



**RE-ACCREDITATION OF THE UNIVERSITY OF SPLIT
FACULTY OF ELECTRICAL ENGINEERING, MECHANICAL
ENGINEERING AND NAVAL ARCHITECTURE**

Date and place of the visit: 23 - 24 April 2012, Split

July, 2012

Composition of the expert panel

- Prof. dr. sc. Ivo Ipšić, Faculty of Engineering, University of Rijeka
- Prof. dr. sc. Snježana Rimac-Drlje , Faculty of Electrical Engineering, University of Osijek
- Prof. Geoffrey Hammond, PhD, University of Bath
- Prof. Stefan Dickmann, PhD, Helmut Schmidt University Hamburg, Faculty of Electrical Engineering
- Davor Karlović, univ. bacc. ing. el., student, Faculty of Engineering, University of Rijeka

Expert panel was supported by:

- mr. sc. Sandra Bezjak, coordinator, Agency for Science and Higher Education
- Vlatka Derenčinović, prof., interpreter at the site visit, Agency for Science and Higher Education

CONTENTS

INTRODUCTION	4
SHORT DESCRIPTION OF THE EVALUATED INSTITUTION	4
THE WORK OF THE EXPERT PANEL.....	5
DETAILED ANALYSIS BASED ON THE RE-ACCREDITATION STANDARDS AND CRITERIA	6
1. MANAGEMENT OF HIGHER EDUCATION INSTITUTION AND QUALITY ASSURANCE	6
2. STUDY PROGRAMMES	8
3. STUDENTS	10
4. TEACHERS	13
5. SCIENTIFIC AND PROFESSIONAL ACTIVITY.....	15
6. MOBILITY AND INTERNATIONAL COOPERATION	17
FINAL REPORT AND RECOMMENDATIONS OF THE EXPERT PANEL.....	20
ADVANTAGES	20
DISADVANTAGES	21
RECOMMENDATIONS FOR IMPROVEMENT OF QUALITY	22

INTRODUCTION

Short description of the evaluated institution

The University of Split Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture (FESB) is one of the largest faculties of the University of Split and the second largest technical faculty in Croatia. The Faculty consists of five departments (Electrical Engineering, Electronics, Mechanical Engineering and Naval Architecture, Mechanical Engineering Technology, Mathematics and Physics). It also has a library and a computer centre. FESB offers undergraduate, graduate and postgraduate university programmes as well as professional studies. Currently, more than 2700 students are enrolled. FESB has over 240 full-time employees, out of which 165 are involved in teaching. There are 37 full professors, 21 associate professors, 16 assistant professors, 12 senior lecturers and lecturers, 12 senior assistants and assistants, 48 junior assistants and 19 laboratory assistants. The Faculty is active in research. There are several international and national research projects and cooperation contracts with companies. International conferences have been organized by faculty members.

FESB's mission is to educate experts who are able to contribute to the development to the Croatian economy and to continuously adjust to modern global trends in scientific research, professional and educational activities.

The work of the expert panel

In line with the document *Procedure for Re-accreditation of Higher Education Institutions*, the expert panel, analysed the self-analysis document drafted by the University of Split Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture and visited the institution on April 23th and 24th 2012.

During the site visit the members of the expert panel had separate meetings with the management, teachers, assistants, students, representatives of various committees and other staff and students, and did a tour of the facilities (e.g. lecture rooms, libraries) in line with the previously defined Visit Protocol. These meetings gave the expert panel members a direct insight into the activities and work conditions at the University of Split Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture.

During the site visit, the experts were also presented with additional sources of information:

Sources of additional information:

- Document describing the 2012-2016 Faculty Strategy
- Book on the Faculty published on the occasion of its 50th anniversary.

