



**ORDEM DOS ENGENHEIROS
ENGINEERS PORTUGAL**

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

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

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Contact

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ENAAE GENERAL POLICY STATEMENT (approved by the administrative council 07/09/2006 and by the General Assembly 17/11/2006)

ENAAE is the development of ESOEPE (European Standing Observatory for the Engineering Profession and Education) which was established on 9 September 2000 with the purpose of "build[ing] confidence in systems of accreditation of engineering degree programmes within Europe", and facilitating "exchange of information", "voluntary agreements on accreditation of engineering educational programmes and recognition of engineering qualifications" and "the development of standards on the competence requirements of graduate engineers" (see www.feani.org).

To pursue their aims, in 2004 ESOEPE was instrumental in the submission to the EC (DG EaC) of the EUR-ACE project, that has elaborated a European system of accreditation of engineering programmes at the First and 7th "national" engineering accreditations agencies continue to award their certificates, to which the common EUR-ACE quality label is added. Framework Standards to be respected by participating agencies have been published.

The EUR-ACE project was concluded on 31 March 2006 with the presentation to the EC of the whole set of its Outputs Documents and their presentation in a public workshop organized together with the DC EaC. On that occasion, EUR-ACE has been listed among the six EC-sponsored "European quality labels in higher education" and invited to a meeting on the same day (31/03/2006).

In the meantime, in order to contribute more effectively to implement the EUR-ACE proposals, ESOEPE had decided to transform itself into a formal International Non-profit Association, denoted ENAAE (European Network for Accreditation of Engineering Education), as ratified by two ESOEPE General Assemblies (October 2005; March 2006).

ENAAE has then promoted the presentation of two grant applications to the EC (DG EaC), namely:

a) Under a Socrates Programme, a project (EUR-ACE IMPLEMENTATION), that aims at making the EUR-ACE proposals operational by

- initiating the award of EUR-ACE labels;
- promoting accreditation processes throughout Europe;
- arranging training for international accreditors;
- setting up a minimal administrative structure

In countries without a national system for accrediting engineering programmes, a new national agency will be promoted: in the meantime, accreditation certificates and the EUR-ACE label will be awarded by one of the participating agencies; alternatively, the national "general" accreditation agency may be contacted in order to integrate the EUR-ACE criteria in the accreditation of engineering programmes. In addition, a budgetary policy will be introduced to make the EUR-ACE system self-supporting by the end of the project (i.e. by the end of 2008).

b) Under the Tempus-Tacis Programme, a project (PRO-EAST: Promotion and Implementation of EUR-ACE Standards), the objectives of which are the promotion and implementation of the EUR-ACE standards for accrediting engineering programmes to the broad engineering community of Russian HEIs; approval in Russian HEIs of the EUR-ACE criteria and procedures and awarding the

"EUR-ACE label" to accredited programmes. The project intends thus to contribute to the integration of Russian Federation into the EHEA.

ENAE will actively contribute to running the EUR-ACE implementation and PRO-EAST projects, in full coherence with the objectives indicated in the Final Documents of the EUR-ACE project, to which ENAE is fully committed.

Therefore, in accord with the quoted EUR-ACE objectives, ENAE will try and establish gradually a bottom-up European system for accreditation of engineering education, as wide as possible and consistent with the general indication of the Bologna process, and in particular with the ENQA (European Association for Quality Assurance in Higher Education) "Standards and Guidelines for Quality Assurance in the EHEA" (European Higher Education Area) and the "Framework for Qualifications in the EHEA". In this system, national or regional agencies will accredit the educational programmes, and ENAE, on the advice of an ad-hoc Committee, will authorize them to add the EUR-ACE quality label to the accreditation.

The EUR-ACE label will be 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.

ENAE will monitor and respond to the development of all future degree programmes that may come within its scope.

