with the established programme aims.

### 2.2.3. TEACHING STAFF (R8, R9)

#### REQUISITE 8 – TEACHING ADEQUACY

***The description of the training of all members of staff in the areas they teach is fundamental regarding the evaluation of the conditions under which teaching is carried out.***

***For this requisite, the dossier should provide:***

- I. Identification of the level and type of research activity of the academic staff.
- II. Identification of the situations in which the Academic Staff are carrying out activities in the field of Engineering, related with the subjects they are teaching, outside the Higher Education Institution.
- III. Identification of members that occupy important posts in companies and non-academic institutions connected with the practice of Engineering and those who carry out academic activities in other Engineering Schools.
- IV. Evaluation of suitability of teachers' training, not only in the academic area in which they are lecturing but also in the areas of pedagogy and student assessment.
- V. Analysis of the Teaching Staff's teaching load and of the availability to provide support to the students as well as to participate in academic life and cooperate with students in the preparation of visits, seminars and other technical and cultural events.
- VI. Record of the rotation of the Teaching Staff within the Higher Education Institution as well as of the actual time physically present in each of the Institute's premises, so as to enable an evaluation of the stability and assiduity of the Teaching Staff.
- VII. Identification of the number of teaching staff enrolled in the OE.

#### REQUISITE 9 – INVOLVEMENT OF THE TEACHERS IN THE RUNNING OF THE PROGRAMME

***There has to be clear evidence of the opinions shown by teachers for this issue to be satisfactorily dealt with and this must be documented with proposals, minutes, decisions, actions and numerical data. There must be routine procedures established to provide a forum to receive the opinions and proposals of the teaching staff.***

***For this purpose, the dossier should provide evidence of the influence of teaching staff in:***

- I. Evaluation of the abilities and preparation of the candidates for higher education, diagnosis of the main gaps on the part of these candidates and suggestion of remedial measures for the difficulties which have been detected.
- II. Evaluation of the quality and functionality of the premises and their corresponding suitability for teaching.
- III. Coordination between the agents that participate in the academic activity, recorded through minutes, with conclusions showing the principal needs identified by the teaching staff.

**Complementary, information should be supplied evidencing that:**

- IV. Regular analysis based on surveys or reports by the teaching staff are object of reflection on the part of the institution's senior figures, who should specify a set of procedures, hierarchically ordered in terms of priorities, to resolve any problems detected.
- V. Other aspects which affect the motivation of the teaching staff (such as questions concerning remuneration; the manner in which teaching staff is hired and opportunities to progress along an academic career; the premises which they use; technical and administrative support) must be concern of the institution governance bodies.

## **2.2.4. STUDENTS (R10, R11)**

### **REQUISITE 10 – ADMISSION, MONITORING AND EVALUATION OF THE STUDENTS**

***The conditions of entry must match the demands placed on the students during attendance on the course. Student Failure should be seen as indicating inefficacy of the educational system.***

***Students must be encouraged to become part of the Higher Education Institution during the course, come into contact with the realities of engineering, establish links with people, entities and locations which can motivate them professionally and complete their humanistic training.***

***This requisite should be dealt with in the report, by the supplying of information on:***

- I. Admission criteria of the candidates to the Engineering Higher Education Course.
- II. Definition of the prior knowledge which the students need in order to attend the programme.
- III. Quantified data and conditions under which students can transfer from other Higher Education Institutions, as well as the results in terms of academic success.
- IV. Regular information for the students about the running, regulations and procedures of the Higher Education Institution, through posting this information on the Institution's web page.
- V. A Active encouragement by Higher Education Institution of attendance of foreign language courses and professional training during holiday time and student exchanges with other Higher Education Institutions."
- VI. Follow up and periodic assessment of students' expectations by the Academic Institution.
- VII. Involvement of students in academic, cultural and sporting activities.
- VIII. Evaluation of students' general performance.

### **REQUISITE 11 – EVALUATION OF THE COURSE BY STUDENTS, RECENT GRADUATES AND EMPLOYERS / PARTNERSHIPS FOR TRAINING PERIODS AND MOBILITY**

***There must be clear evidence of results stemming from an analysis of surveys. These can be in the form of minutes, proposals, decisions and real action. There are, nevertheless, factors that make a direct extrapolation of the quality of teaching in a given Higher Education Institution impossible, namely those linked with the graduates' personal development as well as the opportunities given to them.***

***For this requisite, evidence should be supplied on:***

- I. Students' evaluation of teaching staff, their pedagogic ability and the bond they create with students.
- II. Control system of these pedagogic evaluation tests.
- III. Disclosure of the results of students' evaluations of the teaching system's performance with the focus on positively influencing teaching standards.
- IV. List of partnerships enabling training periods and international mobility periods.
- V. Evaluation of the course by recent graduates, pointing out the most significant professional problems subsequently encountered.
- VI. A systematic way of collecting opinions of graduates with a certain level of professional maturity, concerning skills they gained at the Higher Education Institution.
- VII. Evaluation of graduate's professional success.

## **2.2.5. FACILITIES AND PEDAGOGIC RESOURCES (R12, R13)**

### **REQUISITE 12 – SUITABILITY OF PREMISES**

***Higher Education Institution installations must have a level of comfort and be suitably functional in accordance to their usage.***

***For this requisite, the following evidence or information should be provided:***

- I. Quality of premises and their suitability for the purposes allocated to them.
- II. Quality of the maintenance of premises and their state of use.
- III. Number of classrooms, laboratories and amphitheatres with regard to the size of the student body using them.

### **REQUISITE 13 – PEDAGOGIC FACILITIES**

***This requisite includes a list of items as presented below. The degree to which this requisite is met can only be gauged during the visit to the Higher Education Institution.***

***The following should be assessed:***

- I. Laboratory equipment and conditions of use.
- II. The correct storage of dangerous, explosive or inflammable products and materials (of paramount relevance) .

- III. Digital access to up-to-date journals, publications and information and good facilities for reading, searching for information, and copying information.
- IV. Enough space in the Library for students to work and enough space for the storage of the documents contained within.
- V. Access to informatics resources for training and the existence of a wireless network.
- VI. Software applications made available in accordance with subjects that must be up-to-date and supported by enough manuals.
- VII. Study and recreational facilities both in class time and break time for students undergoing training, by providing bar and canteen facilities.
- VIII. Support facilities (refectory, stationery shop, study rooms, meeting rooms, etc.) for teaching staff and students, centrally located and easily accessible.
- IX. Offices and working facilities for Teaching Staff and Technical Support Staff with suitable levels of comfort and with easy access near the individual's main working area.
- X. Specialized teaching staff, technical support and funding allocated for students to be able to carry out voluntary Engineering work.
- XI. Sport facilities.
- XII. The use by the Higher Education Institution of external premises and services to make good their own shortcomings, along with an exact description of how they are used and under what conditions.