DETAILED ANALYSIS BASED ON THE RE-ACCREDITATION STANDARDS AND CRITERIA

1. Management of higher education institution and quality assurance

- 1.1. FESB provided a document describing its strategy for the years 2012-2016. Deduced from the general Vision and Mission statements, the strategy mentions seven strategic goals related to teaching activities, scientific activities, external cooperation, quality system, human, financial and material resources. The strategy is very well defined: altogether, 77 concise tasks are listed. For each task, a detailed, but clear task description, a performance indicator, responsible bodies and deadlines are listed.
- 1.2. FESB's organizational structure is formalized in its legal documents. There are 5 departments which partly overlap as a consequence of tradition. FESB plans to adapt this structure to modern demands by creating more and smaller departments according to the study programmes. **It is recommended to undertake steps towards restructuring and to include related tasks in the strategy.**
- 1.3. There is no written strategy document of the University, but there is a university strategy for research to which the Faculty strategy is aligned. The future role of the professional study programme is an important factor for the Faculty structure. **It is recommended that the Faculty contributes to a University strategy which also clarifies the future role of the professional study programmes of the Centre for Professional Studies.**
- 1.4. The study programmes offered are aligned with the Faculty mission. There is one exception: the Industrial Engineering programme, despite of being an attractive mixture of components, has a problem with the formal recognition of its degree. This has driven many students into a desperate situation. **It is recommended that the Faculty either solves the problem of the Industrial Engineering Programme quickly or discontinues it.**

- 1.5. The study programmes are fully aligned with the baseline of the Croatian Qualifications Framework.
- 1.6. The document "Strategy 2012-2016" which was accepted by the Faculty Council in November 2011 defines the strategic goals, indicators and benchmark strategies for all aspects of internal operations. In 2009, the Committee of Quality Assurance was established which holds regular meetings and organizes, coordinates and implements quality assurance procedures. Now, a Handbook on Quality is being drafted. The preparatory phase for establishing a continuously working quality assurance system has been completed.
- 1.7. The Faculty conducts student and teacher surveys twice a year and has introduced an effective electronic system for monitoring class attendance. Moreover, there are various activities to attract skilled future students. It is planned to introduce methodological and didactics training for teachers using best practice. This has already been implemented in the medical faculties. The University will decide how this will be regulated at the level of all faculties.
- 1.8. Formal mechanisms for monitoring and improvement of the research quality have been established.
- 1.9. The Faculty adopted a Code of Ethics which determines ethical principles in higher education, science and research. The Ethics Committee aims at achieving the promotion of ethical principles. In this context, cheating in exams is the prevailing issue. **It is suggested to restrict the access to the list of students who cheated.**
- 1.10. The staff and the students are acquainted with the ethical behaviour rules. **The occurrence of cheating in exams suggests it is necessary to increase the student's awareness of ethical rules.**

2. Study programmes

2.1. The institution defined its enrolment quotas based on the available personnel, space and equipment, as well as taking into account the demand of the labour market for educated professionals in the technical field. According to the data provided in the Self-analysis most graduates are employed. Exceptions are the students who finished the Industrial Engineering Studies. The Faculty should align itself to the long term strategic needs of the country in order to produce qualified engineers who will have impact on the society (developing new products). At the moment, achieved learning outcomes of the Industrial Engineering Programme do not ensure the employability of graduates. Large number of applicants as well as the existence of the similar study programmes in Europe justify the existence of the Industrial Engineering Studies, but **the Faculty should make an effort regarding the labour market recognition of this programme. The institution should undertake an initiative to solve the problem and protect the students. If the number of unemployed students remains as it is, the enrolment policy should be reconsidered for the Industrial Engineering Studies. The panel felt that future careers of students were seriously threatened by current arrangements.**

2.2. The Faculty has institutional resources for quality teaching of the existing students. The real problem is the pass rate of students. Especially high percentages of students who lose their right to study (due to non-fulfilment of study obligations and failing exams) are on the Mechanical Engineering and Naval Architecture studies. The institution recognizes that problem and concludes that one reason for low passing rate is a relatively large number of under-motivated students enrolled at the Faculty as well as poor prior knowledge of high school graduates. **To solve this problem, the institution should make extra efforts to attract high school students with good grades as well as to help students on the first year by offering them some extra courses. Also, the Faculty should reconsider the existing enrolment policy.**

2.3. The course learning outcomes arise from the established goals at each programme level and these are developed in accordance with the Dublin

descriptors. Each of the teachers defines learning outcomes for their courses and they clearly describe knowledge and skills of the graduates. It should be mentioned that at the moment achieved learning outcomes of the Industrial Engineering Programme do not ensure the employability of graduates.