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 (REQUISIT 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 characterize the offer provided by the School and its integration in the general context of the teaching projects competing with it.
	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 functioning	2.1- Specific competences and minimum requirements (REQUISIT 4)	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.	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 (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.	Tables that show the curricular structure and the articulation of the themes; minutes of the Course coordination meetings.
	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.	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	To verify if the School attends to the	Credible data on the presence of

REQUISITE		OBJECTIVES	EVIDENCE
	teachers in the running of the Course (REQUISIT 9)	anxieties, worries and needs of the teachers.	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 (REQUISIT 11)	To verify if the School attends to the students' expectations and worries about their professional performance.	Conclusions about the results of the Inquiries and documental proofs of the decisions made.
5- Facilities and 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

REQUISITE 1 – STRATEGY OF THE HIGHER EDUCATIONAL INSTITUTION

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. 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

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.

As such, the following should be provided:

- I. Justification with regard to satisfying minimum course requirements.

REQUISITE 5 – CURRICULUM STRUCTURE AND PEDAGOGIC PROGRAMME

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.

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

- I. 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.
- II. 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.
- III. 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.
- IV. 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.
- V. Information on rules for changing the natural sequence of disciplines and grounds to expel a student.

REQUISITE 6 – 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. Leadership 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 3 are fulfilled

2.2.3. TEACHING STAFF

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

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 for the previous 5 years.
- 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 in recent years, 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

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. Evaluation of the first semester

2.2.5. FACILITIES AND RESOURCES

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

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 five 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.

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, or
- ACCEPTABLE to grant the EUR-ACE Label (valid for six years), which may be given with recommendations (the general case) or 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

The underpinning knowledge and understanding of science, mathematics and engineering fundamentals are essential to satisfying the other programme outcomes. Graduates should demonstrate their knowledge and understanding of their engineering specialisation, and also of the wider context of engineering.

Second Cycle graduates should have:			
EUR-ACE	OE	Documental Evidence	Personal Interview Evidence
An in-depth knowledge and understanding of the principles of their branch of engineering;	The graduate must be able to identify, reproduce and interpret subjects, related to his/her area of expertise, through acquired scientific, mathematic and engineering knowledge. The graduate should also exhibit the same ability, albeit to a more limited extent, when dealing with subjects from other areas of expertise.	Course content; Technical exercises; Exams.	Learning attraction; Technical interest; Engineering talent.
A critical awareness of the forefront of their branch.	The graduate must be able to formulate supported opinions about advances and research trends in his/her area of expertise, based on acquired scientific, mathematic and engineering knowledge.	Course content; Case studies; Documentation access tools.	Decision capacity; Exemplary attitude; Fundamental knowledge.

4.2. ENGINEERING ANALYSIS

Graduates should be able to solve engineering problems consistent with their level of knowledge and understanding, and which may involve considerations from outside their field of specialisation. Analysis can include the identification of the problem, clarification of the specification, consideration of possible methods of solution, selection of the most appropriate method, and correct implementation. Graduates should be able to use a variety of methods, including mathematical analysis, computational modelling, or practical experiments, and should be able to recognise the importance of societal, health and safety, environmental and commercial constraints.

Second Cycle graduates should have:			
EUR-ACE	OE	Documental Evidence	Personal Interview Evidence
The ability to solve problems that are unfamiliar, incompletely defined, and have competing specifications;	The graduate must be able to understand the complexity of usual, unusual and undefined problems and formulate hypotheses, test solutions, identify the main factors which influence the results.	Course content; Technical exercises; Case studies; Stimulated discussions; Tests.	Structured mind; Ability to speculate; Prediction skills; Experience in a diversity of situations.
The ability to formulate and solve problems in new and emerging areas of their specialisation;	The graduate must be able to use fundamental knowledge complemented with new approaches and theories to investigate and solve technological problems with up to date techniques.	Course content; Technical exercises; Documentation access tools; Stimulated discussions.	Attraction towards innovation; Ability to make discoveries; Culture of innovation.
The ability to use their knowledge and understanding to conceptualise engineering models, systems and processes;	The graduate must be able to conceive models that interpret processes and natural phenomena with numerical analysis and digital and analogical systems and iteratively adjust the model.	Modelling intensive work; Field trips; Work establishing concepts.	Strong basic knowledge; Structured mind; Ability to speculate.
The ability to apply innovative methods in problem solving.	The graduate must be able to find innovative solutions using upgraded models and test the use of non traditional tools, systems and processes	Case studies; Stimulated discussions.	Attraction towards innovation and invention; Ability to make discoveries.