### **2.2.6. ENSURING QUALITY (R14, R15)**

#### **REQUISITE 14 – COURSE MONITORING**

***For this requisite to be met the Higher Education Institution must have a performance-related information system to provide significant data about the quality of its service provision.***

***This should include:***

- I. Indicators that are periodically calculated and then collectively interpreted, thus allowing remedial action to be taken whenever necessary.
- II. Information on student failure and programmes to reduce the failure rate.
- III. Information on average length of time needed to complete the degree programme.
- IV. Information on number of papers and reports of innovative pedagogical experiences published by members of staff.

#### **REQUISITE 15 – EFFECTS OF OTHER EVALUATIONS AND THE QUALITY PLAN**

***This requisite, of fundamental importance for the Higher Education Institution, concerns documenting the criteria behind prioritizing problems, how it plans to solve these problems and how it attempts to solve them in practice.***

***For this purpose, the following should be clearly identified:***

- I. Main factors involved in the improvement of quality.
- II. Quality Plan and the member nominated to carry out its monitoring.

## **3. APPLICATION PROCESS**

### **3.1. APPLICATION SUBMISSION**

The application must be accompanied by suitable documentation and records, both for reasons of thoroughness and of efficiency, so as to facilitate the formal preparatory phase of the applications.

The submission is made in the form of a letter, signed by the Rector's Office, Academic Council, or other Higher Education Institution management body. It is addressed to the Chairperson of the OE and should contain the name of the Higher Education Institution and the member of teaching staff responsible for the process and any contact with the OE.

A paper copy of the submission along with six CD-ROMs should accompany this letter, as well as information on how to access the contents of the Higher Education Institution's homepage, if this is the chosen format for displaying some of the necessary data for evaluation.

The Higher Education Institution can break off the process at any time by means of a registered letter. The process will be reinstated at the Higher Education Institution's request in the same way that the initial application was tendered. This will then be acted on as and when the OE is able to process it.

### **3.2. ASSESSMENT COMMISSIONS**

Following approved guidelines, the Assessment Commissions are made up of between three to four members, appointed by the Admissions and Qualifications Board, from the 'Group of Recognized Evaluation Experts of Engineering Degrees', constituted for this purpose of Quality Assurance. By appointment of the Board, one of such members acts as Chairperson of the Assessment Commission.

In those cases where the Course covers several areas of specialization, the Assessment Commission composition will depend on the agreement between representatives of the respective areas of specialization within the Admissions and Qualifications Board.

The Assessment Commission's work on course evaluation is carried out autonomously. They define their internal organization, namely they choose and define the role of the rapporteur and they agree on the programme of visits.

The Assessment Commission is supported by OE's Qualifications Department that is responsible for the organization of the respective quality assurance dossiers and for the organization of the visits to the Higher Education Institutions.

The Qualification Department has a coordinator of the EUR- ACE evaluations that follows the entire evaluations processes and is always present during the site visits.



### **3.3. VISIT TO THE HIGHER EDUCATION INSTITUTION**

The visit will take place over two working days and the visitors will be accompanied by the Higher Education Institution contact named by the Institution to accompany the Course Assessment process. The visit will result in a report drafted by the Assessment Commission, in which an outline will be given of aspects which do not meet standards and a general appraisal of the Course, focusing on the strong and weak points along with any further unsatisfactory factors.

A draft Visiting Programme must be shown to the Higher Education Institution for comments and approval prior to the visit. The Higher Education Institution must be asked to supply written acknowledgement to show they have been informed of the date and the Programme. A detailed programme for the visit is to be drawn up by the Higher Education Institution for the dates concerned so as to establish the itinerary and identify areas to be visited, as well as the names of those who will be directly involved in the visit.

Data and general information about facilities is to be collected during the visit, through inspection of documentation, interviews and visits to the Laboratories and workshops, as well as libraries, computer rooms and other installations used for pedagogic purposes.

Information obtained in interviews should be supported by documents, records, breakdowns, direct observation and any other evidence that proves that any statements made are not merely statements of intent but rather correspond to actual situations.

All documents used are to be considered confidential by the Assessment Commission and when the Higher Education Institution has expressly requested this, then extra care should be taken.

Aspects that do not meet standards are to be identified and presented to the Higher Education Institution, suitably justified, with mention of the factors behind the diagnosis and putting forward suitable suggestions.

### **3.4. INTERVIEWS**

The purpose of these is to hear teaching staff give their opinions about the work they carry out, the support given to them by the Higher Education Institution as far as their career paths are concerned, the dialogue they have with students and management, the manner in which they are encouraged to keep up to date, the availability of time they dedicate to the Higher Education Institution and the way they manage to keep their motivation.

The information collected must be triangulated with opinions of students: how they behave, identifying the strengths and weaknesses of the course from their perspective, to what extent they feel supported by the Higher Education Institution, how they identify with the profession they have chosen to study and how stimulated they feel by their studies.

During the visit, the Higher Education Institution should also ensure that any aspects that could lead to unsuitable interpretation or even important situations that may pass unnoticed are clarified. The same is true for any evidence deemed not to meet standards, which may be extremely difficult to resolve.

### 3.5. UPDATE OF INFORMATION

If there have been changes of either a curricular or other nature in the period between the submission for evaluation and the date of the visit, then these should be pointed out by the Institution and considered by the Assessment Commission. Higher Education Institutions are also called on to update any data they have submitted that may have become out of date, should a period of time lapse before the visit takes place.

### 3.6. EVALUATION REPORT AND REPORT FLOW

Following the visit, the Commission will draft a **Commission's Report**, which is sent to the Higher Education Institution for comments.

After the Higher Education Institution's comments have been received, the Commission reviews the Report and prepares a **Proposal of Decision**, on the form:

- NOT ACCEPTABLE to grant the EUR-ACE Label, then the accrediting panel can recommend that accreditation be withheld.
- ACCEPTABLE to grant the EUR-ACE Label (valid for six years), which may be given with recommendations if there is any.
- ACCEPTABLE to grant the EUR-ACE Label (valid for a maximum of 3 years), which may be given with recommendations and restrictions (for cases in which immediate remedial action is lacking and where the carrying out of these changes is checked at a later date by the Assessment Commission).

The two documents (Commission's Report and 'Proposal of Decision') will become part of the Application Process.