- 2.4. Assessment of student learning is aligned with stated learning outcomes and assesses learning at the level of rigor appropriate to the qualification level. Achievement of this is established through mid-term exams, exercises, laboratory work and final exams.
- 2.5. During the site visit the students stated that different courses with the same number of ECTS do not require the same amount of student workload. Although some minor changes have been introduced to existing study programmes, **ECTS should be subject to systematic upgrading. This could be accomplished through the work of the Committees for Proposing Amendments to the Curricula.**
- 2.6. Engineering science study programmes conform to internationally recognized standards. The recommendations of international professional associations (Zephi, etc.) and the German Accreditation Agency ASIIN were followed in creating the programmes of study.
- 2.7. The course classes are organized in forms of lectures and exercises (auditory, laboratory or design) that are appropriate for teaching engineering science. The Learning Management System - LMS, introduced in the academic year 2005/2006, makes teaching, as well as the evaluation of students' work and teacher-student correspondence, easier.
- 2.8. The implemented E-learning system assures sufficient learning materials for students. The expert panel recommendation is that **teachers should have unified approach of developing teaching/learning materials. Also, the institution should develop an E-learning strategy.**
- 2.9. Practical classes are conducted through laboratory exercises and the Faculty does not have other location for practical work. An exception is the Naval Architecture study where practical work is an integral part of study

programme. During the site visit the students expressed the need for more practical work and volunteering in Faculty projects. More effort should be invested in drafting new agreements between the Faculty and the companies regarding student internships, and modifying the existing ones.

- 2.10. New study programmes are proposed, approved, and implemented through a formal process defined by the Ministry of Science, Education and Sports. Monitoring and improvement of study programmes follow this procedure: the Dean of the Faculty appoints a committee and the entire proposal of changes in the study programme is adopted by the Faculty Council and approved by the University Senate. Recommendation: **the process of monitoring development, innovation and improvement of the existing study programmes should include other stakeholders. This is particularly important for the Industrial Engineering programme in the context of improving its labour market recognition.**

3. Students

- 3.1. All necessary information about the level of study programmes, qualifications and academic titles as well as possibilities for further education and employment are available at the Faculty website <http://www.fesb.hr/Upisi/tabid/116/Default.aspx>. The website also contains useful general information about conditions for enrolment and quotas for undergraduate, graduate, postgraduate and professional study programmes, and the online study guide. The Faculty published two brochures for future students to review when deciding on studies - 'Little Study Guide' and 'Student Life'. Future students can also attend lectures organized by the Faculty Alumni Association (<http://ubs.fesb.hr/ubs/>).
- 3.2. Admission criteria and procedures are also publicly stated at the Faculty website (<http://www.fesb.hr/Upisi/tabid/116/Default.aspx>), and consistently applied. The criteria and procedures are regularly reviewed for their effectiveness in predicting students success in a programme especially when it is considered that a relatively large number of under-motivated students enrol at the Faculty mainly to obtain student rights.

- 3.3. Success achieved in high school and at the State Matura Exam are evaluated upon admission. No other criteria are used to test the competencies of candidates and the level of their prior learning. It is considered that the insufficient level of prior learning and poor motivation of students cause low pass rates among first year students. A rise in the number of candidates with lower average grades, as well as a decrease in the number of enrolled high school graduates have been noticed. **The Faculty should work systematically to attract successful high school graduates from the area. This could be accomplished by establishing contacts with students in the early stages of their study, e.g., possibly in the context of many extracurricular activities encouraged by the Faculty.**
- 3.4. The Faculty organises and supports large number of extracurricular activities for students, e.g. the work on student radio. The Faculty also promotes the work of many student associations, such as the Mechanical Engineering Student's Association (UPS), or the Association of Young Programmers (DUMP), which achieve excellent result in competitions such as the "Microsoft Imagine Cup", and the Split branch of the IEEE Croatian section. The Faculty also supports student involvement in IAESTE (the International Association for the Exchange of Students for Technical Experience). The Faculty co-finances international mobility of its students and supports incoming students in IAESTE programmes. Calls for proposals for student projects are regularly published.
- 3.5. The institution offers counselling to students in the form of regular in-person and online consultations. Mentoring in the form of guidance when writing the final thesis, graduation thesis, and doctoral dissertation, has not been formalized. The Faculty facilities are adapted to students with special needs. **It is recommended that the Faculty formalizes its support and mentorship system and notifies the students about it.**
- 3.6. The institution regularly monitors the level of student standard. The capacities and organization of student nutrition at the Faculty are satisfactory. The students actively participate in cultural, sports and general social events offered by the Faculty. However, **the accommodation in student**

dormitories is not satisfactory, and this issue should be solved at the University level.