4.3. ENGINEERING DESIGN

Graduates should be able to realise engineering designs consistent with their level of knowledge and understanding, working in cooperation with engineers and non-engineers. The designs may be of devices, processes, methods or artefacts, and the specifications could be wider than technical, including an awareness of societal, health and safety, environmental and commercial considerations.

Second Cycle graduates should have:			
EUR-ACE	OE	Documental Evidence	Personal Interview Evidence
An ability to use their knowledge and understanding to design solutions to unfamiliar problems, possibly involving other disciplines;	The graduate must have the capacity to conceive of solutions taking into account environmental and economic aspects while developing the Engineering project, use methodologies and models to optimise solutions, and work with engineers and non-engineers from other specialities.	Course content; Case studies; Research projects; Extra-curricular projects.	Documentation skills; A broad knowledge of Engineering; Invention; Objectiveness;
An ability to use creativity to develop new and original ideas and methods;	The graduate must have the capacity to apply innovative solutions and assess their applicability in the design of goods, systems and processes.	Case studies; Stimulated discussions.	Invention; Hands-on personality; Documentation skills.
An ability to use their engineering judgement to work with complexity, technical uncertainty and incomplete information.	The graduate must have the capacity to establish conditions, formulate hypothesis and try out models to evaluate solutions, undefined situations and undefined parameters taking in account and compensating for inadequate forecasting.	Research projects; Work reports; Case studies; Exams.	Strong basic knowledge; Structured mind; Ability to speculate.

4.4. INVESTIGATIONS

Graduates should be able to use appropriate methods to pursue detailed investigations on technical issues consistent with their level of knowledge and understanding. Investigations may involve literature searches, the design and execution of experiments, the interpretation of data, and computer simulation. They may require that databases, codes of practice and safety regulations are consulted.

Second Cycle graduates should have:			
EUR-ACE	OE	Documental Evidence	Personal Interview Evidence
The ability to identify, locate and obtain required data;	The graduate must be able to use different tools to identify, locate, obtain and organise the required data for a given purpose.	Research projects; Documentation access tools; Documentation organisation tools.	Learning attraction; Objectiveness;
The ability to design and conduct analytic, modelling and experimental investigations;	The graduate, when exposed to a problem from his/her area of expertise, must be able to: conceive experiments; conceive models; use and/or build and/or adapt equipment or systems for analytical purposes.	Research projects; Documentation access tools; Modelling intensive work; Laboratory work; Stimulated discussions; Statistics disciplines.	Strong basic knowledge; Invention; Persistency; Hands-on personality.
The ability to critically evaluate data and draw conclusions;	The graduate must be able to interpret experimental and bibliographic data, and adjust the design of models while maintaining a physical meaning.	Research projects; Course Content; Laboratory work; Stimulated discussions; Statistics courses.	Strong basic knowledge; Strong reasoning ability;
The ability to investigate the application of new and emerging technologies in their branch of engineering.	For research in his/her branch of engineering, the graduate must have the ability to explore the use of proven technologies or new and emerging technologies in previously untested applications.	Research projects; Documentation access tools; Laboratory work; Stimulated discussions;	Attraction for innovation; Invention; Persistency; Ability for discovering; Hands-on personality.

4.5. ENGINEERING PRACTICE

Graduates should be able to apply their knowledge and understanding to developing practical skills for solving problems, conducting investigations, and designing engineering devices and processes. These skills may include the knowledge, use and limitations of materials, computer modelling, engineering processes, equipment, workshop practice, and technical literature and information sources. They should also recognise the wider, non-technical implications of engineering practice, ethical, environmental, commercial and industrial.