The Application Process will then be discussed by the CAQ, which will submit a proposal for approval by the National Board of Directors (CDN).

The CDN may ask for additional clarification, which will be provided by the CAQ in cooperation with the Assessment Commission.

The final decision, signed by the President of the Portuguese OE, is sent to the Higher Education Institution.

### 3.7. NECESSARY INFORMATION FOR THE APPLICATION

Information for examination by the Assessment Commission must be sufficient but never so excessive as to hamper its processing. All documents are to have an index and information is to be condensed and presented in such a manner as to allow easy understanding of the aspects under analysis.

As regards information handed in on paper, this should preferably be hole-punched and removable, with clear dividers between different types of sheets of paper. Subject papers should be ordered according to year and exams are to be kept separately, in the same order as the subjects.

If the institution sees fit, the required information may be posted on the Higher Education Institution's web page, namely:

- Programme curriculum: subjects, theoretical, practical and theoretical-practical class times and the areas they belong to (Mathematic, Physics, etc.).
- Programme summaries, containing a summary of content, framework, pedagogic objectives, theoretical, practical and theoretical-practical class times, ECTS, a list of practical and obligatory reports and the most recent exam results.
- Teacher profile sheets containing Curriculum Vitae, Higher Education Institution timetable and length of time as an OE member (if applicable).
- Methods for accessing technical and scientific information in book, magazine and electronic formats.

## 4. OUTCOMES

### 4.1. KNOWLEDGE AND UNDERSTANDING

First Cycle graduates should have:	Documental Evidence	Personal Interview Evidence
<p>Knowledge and understanding of the scientific and mathematical principles underlying their branch of engineering; a systematic understanding of the key aspects and concepts of their branch of engineering; coherent knowledge of their branch of engineering including some at the forefront of the branch; awareness of the wider multidisciplinary context of engineering.</p>	<p>Course content; Technical exercises; Exams.</p>	<p>Learning attraction; Technical interest; Engineering talent.</p>

### 4.2. ENGINEERING ANALYSIS

First Cycle graduates should have:	Documental Evidence	Personal Interview Evidence
<p>The ability to apply their knowledge and understanding to identify, formulate and solve engineering problems using established methods; the ability to apply their knowledge and understanding to analyse engineering products, processes and methods; the ability to select and apply relevant analytic and modelling methods. Involve considerations from outside their field of study and non-technical – societal, health and safety, environmental, economic and industrial – constraints</p>	<p>Course content; Technical exercises; Case studies; Stimulated discussions; Tests.</p>	<p>Structured mind; Ability to analyze, select and apply knowledge.</p>

### 4.3. ENGINEERING DESIGN

First Cycle graduates should have:	Documental Evidence	Personal Interview Evidence
The ability to apply their knowledge and understanding to develop and realise designs to meet defined and specified requirements including non-technical - societal, health and safety, environmental, economic and industrial commercial – constraints; an understanding of design methodologies, and an ability to use them.	Disciplines content; Case studies; projects; Stimulated discussions. Work reports Exams.	Documentation skills; A capability to apply and develop knowledge of Engineering; Objectiveness; Structured mind;

### 4.4. INVESTIGATIONS

First Cycle graduates should have:	Documental Evidence	Personal Interview Evidence
The ability to conduct searches of literature, and to use data bases and other sources of information; the ability to design and conduct appropriate experiments, interpret the data and draw conclusions; workshop and laboratory skills.	Research projects; Documentation access tools; Documentation organization tools.	Learning attraction; Objectiveness; Practical attitude Laboratory skills

#### 4.5. ENGINEERING PRACTICE

First Cycle graduates should have:	Documental Evidence	Personal Interview Evidence
<p>The ability to select and use appropriate equipment, tools and methods; the ability to combine theory and practice to solve engineering problems; an understanding of applicable techniques and methods, and of their limitations; an awareness of the non-technical implications of engineering practice.</p> <p>Knowledge and understanding of the non-technical – societal, health and safety, environmental, economic and industrial - implications of engineering practice</p>	<p>Course content; Case studies; Stimulated discussions; Documentation access tools. Laboratory work.</p>	<p>Applications experience; A knowledge of Engineering that ability to combine theory and practice; Ability to synthesize; Objectivity.</p>

#### 4.6. MAKING JUDGEMENTS

First Cycle graduates should have:	Documental Evidence	Personal Interview Evidence
<p>Demonstrate an awareness of project management and business practices, such as risk and change management, and understand their limitations; demonstrate awareness of the health, safety and legal issues and responsibilities of engineering practice, the impact of engineering solutions in a societal and environmental context, and commit to professional ethics, responsibilities and norms of engineering practice; demonstrate an awareness of project management and business practices, such as risk and change management, and understand their limitations;</p>	<p>Management courses; Group work reports; Individual report assignments ; Work presentations.</p>	<p>Management driven; Self-confidence.</p>

#### 4.7. COMMUNICATION AND TEAM-WORKING

First Cycle graduates should have:	Documental Evidence	Personal Interview Evidence
<p>Function effectively as an individual and as a</p>	<p>Communication</p>	<p>Communication</p>

member of a team; use diverse methods to communicate effectively with the engineering community and with society at large; commit to professional ethics., and have the ability to engage in independent, life-long learning.	techniques disciplines; Work presentations ; reporting in foreign languages.	competences; Foreign language skills; Self-confidence.
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#### 4.8. LIFELONG LEARNING

<b>First Cycle graduates should have:</b>	<b>Documental Evidence</b>	<b>Personal Interview Evidence</b>
Have the ability to engage in independent, life-long learning.	Work presentations; Work projects.	independent learning skills

## 5. APPLICATION DOSSIER

The dossier for the evaluation process consists of the compilation of the information sheets presented in Appendix, duly filled in.

Individual files, for the enclosed sheets, in WORD, will be supplied.

The complete list of information sheets is as follows:

### **SHEET 0 – PROPOSAL OF COVER AND IDENTIFICATION PAGES**

### **SHEET 1, 2 AND 3 - INTRODUCTORY DATA ABOUT THE INSTITUTION**

Number of students, taught courses, summary of history, description of main premises.

### **SHEET 4 - COURSE FORMALIZATION – PR1**

Information about approval of the curriculum and the Course's running, with any changes to the curriculum made recently or to be made in the future; the Legislation governing the Course's set-up must be stipulated, namely its approval by the respective Ministry and/or other State body, University Senate etc.

### **SHEET 5 - HEI STRATEGY CONCERNING THE COURSE – R1; R2**

Higher Education Institution strategy concerning the Course, outlining the target group, competitive advantages, threats and sustainability / financial resources. Identification of the empregability level.

