



**RE-ACCREDITATION OF THE UNIVERSITY OF RIJEKA FACULTY
OF CIVIL ENGINEERING**

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INTRODUCTION

Short description of the evaluated institution

The Faculty of Civil Engineering is a part of the University of Rijeka. University degree studies in the field of civil engineering were founded in 1974 within the Technical and Civil Engineering Academy founded in 1969. In 1976 the Faculty of Civil Engineering Sciences became an independent institution. During the period from 1976 to 1991 the Faculty operated as part of the Civil Engineering Institute of Zagreb. In 1991 the Faculty was separated from the Institute and formally started acting as an independent unit. From 1994 till today the Faculty of Civil Engineering in Rijeka has been a public higher education institution and a part of the University of Rijeka.

The Faculty is accredited for an undergraduate university study programme in Civil Engineering (since the academic year 2005/06), graduate university studies of Civil Engineering (since the academic year 2008/09), vocational studies in Civil Engineering (since the academic year 2005/06) and specialist vocational studies of Littoral Building Construction and Utility Facilities (since the academic year 2008/09). In addition to the graduate and professional studies the Faculty offers postgraduate doctoral studies (since the academic year 2005/06). Also, there are life-long-learning programmes related to the Civil Engineering discipline. The degree awards offered are Bachelor and Master of Civil Engineering and Doctor of Civil Engineering Sciences.

In 2011 over 750 students were enrolled in the undergraduate, graduate and vocational programmes at the Faculty. The total student enrolment up to present stands at 3,196. About one-half of all students are studying on a part-time basis.

There are currently 76 teachers and associates teaching in study programmes of whom 64 being full-time. This includes 18 full and associate professors and 6 assistant professors. Given the current student population, this teaching staff level indicates a student/staff ratio (SSR) of about 14.8. The faculty plans to reduce the level of student enrolments in order to lower the SSR while maintaining the quality of the student experience and providing staff with more time for research.

The governing body of the Faculty is the Faculty Council whose members are mainly the professors, plus a representative of the teaching assistants and students (students of the university and vocational studies make up 15% of the membership in the Faculty Council). The Faculty is headed by a Dean who is supported by four Vice-Deans, with specific responsibilities and administrative staff. An advisory body – Dean's Board - consists of the Vice-Deans and secretary chaired by the Dean. It oversees the work of the Faculty and assists the Dean in decision making.

There are five departments, eight chairs and five laboratories in the Faculty organizational structure. Departments are core structural units of the Faculty determined based on correlation and affinity of teaching, research and professional activities.

There are seven administrative and supportive units which perform legal, human resource, financial and accounting, computer, student, library, technical, administrative and supporting work of general activities. The current balance between teaching and non-teaching staff is 3 to 1.

The overall mission of the Faculty is education of students, professional development of academic staff and research in the field of Civil Engineering and related technical and natural-sciences.

The work of the Expert Panel

For its work the Panel drew upon the Self-Evaluation Report and accompanying documents, prepared by the Faculty of Civil Engineering in Rijeka. They carried out a site visit to the campus of the Faculty in Rijeka on 23 and 24 April 2012. During the visit they saw the premises and material resources. During the visit to Rijeka they held meetings with the following groups:

- Faculty Management, including the Dean and Vice-Dean for Academic Affairs, Vice-Dean for Scientific and Research Affairs and International Cooperation, Vice-Dean for Business Affairs and Vice Dean for Postgraduates Studies;
- The Self-Evaluation Group and the representatives of Quality Assurance Board;
- Students;
- Teachers;
- Teaching assistants and junior researches;
- Vice-dean for academic affairs, vice-dean for postgraduate studies and programme coordinators;
- Vice-dean for scientific and research affairs and research project leaders and
- Heads of the departments.

They also examined the facilities, visited classes and had a tour through the laboratories, the Faculty library and the cafeteria.