Second Cycle graduates should have:			
EUR-ACE	OE	Documental Evidence	Personal Interview Evidence
The ability to integrate knowledge from different branches, and handle complexity;	The graduate must be able to apply different tools, having a realistic and integrated overview of Engineering activities and the way they must work together within the same objective.	Course content; Case studies; Stimulated discussions; Documentation access tools.	Applications experience; A broad knowledge of Engineering; Ability to synthesize; Objectiveness.
A comprehensive understanding of applicable techniques and methods, and of their limitations;	The graduates must recognize and be able to apply technological systems, their particularities and use, adapting methods to each situation.	Practical method presentations; Case studies; Field trips; Laboratory work.	Applications experience; Objectiveness.
knowledge of the non-technical implications of engineering practice.	The graduate must have the capacity to overcome problems, conflicts, difficulties; he/she must decide through evaluating alternatives, risks, importance and priority.	Problem solving; Case studies; Field trips.	Applications experience; Persistency; Objectiveness.

4.6. TRANSFERABLE SKILLS

The skills necessary for the practice of engineering, and which are applicable more widely, should be developed within the programme.

Second Cycle graduates should be able to:			
EUR-ACE	OE	Documental Evidence	Personal Interview Evidence
Fulfil all the Transferable Skill requirements of a First Cycle graduate at the more demanding level of Second Cycle;	The graduate must accumulate management skills to organize, plan, control and coordinate; the graduate must have economic and commercial sensibility that facilitate his/her performance when carrying out high level responsibility jobs.	Management courses; Group work reports; Individual report assignments ; Work presentations.	Management driven; Self-confidence.
Function effectively as leader of a team that may be composed of different disciplines and levels;	The graduate must understand and use leadership techniques and must be sensible to work environment aspects as well as safety, environment and the social responsibility of those involved in economic activity.	Leadership techniques disciplines; Group work disciplines.	Leadership competences; Self-confidence.
Work and communicate effectively in national and international contexts.	The graduate must have the ability to communicate in different languages, different cultures and different contexts in order to achieve the objectives he/she is involved in. The ability to use informatic and other technological developments to communicate more effectively is also required.	Communication techniques disciplines; Work presentations.	Communication competences; Foreign language skills; Self-confidence.

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 or EXCEL format, as appropriate, will be supplied. For those cases where information should have to be repeated (such as the case of the list of course subjects in different tables) files will be supplied in EXCEL format in such a way that this information will have to be introduced only once.

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 FORMALISATION

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

Higher Education Institution strategy concerning the Course, outlining the target group, competitive advantages, threats and sustainability.

SHEET 6 - COOPERATION WITH OTHER INSTITUTIONS

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

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

Distribution of weekly class hours, subject options and subject outlines

SHEET 10 - SUBJECT SHEETS

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

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

SHEET 12 - OUTCOMES

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

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

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

List and breakdown of staff in charge of subjects.

SHEET 16 - COURSE DIRECTOR SHEET

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

SHEET 17 - TEACHING STAFF SHEETS

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

SHEET 18 - TEACHING STAFF PERSPECTIVE

General opinion of teaching staff on all aspects of the Course

SHEET 19 - MOVEMENT OF STUDENTS

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

SHEET 20 - STUDENTS AND EMPLOYERS' EVALUATION

Survey results and action taken each academic year.

SHEET 21 - SUITABILITY OF PREMISES

Overall information concerning quality and adequacy of premises.

SHEET 22 - PEDAGOGIC FACILITIES

Overall information on pedagogical facilities .

SHEET 23 - COURSE MONITORING: RATES OF SUCCESS

Information concerning enrollments and approvals

SHEET 24 - COURSE MONITORING: DESIGN/PROJECT WORK

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

SHEET 25 - COURSE MONITORING: FOR SELF-CONTROL

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

SHEET 26 - QUALITY PLAN

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)

Master Course in
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 ¹

(INSTITUTE, FACULTY, SCHOOL, UNIVERSITY)