### **SHEET 6 - COOPERATION WITH OTHER INSTITUTIONS - R3**

Working Relationships with other external institutions, mentioning any protocols and partnerships, as well as links with interface institutions.

### **SHEET 7 AND 8 - GENERAL INFORMATION ABOUT THE COURSE – R4**

Information about the number of subjects, credits, total of timetabled classes per week, number of students, and specific learning outcomes offered by the Course. Evaluation of the teaching given will be carried out in accordance with the specific outcomes laid down by the Professional College related to the area of the Course

### **SHEET 9 - COURSE PLAN – R5**

Distribution of weekly class hours, subject options and subject outlines

### **SHEET 10 - SUBJECT SHEETS - R5; R6**

Data about pre-requisites necessary to take the subject, pedagogic objectives, linkage to other subjects upstream and downstream, theoretical and practical content, reasoning behind learning outcomes, the type of evaluation used and recommended bibliography.

### **SHEET 11 - COMPLEMENTARY ACTIVITY SHEETS – R5; R6**

Data on pedagogic objectives, linkage upstream and downstream activities, content, reasoning behind learning outcomes, evaluation methods and recommended bibliography.

### **SHEET 12 - OUTCOMES – R7**



Subject-by-subject breakdown of learning outcomes. Breakdown of learning outcomes stemming from additional activities: conferences, seminars and visits.

**SHEET 13 - LIST OF TEACHING STAFF: PERMANENT STAFF – R8**

General list of permanent teaching staff, summary table according to qualifications, newly-qualified teaching staff and teaching staff who are members of the Portuguese OE.

**SHEET 14 - LIST OF TEACHING STAFF: NON-PERMANENT STAFF – R8**

General list of invited teaching staff, summary table according to qualifications, newly-qualified teaching staff and teaching staff who are members of the Portuguese OE.

**SHEET 15 - LIST OF STAFF IN CHARGE R8**

List and breakdown of staff in charge of subjects.

**SHEET 16 - COURSE DIRECTOR SHEET – R8**

Outline of the Course Director's academic and professional background.

**SHEET 17 - TEACHING STAFF SHEETS – R8**

Outline of the academic and professional background of the other Professional staff.

**SHEET 18 - TEACHING STAFF PERSPECTIVE – R9**

General opinion of teaching staff on all aspects of the Course

**SHEET 19 - MOVEMENT OF STUDENTS – R10**

Enrolment of students and reasons for course attractiveness, entry conditions, applicants and entry grades.

**SHEET 20 - STUDENTS AND EMPLOYERS' EVALUATION / List of partnerships enabling training periods and international mobility periods - R11**

Survey results and action taken each academic year.

**SHEET 21 - SUITABILITY OF PREMISES – R12**

Overall information concerning quality and adequacy of premises.

**SHEET 22 - PEDAGOGIC FACILITIES – R13**

Overall information on pedagogical facilities .

**SHEET 23 - COURSE MONITORING: RATES OF SUCCESS – R14**

Information concerning enrollments and approvals

**SHEET 24 - COURSE MONITORING: DESIGN/PROJECT WORK – R14**

Information concerning titles and student success in individual Design or Project Work

**SHEET 25 - COURSE MONITORING: FOR SELF-CONTROL – R14**

Information concerning internal indicators employed by the Institution in internal quality assurance procedures

**SHEET 26 - QUALITY PLAN – R15**

Diagnostic methods, identification of critical aspects and treatment and progress along OE recommended lines.

**APPENDIX**

**SET OF INFORMATION SHEETS**

**FOR THE QUALITY ASSURANCE DOSSIER**

**S0. PROPOSAL OF COVER AND IDENTIFICATION PAGES**

**INSTITUTION IDENTIFICATION AND LOGO (Institution style)**

**Course  
Title**

**Candidature to Ordem dos Engenheiros  
For the award of the EUR-ACE Label**

Month, Year

## Institutional Identification

**Institution –**

**Rector/Director/Dean as appropriate –**

**E-Mail –**

**Telephone – \***

**Fax – \***

**Address -**

**Course – Title**

**Course Director –**

**E-Mail –**

**Telephone – \***

**Fax – \***

**Address - \***

**Secretariat (to whom correspondence should be addressed)**

**Name –**

**E-Mail –**

**Telephone –**

**Fax –**

**Address -**

**\* Optional information**

# S1. INTRODUCTORY DATA ABOUT THE INSTITUTION: PART A <sup>1</sup>

(INSTITUTE, FACULTY, SCHOOL, UNIVERSITY)

INSTITUTION:	
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ACADEMIC YEAR OF APPLICATION AND SUPPORT DOCUMENTS - N-1/N	/
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## GOVERNING BODIES

DIRECTOR/CHAIRPERSON/ VICE-CHANCELLOR	
CHAIRPERSON TEACHING/ BOARD	
CHAIRPERSON SCIENTIFIC BOARD	

## TEACHING AND NON-TEACHING STAFF

TOTAL STAFF academic and non academic		TOTAL TEACHING STAFF		STAFF WITH PHD or equivalent		OTHER TEACHING STAFF	
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\*

## Nº OF STUDENTS IN THE ACADEMIC YEAR - N-1/N = EG. 2007/2008

	N-5/N-4	N-4/N-3	N-3/N-2	N-2/N-1	N-1/N
Nº OF FCL FIRST REGISTRATIONS					
Nº OF SCM FIRST REGISTRATIONS <sup>2</sup>					
Nº OF IM FIRST REGISTRATIONS <sup>3</sup>					
TOTAL NUMBER OF FIRST REGISTRATIONS					
TOTAL REGISTERED IN FCL COURSES					
TOTAL REGISTERED IN SCM COURSES					
TOTAL REGISTERED IN IM COURSES					
TOTAL REGISTERED IN FCL, SCM OR IM COURSES					
Nº OF FIRST REGISTRATIONS AS DOCTORAL STUDENTS					
TOTAL REGISTERED AS DOCTORAL STUDENTS					

<sup>1</sup> This sheet refers to the Institution which houses the courses, which is both academically and pedagogically autonomous, and which also undertakes the teaching of Basic Subjects.