- 3.7. The Faculty has an active Students' Council that maintains positive relations with the Faculty management. The Faculty supports the work of the Student Council.
- 3.8. The Faculty constantly monitors the levels of student knowledge. Continuous assessment is carried out in three parts, in three mid-term exams, and the final grade is determined at the final exam. Students are satisfied with the exam timetable published in advance. However, some of them expressed their discontent with all mid-exams taking place during one week of each semester, which they find quite strenuous. Recommendation: **To reconsider rescheduling the exam timetable, with mid-term exams taking place during e.g. ten days or two weeks period. These changes should be done after consultations with students.**
- 3.9. Although the institution keeps statistics on the employability of its graduates they consider it a difficult task since the data from the Croatian Employment Service does not follow the structure of study programmes (especially the harmonisation of old and new academic titles).
- 3.10. The Faculty maintains contact with its former students. The Alumni Association with over 400 members has been active since 2004. The Alumni Association tries to encourage former students to connect with each other, and with the Faculty through different activities.
- 3.11. The large number of student representatives in the Faculty Council provides them with the opportunities to participate in the institution's decision-making processes and in the resolution of matters affecting their experience. It has been noted that the students do not have the habit of using the possibilities of support offered by their student representatives or the Student Council. Therefore, it is recommended to the Student Council to develop and implement activities to connect more with students.

- 3.12. Various information packages inform potential students about the level of study programmes, etc. (criteria 3.1.). However, the panel did not find any formal examples of systematic informing of the public by the Faculty about its study programmes, learning outcomes, qualifications and academic titles, as well as possibilities for employment. No communication plan has been developed. Recommendation: **To develop a system to better inform the public of its activities and accomplishments.**
- 3.13. Student involvement in the Faculty Council gives them the opportunity to express their opinions and proposals for improvement. Furthermore, the Student Ombudsman helps students with their problems.
- 3.14. Student questionnaires are carried out continuously during the academic year. During the site visit the students mentioned that they were not regularly informed about the measures implemented on the basis of their suggestions and opinions. **It is recommended that the Faculty develops a system to regularly inform students about changes, i.e., the measures implemented on the basis of their suggestions and opinions.**

4. Teachers

- 4.1. The qualification structure of the teaching staff at the Faculty is adequate and the average age of all categories of teachers is satisfactory. The number of teaching assistants is not optimal, since the ratio between professors and assistants is one to one. **It is recommended that the Faculty recruits more teaching assistants, especially for courses with a large number of students.**
- 4.2. The institution has a policy of growth and development of human resources, which is well implemented. The fundamental problem with the personnel policy is the insufficient number of assistants and junior researchers. **The expert panel therefore issues a recommendation for the Ministry for a higher recruitment of assistants and junior researchers.**

- 4.3. One of the major problems is the lack of teaching and academic staff in respective fields (mathematics, computer engineering). The Faculty employs a sufficient number of full-time teachers who have different teaching workloads. Since many teachers are overloaded, the suggestion of the panel is to **take measures in order to balance the workload of teachers and decrease the overload of some teachers.**
- 4.4. The Faculty employs a sufficient number of full-time teachers and the ratio between students and full-time teachers is satisfactory, but **it could be significantly improved if more associates with scientific-teaching titles would be employed.**
- 4.5. Despite the institutional care for human resources which includes support for young researchers and teachers for attending doctoral and postdoctoral studies abroad, study visits to foreign institutions, participation in international projects, conferences, workshops and courses, there are no activities regarding monitoring and professional development of teaching staff. Unfortunately, there is no systematic care in the field of pedagogical education and there is no systematic teacher training in the field of teaching methodology, didactics, psychology or pedagogy. **It is recommended that the institution implements training and mentoring for young teachers in the mentioned fields.**
- 4.6. Procedures for teachers' advancement are implemented and accepted by employees.
- 4.7. The institution has no clear policy governing the assignment of teachers' workload which includes teaching, research, mentorship and student consultations. The Faculty teachers have time for research but not enough funding to purchase adequate and up-to-date research equipment. **It is recommended that the institution develops a model to solve the unbalanced workload of teachers and introduce systematic monitoring of the balance between teaching, research, mentorship and student consultations.**