INSTITUTION:	
---------------------	--

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

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	

*

N° OF STUDENTS IN THE ACADEMIC YEAR - N-1/N = EG. 2007/2008

	<i>N-5/N-4</i>	<i>N-4/N-3</i>	<i>N-3/N-2</i>	<i>N-2/N-1</i>	<i>N-1/N</i>
N° OF FCL OR IM FIRST REGISTRATIONS ²					
N° OF SCM FIRST REGISTRATIONS ³					
TOTAL NUMBER OF FIRST REGISTRATIONS					
TOTAL REGISTERED IN FL COURSES					
TOTAL REGISTERED IN SCM COURSES					
TOTAL REGISTERED IN IM COURSES					
TOTAL REGISTERED IN FCL, SCM OR IM COURSES					
N° OF FIRST REGISTRATIONS AS DOCTORAL STUDENTS					
TOTAL REGISTERED AS DOCTORAL STUDENTS					

¹ 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.

² Includes first registrations in First Cycle *Licenciatura* courses and in Integrated Master courses

³ Includes only those first registrations directly in Second Cycle Master courses (90 or 120 RCTS courses)

S1. INTRODUCTORY DATA ABOUT THE INSTITUTION: PART A

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

<i>Conclusions (certificates issued) of FCL⁴</i>					
<i>Conclusions (certificates issued) of SCM/IM⁵</i>					
CONCLUSIONS OF FCL+SCM/IM					
<i>Conclusions of PhDs</i>					

ADDRESS OF PREMISES

--

⁴ All 'Licenciado' certificates

⁵ All Master certificates

S3. INTRODUCTORY DATA ABOUT THE INSTITUTION – PART C⁷

(INSTITUTE, FACULTY, SCHOOL, UNIVERSITY)

INSTITUTION:	
---------------------	--

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.

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.

⁷ 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.

S4. COURSE FORMALISATION – PR 1

INSTITUTION:	
COURSE:	

CURRENT PROGRAMME

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

PROOF OF COURSE'S LEGITIMATE RUNNING:

--

NEW PROGRAMME PENDING APPROVAL (IF APPLICABLE)

DATES

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

S5. HEI⁸ STRATEGY CONCERNING THE COURSE – R1

INSTITUTION:	
COURSE:	

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:

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

COURSE SUSTAINABILITY:

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

⁸ HEI – Higher Education Institution

S6. COOPERATION WITH OTHER INSTITUTIONS⁹ – R3

INSTITUTION:	
COURSE:	

PROTOCOLS AND PARTNERSHIP AGREEMENTS WITH OTHER INSTITUTIONS/ORGANIZATIONS:

--

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

--

⁹ 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	/
---	---

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

CONTACT TIMES (HOURS PER WEEK):

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

CONTACT TIMES (HOURS PER WEEK):

YEAR	4 TH YEAR		5 TH YEAR	
	1 ST	2 ND	1 ST	2 ND
SEMESTER				
LECTURES				
TUTORIALS				
PRACTICAL / PROJECT				
TOTAL				

NUMBER OF STUDENTS IN THE LAST 5 YEARS:

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

COURSE GENERAL OUTCOMES:

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

INSTITUTION:	
COURSE:	

OUTCOMES (COMPETENCES AND SKILLS) PER SCIENTIFIC AREA:

AREA 1
AREA 2
AREA 3
AREA 4
AREA 5

S10. SUBJECT SHEET – R5/R6

INSTITUTION:	
COURSE:	
SUBJECT/UNIT:	

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

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

** Basic/Intermediate/Advanced

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

S10. SUBJECT SHEET – R5/R6

INSTITUTION:	
COURSE:	
SUBJECT/UNIT:	

Main Teaching Material Namely main textbooks and other basic support texts					
Complementary Teaching Material Complementary references of books, papers and technical information, as appropriate					
Teaching/Learning Tools Software, e-learning tools, etc..					
Previous knowledge assumed as acquired <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><u>Material</u></td> <td style="width: 50%;"><u>Source</u></td> </tr> <tr> <td>Describe in rows expected knowledge</td> <td>AND Identify Units where they are taught</td> </tr> </table>		<u>Material</u>	<u>Source</u>	Describe in rows expected knowledge	AND Identify Units where they are taught
<u>Material</u>	<u>Source</u>				
Describe in rows expected knowledge	AND Identify Units where they are taught				
Teaching/learning methodology Namely describe innovative methods					
Characterization of objectives and program A – Estimated percent distribution of scientific and technological contents <ul style="list-style-type: none"> ▪ Scientific component (establishes and develops scientific bases) – ?? ▪ Technological component (apply to design and process operation) - ?? % 					
Characterization of objectives and program B – 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 – Transferable Skills -					