<sup>2</sup> Includes only those first registrations directly in Second Cycle Master courses (90 or 120 RCTS courses)

<sup>3</sup> Includes first registrations in Integrated Master courses

**CONCLUSIONS IN CIVIL YEAR - N-1= EG. 2007**

<i>Conclusions (certificates issued) of FCL<sup>4</sup></i>					
<i>Conclusions (certificates issued) of SCM/IM<sup>5</sup></i>					
<b>CONCLUSIONS OF FCL+SCM/IM</b>					
<i>Conclusions of PhDs</i>					

**ADDRESS OF PREMISES**

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<sup>4</sup> All 'Licenciado' certificates

<sup>5</sup> All Master certificates



### S3. INTRODUCTORY DATA ABOUT THE INSTITUTION – PART C <sup>7</sup>

(INSTITUTE, FACULTY, SCHOOL, UNIVERSITY)

<b>INSTITUTION:</b>	
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#### **SUMMARY OF INSTITUTION'S HISTORY:**

Development of the Institution's vocation, its pedagogic and academic trajectory, its integration in the National Education System, be this private or public. Outline of the different phases in the Institution's life from its foundation, giving an idea about the growth in student numbers, types of taught courses, changes and extension work to premises, name changes, etc.

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<sup>7</sup> This sheet refers to the Institution which houses the courses, which is both academically and pedagogically autonomous, and which also undertakes the teaching of Basic Subjects.



**DESCRIPTION OF MAIN PREMISES:**

The current installations should be described in such a way as to include both the most relevant aspects and their suitability for the Higher Education Institution's needs, including namely libraries, centralized workshops, canteens, experimental installations, specific areas of research, student accommodation, business start-up hubs, interface institutes.

#### S4. COURSE FORMALISATION – PR 1

<b>INSTITUTION:</b>	
<b>COURSE:</b>	

##### **CURRENT PROGRAMME**

<b>Date Course was set up or the last formally-approved change:</b>	
<b>Academic year in which it came into effect:</b>	

##### **PROOF OF COURSE'S LEGITIMATE RUNNING:**

--

##### **NEW PROGRAMME PENDING APPROVAL (IF APPLICABLE)**

##### **DATES**

<b>Final calendar year degrees were awarded from the former curriculum / course in:</b>	
<b>First calendar year degrees will be awarded from the new curriculum / course in:</b>	

## S5. HEI<sup>8</sup> STRATEGY CONCERNING THE COURSE – R1, R2

<b>INSTITUTION:</b>	
<b>COURSE:</b>	

### **HISTORICAL ROOTS OF THE COURSE:**

--

### **SPECIAL FEATURES OF THE COURSE COMPARED WITH OTHERS OF A SIMILAR NATURE:**

Teaching, applied research, development of pedagogic projects.
--

### **COMPETITIVE ADVANTAGES AND THREATS:**

<b>COMPETITIVE ADVANTAGES</b>	<b>THREATS</b>
Applicants, teaching staff, teaching facilities, Higher Education Institution environment and training given.	Applicants, teaching staff, teaching facilities, Higher Education Institution environment and training given.

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<sup>8</sup> HEI – Higher Education Institution

**COURSE SUSTAINABILITY:**

Financial sustainability outline, demand, market predictions and institutional support.

## S6. COOPERATION WITH OTHER INSTITUTIONS<sup>9</sup> – R3

<b>INSTITUTION:</b>	
<b>COURSE:</b>	

### **PROTOCOLS AND PARTNERSHIP AGREEMENTS WITH OTHER INSTITUTIONS/ORGANIZATIONS:**

--

### **INTERFACE INSTITUTIONS AND THE WAY THEY OPERATE IN CONJUNCTION WITH THE HEI:**

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<sup>9</sup> Activities related with reaching staff involved in the Course

## S7. GENERAL INFORMATION ABOUT THE COURSE: PART A – R4

INSTITUTION:	
COURSE:	

ACADEMIC YEAR OF APPLICATION AND SUPPORT DOCUMENTS - N-1/N	/
--	---

<b>SUBJECTS</b>		<b>FINAL WORK</b>		<b>PROFESSIONAL TRAINING</b>	
SEMESTER	<input type="text"/>	ECTS	<input type="text"/>	YES	<input type="text"/>
ANNUAL	<input type="text"/>			NO	<input type="text"/>
TOTAL WORKLOAD (HRS)		COURSE (YEARS)		TRAINING EXPERIENCE (WEEKS)	
<input type="text"/>		<input type="text"/>		<input type="text"/>	
TOTAL CONTACT TIMES (HRS)					
<input type="text"/>					

### CONTACT TIMES (HOURS PER WEEK):

YEAR	1 <sup>ST</sup> YEAR		2 <sup>ND</sup> YEAR		3 <sup>RD</sup> YEAR	
	1 <sup>ST</sup>	2 <sup>ND</sup>	1 <sup>ST</sup>	2 <sup>ND</sup>	1 <sup>ST</sup>	2 <sup>ND</sup>
SEMESTER						
LECTURES						
TUTORIALS						
PRACTICAL / PROJECT						
TOTAL						

### NUMBER OF STUDENTS IN THE LAST 5 YEARS:

ACADEMIC YEAR (N-1/N)	ENTRY IN 1 <sup>ST</sup> YEAR	TOTAL IN 1 <sup>ST</sup> YEAR	TOTAL IN COURSE		CIVIL YEAR	GRADUATES

### COURSE GENERAL OUTCOMES:

## S8. GENERAL INFORMATION ABOUT THE COURSE: PART B – R4

<b>INSTITUTION:</b>	
<b>COURSE:</b>	

### OUTCOMES (COMPETENCES AND SKILLS) PER SCIENTIFIC AREA:

AREA 1
AREA 2
AREA 3
AREA 4
AREA 5





## S10. SUBJECT SHEET – R5/R6

<b>INSTITUTION:</b>	
<b>COURSE:</b>	
<b>SUBJECT/UNIT:</b>	

<b>I - IDENTIFICATION</b>				
<b>ACADEMIC YEAR –</b>		<b>SUBJECT AREA/GROUP * -</b>		<b>INTERNAL CODE –</b>
<b>YEAR:</b>	<b>SEM:</b>	<b>CONTACT TIME - HOURS/WEEK:</b>	<b>ECTS:</b>	<b>LEVEL (B/I/A)**:</b>
<b>FORMAL PREREQUISITES:</b>				
<b>SUBJECT WEBSITE URL:</b>				
<b>TEACHING STAFF</b>				
	<b>NAME</b>	<b>POSITION</b>	<b>ACADEMIC BACKGROUND</b>	<b>% Occ. (TEACHING STAFF DISTRIBUTION)</b>
<b>IN CHARGE</b>				
<b>OTHER</b>				

\*Fundamental Subjects (B), Engineering Science (C), Specialty (S), Option (O), Complementary subjects (P).