4.8. The institution has no formal procedures for external engagement, besides the Dean's approval. The Regulations on External Collaboration of the University of Split, which came into force last year, further regulate the issue of cooperation among the constituent parts of the University as well as interuniversity cooperation.

5. Scientific and professional activity

5.1. The Faculty has a clear vision of where they want to go in terms of research projects, including national ones and an ever-increasing focus on EU activities. It aims to encourage traditional, well-established activities, as well as supporting new ventures in the areas such as IT, nanotechnologies and renewable energy sources (solar and wind energy). FESB seeks to support its active and highly-qualified researchers. The Faculty intends to develop a more integrated structure with new units for research that might form 'centres of excellence'.

5.2. FESB has been traditionally strong in fundamental research [in the area of electromagnetics; an excellent physics group (that collaborates with CERN, the Institute Rudjer Boskovic, and the University of Rijeka); and in mechanical engineering]. It has 26 national and 14 international projects. Two computer science postgraduates did their PhDs at CERN. One of the FESB strategic goals is to establish a science and technology park at Gučevica near Split in collaboration with the colleagues from Freiburg. Because of the relatively weak position of Croatian industry in the current economic recession, the Faculty and its research groups will focus on the development of international projects.

5.3. Research, publishing and related activities are seen as an important component of the Faculty's activities. This permeated down from the FESB management right to the level of junior researchers. See also 5.4 and 5.5 below.

5.4. Activities aimed at supporting younger researchers are mostly implemented. A close working relationship is encouraged with senior staff (this was acknowledged by junior researchers). The Faculty stimulates young researchers to travel and participate in scientific conferences. It uses a limited

amount of its funds to acquire new equipment to support the research of younger staff members. They are also encouraged to publish research papers in reputable journals. These are monitored, particularly in the context of the FESB research reports. Recently the junior researchers have been evaluated via their performance at research seminars (during the Faculty Open Days), and those that perform well are awarded in terms of support for their scientific activities.

- 5.5. The Faculty is recognised as being part of the best ranked Croatian university in terms of publications per member of staff. This is a reflection of its policy of promoting research excellence, including engagement with research peers elsewhere in Europe and the world. Publishing is seen by researchers as one of the criteria for advancement into scientific/teaching grades. Journals are selected on the basis of their match with priority areas of research, impact factors, prestige or tradition of the journal (as in the case, for example, of IEEE journals), the number of review cycles, and the like.
- 5.6. The institution has mostly implemented a policy of encouraging academic publishing, although without a clear systematic approach. Notwithstanding that, it has been remarkably successful over recent years in getting its researchers to publish in journals. The Faculty management indicated that it would introduce additional measures to further stimulate research publication. Recommendation: **the Faculty should formalise the way in which it encourages academic publishing of research findings in a more systematic manner.**
- 5.7. The self-evaluation document contains multiple evidence of scientific productivity in terms of Croatian and international publications, citations, and other measures. The ICT research group, for example, has been organising an international conference for the last 20 years. In addition, it publishes the Journal of Communications Software and Systems (jointly with the Croatian Communications and Information Society and cited in Scopus).
- 5.8. The Faculty supports professional activities and services, as well as knowledge and technology transfer. Electrical and power engineers, for instance, have engaged with the Croatia Telecom (over the location of a base

station), and France Telecom (concerning electromagnetic interference). The FESB Science Committee intends to produce a Research Report every two years. This will provide information on the activities of the research groups, including collaborations such as that with Ericsson Nikola Tesla and the Agency for Communications. FESB has an impressive activity in the field of outreach or the public understanding of science and technology, including the local Festival of Science and Science Cafe type ventures.