III – ASSESSMENT PROCEDURE	
Self Assessment – Example sheets, paper & pencil versus computer-aided worked examples.	
Teacher’s Assessment –	

S11. COMPLEMENTARY ACTIVITY SHEET – R5/R6

INSTITUTION:	
COURSE:	
ACTIVITY : (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
FORMAL PREREQUISITES:				
TEACHING STAFF				
	NAME	POSITION	ACADEMIC BACKGROUND	% OCC.
COORDINATOR				
OTHER				

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

S11. COMPLEMENTARY ACTIVITY SHEET – R5/R6

INSTITUTION:	
COURSE:	
ACTIVITY : (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 –

Transferable Skills -

III - ASSESSMENT PROCEDURE

Self Assessment –

Students reports and other

Teacher’s Assessment –

S12. OUTCOMES – R7

INSTITUTION:	
COURSE:	

CORE STRUCTURE

COMPULSORY SUBJECTS	Y	S	KNOWLEDGE AND UNDERSTANDING	ENG. ANALYSIS	ENG. DESIGN	INVESTIGATIONS	ENG. PRACTICE	TRANSF. SKILLS
(add rows as required)								

ELECTIVES

(add rows as required)								

COMPLEMENTARY ACTIVITIES

CONFERENCES, VISITS, COMPETITIONS, VOLUNTARY PROJECTS, ETC.	Y	S	KNOWLEDGE AND UNDERSTANDING	ENG. ANALYSIS	ENG. DESIGN	INVESTIGATIONS	ENG. PRACTICE	TRANSF. SKILLS
(add rows as required)								

S16. COURSE DIRECTOR SHEET – R8

INSTITUTION:	
COURSE:	
NAME:	
ACADEMIC POSITION:	YEAR OF BIRTH:
PERSONAL WEBSITE URL:	E-MAIL:

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	

S16. COURSE DIRECTOR SHEET – R8

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

S16. COURSE DIRECTOR SHEET – R8

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

INSTITUTION:	
COURSE:	
NAME:	
ACADEMIC POSITION:	YEAR OF BIRTH:
PERSONAL WEBSITE URL:	E-MAIL:

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	

S17. TEACHING STAFF SHEET – R8

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

S17. TEACHING STAFF SHEET – R8

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

INSTITUTION:	
COURSE:	

MEMBER OF TEACHING STAFF	
SUBJECT AREA	

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

INSTITUTION:	
COURSE:	

PREREQUISITES

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

COREQUISITES

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	2 YEARS	3 YEARS	4 YEARS	>4 YEARS	

S20. STUDENTS AND EMPLOYERS' EVALUATION – R11

INSTITUTION:	
COURSE:	

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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S21. SUITABILITY OF PREMISES – R12

INSTITUTION:	
COURSE:	

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 FACILITIES – R13

INSTITUTION:	
COURSE:	

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.

S24. COURSE MONITORING: DESIGN/PROJECT WORK – R14

INSTITUTION:	
COURSE:	

ACADEMIC YEAR:	/
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STUDENT'S NAME (ABBREV.)	FINAL MARK	TITLE OF WORK
(add rows as required)		

S25. COURSE MONITORING: SELF-CONTROL – R14

INSTITUTION:	
COURSE	

INSTITUTIONAL ANALYSIS OF COURSE'S GENERIC INDICATORS

Example of generic indicators: 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

INSTITUTION:	
COURSE:	

DIAGNOSTIC METHODS:

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IDENTIFICATION OF CRITICAL ASPECTS:

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HANDLING OF OE RECOMMENDATIONS:

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ANNUAL PROGRESS REPORTS REGARDING OE RECOMMENDATIONS:

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