\*\* Basic/Intermediate/Advanced

<b>II – AIMS, SYNOPSIS, CHARACTERIZATION</b>
<b>Background</b> (max. 600 characters) – Provide an overview of the technical and scientific fields that justify this Unit
<b>Aims</b> (max. 750 characters) – Namely pedagogic objectives and how this Unit contributes for the Course
<b>Contents</b> (max. 1000 characters) Describe programme of a theoretical and practical nature as appropriate



<b>INSTITUTION:</b>	
<b>COURSE:</b>	
<b>SUBJECT/UNIT:</b>	

<b>Main Teaching Material</b> Namely main textbooks and other basic support texts	
<b>Complementary Teaching Material</b> Complementary references of books, papers and technical information, as appropriate	
<b>Teaching/Learning Tools</b> Software, e-learning tools, etc..	
<b>Previous knowledge assumed as acquired</b>	
<u>Material</u> Describe in rows expected knowledge	<u>Source</u> AND Identify Units where they are taught
<b>Teaching/learning methodology</b> Namely describe innovative methods	
<b>Characterization of objectives and program</b> <b>A – Estimated percent distribution of scientific and technological contents</b> <ul style="list-style-type: none"> <li>▪ Scientific component (establishes and develops scientific bases) – ??</li> <li>▪ Technological component (apply to design and process operation) - ?? %</li> </ul>	
<b>Characterization of objectives and program</b> <b>B – Outcomes – in conformity with EUR-ACE criteria</b> Describe what the student is expected to ‘understand’ or ‘know’ or ‘be able to do’ after this module and with relation to the eight outcomes of the EUR-ACE framework standards: Knowledge and Understanding – Engineering Analysis – Engineering Design – Investigations – Engineering Practice – Making Judgments – Communication and Team-Working – Lifelong Learning -	

<b>III – ASSESSMENT PROCEDURE</b>
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**Self Assessment –**

Example sheets, paper & pencil versus computer-aided worked examples.

**Assessment by teachers –**

## S11. COMPLEMENTARY ACTIVITY SHEET – R5/R6

<b>INSTITUTION:</b>	
<b>COURSE:</b>	
<b>ACTIVITY :</b> (training, voluntary, work, study visits, etc.):	

I - IDENTIFICATION				
ACADEMIC YEAR –		SUBJECT AREA/GROUP -	INTERNAL CODE –	
YEAR:	SEM:	CONTACT TIME - HOURS/WEEK:	ECTS: If appropriate	LEVEL (B/I/A) If appropriate
<b>FORMAL PREREQUISITES:</b>				
<b>TEACHING STAFF</b>				
	NAME	POSITION	ACADEMIC BACKGROUND	% OCC. ((TEACHING STAFF DISTRIBUTION)
<b>COORDINATOR</b>				
<b>OTHER</b>				

II - AIMS, CHARACTERIZATION
<p><b>Background</b> (max. 600 characters) – Provide a concise overview of the technical and scientific fields that justify this Activity</p>
<p><b>Aims</b> (max. 750 characters) – Namely pedagogic objectives and how this Unit contributes for the Course</p>
<p><b>Contents</b> (max. 1000 characters) Describe basic characteristics of activity</p>

<b>INSTITUTION:</b>	
<b>COURSE:</b>	
<b>ACTIVITY :</b> (training, voluntary, work, study visits, etc.):	

**Characterization of objectives and program**

**Outcomes – in conformity with EUR-ACE criteria**

Describe what the student is expected to ‘understand’ or ‘know’ or ‘be able to do’ after this module and with relation to the six outcomes of the EUR-ACE framework standards:

Knowledge and Understanding –

Engineering Analysis –

Engineering Design –

Investigations –

Engineering Practice –

Making Judgments –

Communication and Team-Working –

Lifelong Learning -

**III - ASSESSMENT PROCEDURE**

**Self Assessment –**

Students reports and other

**Assessment by teachers –**









(add rows as required)										

**COMPLEMENTARY ACTIVITIES**

CONFERENCES, VISITS, COMPETITIONS, VOLUNTARY PROJECTS, ETC.	Y	S	KNOWLEDGE AND UNDER STANDING	ENG. ANALYSIS	ENG. DESIGN	INVESTIGATIONS	ENG. PRACTICE	MAKING JUDGMENTS	COMMUNICATION AND TEAM WORKING	LIFELONG LEARNING
(add rows as required)										





### S15. LIST OF STAFF IN CHARGE – R8

<b>INSTITUTION:</b>	
<b>COURSE:</b>	

SUBJECT NAME	YEAR	SEM	MEMBER OF TEACHING STAFF IN CHARGE	ACADEMIC PROFESSIONAL POSITION (1)	DEPT.	EMPLOYMENT STATUS (2)	ACADEMIC BACKGROUND (3)	ACADEMIC DEGREE	OE (4)
								Lic.	
(add rows as required)									

Notes: **(1)** – differs from University to Polytechnic Institute level. **(2)** - 100% occupation equivalent to 35 Hours per week **(3)** – Basic training: Engineering or other (specify) **(4)** - Member, Senior or Fellow



## S16. COURSE DIRECTOR SHEET – R8

<b>INSTITUTION:</b>			
<b>COURSE:</b>			
<b>NAME:</b>			
<b>ACADEMIC POSITION:</b>			<b>YEAR OF BIRTH:</b>
<b>PERSONAL WEBSITE URL:</b>			<b>E-MAIL:</b>

### ACADEMIC QUALIFICATIONS

YEAR	INSTITUTION	DEGREE	SCIENTIFIC DOMAIN

### FURTHER TECHNICAL OR ACADEMIC TRAINING OR QUALIFICATIONS

YEAR	TRAINING INSTITUTION	COURSE/ACTIVITY

### ACADEMIC CAREER

YEARS	EMPLOYER	POSITION/DUTIES

### NON-ACADEMIC PROFESSIONAL CAREER

YEARS	EMPLOYER	POSITION/DUTIES

### SCIENTIFIC, PEDAGOGICAL AND PROFESSIONAL PRODUCTIVITY INDICES, NUMBER OF:

BOOKS AS AUTHOR		NATIONAL RESEARCH CONTRACTS (FCT, AND OTHER PROJECTS)	
BOOKS AS EDITOR		INTERNATIONAL RESEARCH CONTRACTS (EU AND OTHER SOURCES)	
SCI JOURNAL PAPERS		R&D&I CONTRACTS WITH INDUSTRY	
BOOK CHAPTERS		TECHNOLOGY TRANSFER CONTRACTS	
CONFERENCES PAPERS		PATENTS	
OPINION PAPERS		PROTOTYPES	
INVITED CONFERENCES		MAJOR ENGINEERING PROJECTS	
PHD THESES		ORGANIZATION OF RELEVANT EVENTS	