6. Mobility and international cooperation

- 6.1. The Faculty actively promotes both outgoing and incoming mobility of students. Each year ten foreign students carry out their internship at the. The Faculty also supports them financially by giving them 700.00 HRK per week. The Faculty has not started initiatives for attracting students from other Croatian faculties. **Recommendation: The Faculty should find the ways to attract students from other related Croatian higher education institutions.**
- 6.2. A number of students carry out their internships abroad within ERASMUS Programme. Some students also carry out internships with the IAESTE. The institution thus encourages students to complete some portion of their programme abroad.
- 6.3. The institution has a well-developed policy for international cooperation, which has been developed since the foundation of the faculty. The mobility of teaching staff is encouraged by supporting short- and long-term stays at foreign institutions as well as cooperation with foreign scientific and teaching institutions and foreign industrial partners. A large number of bilateral and international research projects have been implemented.
- 6.4. The majority of teachers are members of international professional and scientific associations. The institution has a large number of scientific agreements with European universities and research institutions.
- 6.5. Each year ten foreign students carry out their internship at the Faculty. The Faculty also supports them financially by giving them 700.00 HRK per week. Apart from this initiative, the Faculty has not ensured conditions for

attracting students from abroad. In order to attract international students more courses should be carried out in English. Lack of space in the university dormitories might also pose a threat to attracting foreign students.

Recommendation: Large number of courses should be offered in English.

6.6. The institution has developed cooperation in the EU Life Long Learning Programme Erasmus within which the student mobility has been steadily increasing. **It is recommended that the institution further motivates students and teachers to participate in the LLL and mobility programmes like Erasmus.**

6.7. Researchers from FESB have established cooperation with a wide range of research institution in Europe from which a large number of bilateral and international projects resulted. In terms of international cooperation, the institution has achieved considerable results (CERN, Blaise Pascal University, Mälardalen University, Wessex Institute of Technology, etc.), as well as in terms of student and teacher mobility (Tempus, Erasmus, etc.)

7. Resources: *professional services, space, equipment and finances*

7.1. The Faculty is well equipped with classrooms, laboratories and computer rooms. In addition, there is a large mechanical workshop and a wireless network which enables students to have internet access on personal laptop computers.

7.2. The qualifications of the non-teaching staff are in line with their tasks. If necessary, employees are sent to professional training. **It is recommended to develop a systematic approach for the professional development of non-teaching staff.**

- 7.3. , 7.4. The computer equipment is according to international standards. The technical and scientific equipment is operational, but should be modernized regularly.
- 7.5. The Faculty has implemented a very comprehensive data collection and data analysis system covering all relevant activities and resources.
- 7.6. The Faculty has a library which allows access to physical and online resources. Compared to the size of the faculty, the library is rather small and the access to electronic journals is limited.
- 7.7. The ratio of teaching vs. non-teaching staff is appropriate. The Faculty's ability to change it in a strategic planning cycle is limited.
- 7.8. The sources of finance and all conditions related to financing are transparent as far as this can be influenced by the Faculty.
- 7.9. The Faculty uses its own funds to improve the quality of its activities.

FINAL REPORT AND RECOMMENDATIONS OF THE EXPERT PANEL

Following the evaluation, the panel states the following advantages (strengths) and disadvantages (weaknesses) of FESB that serve as the basis for recommendations with the ultimate goal of improving the quality of this higher education institution.

ADVANTAGES

Institutional Management

FESB has a clear vision and has defined goals, specific tasks and indicators. The Faculty is aware of its problems and trying to solve them.

Study Programmes

The study programmes are well organized and in accordance with the Faculty's mission. They take the needs of industry into account.

Students

The Faculty offers good study conditions for studying as well as for social and leisure activities.

Teachers

The staff is highly qualified and motivated. They communicate well with students.

Scientific and professional activities

The Faculty has active, highly motivated and successful researchers. They cover new and established research fields. They have secured a commendable reputation and ranking within Croatia in terms of the number of academic publications per member of staff. FESB has been proactive in encouraging the development of new research fields. In addition to the research activities, they are promoting the public awareness of their research.