MASTER THESES		PRIZES AND AWARDS	
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**Up to 5 Main Publications (Books or SCI Papers)**

YEAR	BOOKS – AUTHORS, TITLE, PUBLISHER JOURNALS - AUTHORS, TITLE, JOURNAL, VOLUME, PAGES

**UP TO 5 PHD SUPERVISIONS CONCLUDED**

YEAR	INSTITUTION	CANDIDATE	TITLE

**UP TO 5 PATENTS REGISTERED**

YEAR	REFERENCE	AUTHORS	PATENT DESCRIPTION

**UP TO 5 TECHNOLOGY TRANSFER CONTRACTS**

YEAR	COMPANY /ORGANIZATION	TECHNOLOGY TRANSFER IDENTIFICATION

**UP TO 5 RELEVANT RESEARCH CONTRACTS**

YEARS	FINANCING INSTITUTION	REFERENCE	RESEARCH INSTITUTIONS INVOLVED	TITLE

**UP TO 5 CONTRACTS/PROTOCOLS/AGREEMENTS WITH INDUSTRY**

YEARS	COMPANY /ORGANIZATION	TITLE



**UP TO 5 MAIN ENGINEERING PROJECTS**

YEAR	AUTHORS, PROJECT TITLE, RECEIVING ENTITY

**UP TO 3 PRIZES AND MERITS RECEIVED**

YEAR	PRIZE

**UP TO 5 MAIN INVITED CONFERENCES**

YEAR	EVENT, PLACE, TITLE

**UP TO 3 ORGANIZATIONS OF RELEVANT SCIENTIFIC OR TECHNICAL EVENTS**

YEAR	EVENT, FUNCTION, TYPE, PLACE,

**RELEVANT FUNCTIONS OF MANAGEMENT AT ACADEMIC AND PROFESSIONAL LEVEL**

YEARS	FUNCTION, POSITION,

## S17. TEACHING STAFF SHEET – R8

<b>INSTITUTION:</b>			
<b>COURSE:</b>			
<b>NAME:</b>			
<b>ACADEMIC POSITION:</b>			<b>YEAR OF BIRTH:</b>
<b>PERSONAL WEBSITE URL:</b>			<b>E-MAIL:</b>

### ACADEMIC QUALIFICATIONS

YEAR	INSTITUTION	DEGREE	SCIENTIFIC DOMAIN

### FURTHER TECHNICAL OR ACADEMIC TRAINING OR QUALIFICATIONS

YEAR	TRAINING INSTITUTION	COURSE/ACTIVITY

### ACADEMIC CAREER

YEARS	EMPLOYER	POSITION/DUTIES

### NON-ACADEMIC PROFESSIONAL CAREER

YEARS	EMPLOYER	POSITION/DUTIES

### SCIENTIFIC, PEDAGOGICAL AND PROFESSIONAL PRODUCTIVITY INDICES, NUMBER OF:

BOOKS AS AUTHOR		NATIONAL RESEARCH CONTRACTS (FCT, AND OTHER PROJECTS)	
BOOKS AS EDITOR		INTERNATIONAL RESEARCH CONTRACTS (EU AND OTHER SOURCES)	
SCI JOURNAL PAPERS		R&D&I CONTRACTS WITH INDUSTRY	
BOOK CHAPTERS		TECHNOLOGY TRANSFER CONTRACTS	
CONFERENCES PAPERS		PATENTS	
OPINION PAPERS		PROTOTYPES	
INVITED CONFERENCES		MAJOR ENGINEERING PROJECTS	

PHD THESES		ORGANIZATION OF RELEVANT EVENTS	
MASTER THESES		PRIZES AND AWARDS	

### Up to 5 Main Publications (Books or SCI Papers)

YEAR	BOOKS – AUTHORS, TITLE, PUBLISHER JOURNALS - AUTHORS, TITLE, JOURNAL, VOLUME, PAGES

### UP TO 5 PHD SUPERVISIONS CONCLUDED

YEAR	INSTITUTION	CANDIDATE	TITLE

### UP TO 5 PATENTS REGISTERED

YEAR	REFERENCE	AUTHORS	PATENT DESCRIPTION

### UP TO 5 TECHNOLOGY TRANSFER CONTRACTS

YEAR	COMPANY / ORGANIZATION	TECHNOLOGY TRANSFER IDENTIFICATION

### UP TO 5 RELEVANT RESEARCH CONTRACTS

YEARS	FINANCING INSTITUTION	REFERENCE	RESEARCH INSTITUTIONS INVOLVED	TITLE

### UP TO 5 CONTRACTS/PROTOCOLS/AGREEMENTS WITH INDUSTRY

YEARS	COMPANY / ORGANIZATION	TITLE

**UP TO 5 MAIN ENGINEERING PROJECTS**

YEAR	AUTHORS, PROJECT TITLE, RECEIVING ENTITY

**UP TO 3 PRIZES AND MERITS RECEIVED**

YEAR	PRIZE

**UP TO 5 MAIN INVITED CONFERENCES**

YEAR	EVENT, PLACE, TITLE

**UP TO 3 ORGANIZATIONS OF RELEVANT SCIENTIFIC OR TECHNICAL EVENTS**

YEAR	EVENT, FUNCTION, TYPE, PLACE,

**RELEVANT FUNCTIONS OF MANAGEMENT AT ACADEMIC AND PROFESSIONAL LEVEL**

YEARS	FUNCTION, POSITION,

## S18. TEACHING STAFF PERSPECTIVE – R9

<b>INSTITUTION:</b>	
<b>COURSE:</b>	

<b>MEMBER OF TEACHING STAFF</b>	
<b>SUBJECT AREA</b>	

### **COMMENTS CONCERNING STUDENT CENTRED TEACHING/LEARNING METHODOLOGIES**

Comments on efforts for redesign of course contents and application of student centred teaching/learning methodologies; use of new e-learning tools

### **COMMENTS CONCERNING STUDENT SUCCESS RATE:**

Outline of the student failure rate in the subjects taught by the member of teaching staff along with predictable trends and compensatory measures taken:

### **MAIN TEACHING-SUPPORT SHORTAGES:**

Shortages of research resources, bibliography, seminar participation, and other knowledge-exchange forums:

### **AVAILABILITY OF AUDIO-VISUAL RESOURCES:**

Evaluation of the availability of audio-visual resources, pedagogic software and teaching rooms.

### **AVAILABILITY OF LABORATORIES AND APPLIED TRAINING RESOURCES:**

Evaluation of the availability of laboratories, the organization of study visits, fieldwork activities, lectures and resources for organizing visits:

### **EVALUATION OF COURSE COORDINATION:**

Efficiency of Course coordination, attendance at coordination meetings and their main outcomes.

### **THE HIGHER EDUCATION INSTITUTION ENVIRONMENT:**

The internal life of a Higher Education Institution can vary between enthusiasm and routine, aggressiveness and camouflage, cooperation and rivalry, empathy and divergence, partnership and opposition, compromise and disinterest and lastly, teamwork or individualism. These will give an idea as to the extent the environment cares for the participation of all and if the prevailing mentality can result in stimulating activity.

## S19. MOVEMENT OF STUDENTS – R10

<b>INSTITUTION:</b>	
<b>COURSE:</b>	

### PREREQUISITES

Prerequisites needed for the acceptance of students, NAMELY requirements in the area of Mathematics

### CORE REQUISITES

Conditions to be evaluated for the selection of the applicant students

### TRANSFERS (TO THE COURSE FROM OUTSIDE):

ACADEMIC YEAR	SCHOOLS	1ST YEAR	2ND YEAR	TOTAL

### STUDENT MOVEMENT WITH REFERENCE TO THE BEGINNING OF THE YEAR:

ACADEMIC YEAR	A) NEWLY ADMITTED	B) TRANSFERRED	C) CONCLUDED THE COURSE	D) LEFT WITHOUT CONCLUDING	ATTENDING THE COURSE
<i>N-5 / N-4</i>					<i>X</i>
					<i>X+A+B-C-D</i>
<i>N-1/N</i>					

### GRADUATE LEAVERS:

ACADEMIC YEAR	TOTAL	GRADUATES WHO FINISHED COURSE IN				AVERAGE YEARS
	GRADUATES	3 YEARS	4 YEARS	5 YEARS	6 YEARS	


## S20. STUDENTS AND EMPLOYERS' EVALUATION – R11

<b>INSTITUTION:</b>	
<b>COURSE:</b>	

### RELEVANT ACTION STEMMING FROM PEDAGOGIC SURVEYS OF STUDENTS:

ACADEMIC YEAR	NUMBER OF PEDAGOGIC SURVEY ANSWERS	ACTION TAKEN
<i>N-1</i>		
<i>N-2</i>		
<i>N-3</i>		

N = Reference Academic year

### RELEVANT RESULTS FROM SURVEYS OF GRADUATES:

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### RELEVANT RESULTS FROM SURVEYS OF EMPLOYERS:

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### LIST OF PARTNERSHIPS ENABLING TRAINING PERIODS AND INTERNATIONAL MOBILITY:

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## S21. SUITABILITY OF PREMISES – R12

<b>INSTITUTION:</b>	
<b>COURSE:</b>	

### **SUITABILITY OF PREMISES:**

For this requisite, evidence or information should be provided on: quality of premises and their suitability for the purposes allocated to them; quality of the maintenance of premises and their state of use; number of classrooms, laboratories and amphitheatres with regard to the size of the student body using them.



## S22. PEDAGOGIC RESOURCES – R13

<b>INSTITUTION:</b>	
<b>COURSE:</b>	

### **PEDAGOGIC FACILITIES:**

Information should be provided that allows the assessment of:

Laboratory equipment and conditions of use.

The correct storage of dangerous, explosive or inflammable products and materials (of paramount relevance) .

Digital access to up-to-date journals, publications and information and good facilities for reading, searching for information, and copying information.

Quality of space in the Library for students to work and space for the storage of the documents contained within.

Access to informatics resources for training and the existence of a wireless network.

Software applications made available in accordance with subjects that must be up-to-date and supported by enough manuals.

Study and recreational facilities both in class time and break time for students undergoing training, by providing bar and canteen facilities.

Support facilities (refectory, stationery shop, study rooms, meeting rooms, etc.) for teaching staff and students, centrally located and easily accessible.

Offices and working facilities for Teaching Staff and Technical Support Staff with suitable levels of comfort and with easy access near the individual's main working area.

Specialized teaching staff, technical support and funding allocated for students to be able to carry out voluntary Engineering work.

Sport facilities.

The use by the Higher Education Institution of external premises and services to make good their own shortcomings, along with an exact description of how they are used and under what conditions.





## S25. COURSE MONITORING: SELF-CONTROL – R14

<b>INSTITUTION:</b>	
<b>COURSE</b>	

### **INSTITUTIONAL ANALYSIS OF COURSE'S GENERIC INDICATORS**

Example of generic indicators:

Number of Licenciatures's finished in the last 5 years

Number of Master's finished in the last 5 years

Number of PhD's finished in the last 5 years. National and international prizes awarded to students and teaching staff. Number of grants allocated to students and teaching staff.

Merits awarded to the Institution.

### **INSTITUTIONAL ANALYSIS OF INDICATORS CONCERNING STUDENTS**

Example of indicators concerning students: Applications to the course compared with general demand in the last 5 years. First-choice applications. Age Distribution per curricular year (present year). Average student age over the last 5 academic years

Retention index per subject (previous year). Retention index per curricular year (previous year). Average length of time in years needed to obtain a degree over the last five academic years. Failure rate per subject. Record of attendance of practical classes

Record of attendance of theoretical classes. Evaluation of subjects (surveys of students)

Global evaluation of Course (survey of students and employers). Number of annual drop-outs. Number of students exceeding the maximum time limit envisaged by the law for the Course

### **INSTITUTIONAL ANALYSIS OF INDICATORS CONCERNING TEACHING STAFF**

Example of indicators concerning teaching staff: Applications to the Higher Education Institution. Information on length of time staff have been at the Higher Education Institution. Analysis of the recommendations from the teaching staff survey. Teaching staff age distribution per curricular year (present year). Average age of teaching staff over the last five years. Record of teaching staff attendance and punctuality - practical classes. Record of teaching staff attendance and punctuality – theoretical classes. Student subject evaluation (survey of students). Number of teaching staff finishing PhD course.

## S26. QUALITY PLAN – R15

<b>INSTITUTION:</b>	
<b>COURSE:</b>	

### **DIAGNOSTIC METHODS:**

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### **IDENTIFICATION OF CRITICAL ASPECTS:**

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### **HANDLING OF OE RECOMMENDATIONS: (IF APPLICABLE)**

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### **ANNUAL PROGRESS REPORTS REGARDING OE RECOMMENDATIONS: (IF APPLICABLE)**

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