International cooperation and mobility

There are several international cooperation projects in research and student exchanges. English courses are offered to attract students from abroad.

Resources

The premises and support by information technology (computer access and e-learning) offer good study conditions.

DISADVANTAGES

Institutional Management

The organisational structure of the Faculty needs to be revised.

Study Programmes:

The Industrial Engineering study programme is based on a good idea, i.e. the combination of engineering, economy and management. Nevertheless, the graduates have problems with the formal recognition of their degree.

Students

The student pass rate is not satisfying. The Faculty should strengthen its activities to attract the most motivated and skilled students.

Teachers

Many staff members are overloaded.

Scientific and professional activities:

A clearer, more systematic approach could be adopted by the Faculty to encourage academic publishing. Additional activities aimed at acquiring extra funding from the industry and other external sources could be implemented.

International cooperation and mobility:

The activities to get external funding, for example from the EU, could be intensified.

Resources

The services offered by the library do not meet European standards. There is a lack of positions which contributes to the overload of staff members.

RECOMMENDATIONS FOR IMPROVEMENT OF QUALITY

1. Institutional management and quality assurance

- It is recommended to undertake steps towards restructuring and to include related tasks in the strategy (1.2).
- It is recommended that the Faculty contributes to a University strategy which also clarifies the future role of the professional study programmes of the Centre for Professional Studies (1.3).
- It is recommended that the Faculty either solves the problem of the Industrial Engineering Programme quickly or discontinues it (1.4).
- It is suggested to restrict the access to the list of students who cheated. (1.9) The occurrence of cheating in exams suggests there is a need to increase the student's awareness of ethical rules (1.10).

2. Study programmes

- The institution should make extra efforts to attract high school students with good grades as well as to help students on the first year by offering them some extra courses. Also, the Faculty should reconsider the existing enrolment policy (2.2).
- ECTS should be subject to systematic upgrading. This could be accomplished through the work of the Committees for Proposing Amendments to the Curricula (2.5).
- The institution should develop an E-learning strategy (2.8).

- More effort should be involved in drafting new agreements between the Faculty and the companies regarding student internships, and modifying the existing ones (2.9).
- The process of monitoring of development, innovation and improvement of the existing study programmes should include other stakeholders. This is particularly important for the Industrial Engineering programme in the way of its better labour market recognition (2.10).

3. Students

- The Faculty should work systematically to attract successful high school graduates from the area. This could be accomplished by establishing contacts with students in the early stages of their study, e.g., possibly in the context of many extracurricular activities encouraged by the Faculty (3.3).
- It is recommended that the Faculty formalizes its support and mentorship system and notifies the students about it (3.5).
- It should reconsider rescheduling the exam timetable, with mid-term exams taking place during e.g. ten days or two weeks period. These changes should be done after consultations with students (3.8).
- It is recommended to the Student Council to develop and implement activities to connect more with students (3.11).
- It should develop a system to better inform the public of its activities and accomplishments (3.12).
- Finally, the Faculty should develop a system to regularly inform students about changes, i.e., the measures implemented on the basis of their suggestions and opinions (3.14).

4. Teachers

- It is recommended that the Faculty recruits more teaching assistants, especially for courses with large number of students (4.1).
- The expert panel issues a recommendation for the Ministry for a higher recruitment of assistants and junior researchers (4.2).
- Since many teachers are overloaded, the suggestion of the panel is to take measures in order to balance the workload of teachers and decrease the overload of some teachers (4.3).
- It is recommended that the institution implements training and mentoring for young teachers in the fields mentioned under 4.5.
- It is recommended that the institution should develop a model to solve the unbalanced workload of teachers and have systematic monitoring about the balance between teaching, research, mentorship and student consultations (4.7).

5. Scientific and professional activities

The Faculty should formalise the way in which it encourages academic publishing of research findings in a more systematic manner (5.6)

6. International cooperation and mobility:

- The Faculty should find the ways to attract students from other related Croatian higher education institutions (6.1).
- Large number of courses should be offered in English (6.5).

- It is recommended that the institution further motivates students and teachers to participate in the LLL and mobility programmes like Erasmus (6.6).

7. Resources

It is recommended to develop a systematic approach for the professional development of non-teaching staff (7.2).