DETAILED ANALYSIS BASED ON STANDARDS AND CRITERIA FOR RE-ACCREDITATION

1. Institutional management and quality assurance

- 1.1. There is a strong documentation about the current position. The institution carries out appropriate strategic planning in developing its position and defining its vision and goals. The Faculty Strategy for 2011 to 2015 is created in order to achieve the goals set by the University strategy as well as Faculty's own goals. **It is recommended that Faculty goals and strategies should be better established on their own, on the basis of the University strategy.**
- 1.2. There is an organizational structure, which is elaborately and precisely defined and effective. Laboratories have a special position within the structure, which may result in a difficult communication between the laboratory (laboratory head) and the chairs (head of chair). **It is recommended that the Faculty reviews the organisational structure with a view to achieving greater hierarchical clarity.**
- 1.3. Goals of the University are taken over by the Faculty. The good internal network between the Faculty and the University Management are obvious. Faculty employees are active in different University boards and committees coordinating or taking part in tasks and activities.
- 1.4. Each university study program is in line with the Faculty mission but it is necessary to clearly state the mission and the position for the vocational programme within the Faculty. The Self-Evaluation Report and the discussions reflect good dedication towards students and towards the university programme for professional engineers. In a similar way, **the role of and dedication to the vocational program and its difference from the university program should clearly be stated in strategic and other relevant documents.**
- 1.5. All study programs are aligned with the Baseline of the Croatian Qualification Framework whereas the Framework is still a provisional and not yet put into law.
- 1.6. The Faculty has implemented formal mechanisms for monitoring and improvement of the quality of its teaching. The educational part is very good but the research part gives an impression of being much weaker. **It is recommended to extend quality control and quality improvement procedures to the research field. The Faculty should develop and introduce a culture of excellence in the daily life of the Faculty.**
- 1.7. There are effective formal mechanisms for monitoring and improving teaching quality. Data are gathered on a regular basis and filed with the Dean's office. **It is recommended to reconsider these procedures, especially in teaching, because the impression is they are overtly formalized.**
- 1.8. The formal mechanisms for monitoring and improvement research quality are not very well developed to enable research evaluation. **The Faculty should implement formal**

mechanisms for monitoring research, which might well reflect the informal oral procedures used up to now.

- 1.9. The Faculty has established formal rules and ordinances for the highest level of ethical conduct. The rules for ethical behaviour are defined, a current brochure is available.
- 1.10. Staff and students are acquainted with rules for ethical behaviour – according to the circumstances. The Faculty should seek for possibilities of implementing aspects of the ethical behaviour in the context of normal coursework.

2. Study programmes

- 2.1. The Faculty is in discussion with the University Management as well as with representatives of local labour market and industry. The survey is less formal and is more interviews based.
- 2.2. The overload, as it is seriously described in the Self-Evaluation, was not confirmed in the interviews. The University showed confidence to have overcome this bottleneck to a good degree.
- 2.3. For the professional program the documentation for the learning outcomes is of the same quality as for the university program.
- 2.4. The alignment with the learning outcomes might be in question. One argument is an obvious student overload with regard to study programmes; the focus is on learning, rather than understanding.
- 2.5. The Faculty should be aware that the student overload has to be constantly monitored and adjusted according to the analysis of students' remarks and Dean's overview.
- 2.6. The quality and content of study programmes offered by the Faculty conforms to the internationally recognized standards. The Panel found limitations in the laboratory equipment used for teaching. **See remark under point 7.3**
- 2.7. The teaching methods do not show that the Faculty is applying the possible broad spectrum of different methods, which in other disciplines are already common. **The teaching staff should show more flexibility to different teaching methods.**
- 2.8. **The Faculty should better prepare students for the needs of proper use of the library and good literature investigation.**
- 2.9. **Students should get better possibilities to get an insight into the real work on site or in a design office. This could be done, for example, by enforcing more site visits, by more external lectures, by making interviews with practitioners, internships or else.**
- 2.10. The University has very elaborate regulations and procedures. But, **it should better protocol the involvement of external stakeholders and include them in the evaluation and monitoring process of study programs.** (Today it cannot be seen how a genius or very challenging idea can be installed within a short time).

3. Students

- 3.1. Information packages clearly inform potential students. Impressive documentation available to students is also available on the website and is well structured.
- 3.2. Information is public and available for the students and prospective applicants.
- 3.3. State Matura as a prerequisite for student enrolment has been fully implemented and, in addition, some selected subjects (Mathematics, Physics) are offered to students before enrolment to enhance insufficient competences.
- 3.4. The Faculty accepts and supports students in their engagement in local sports and other activities.
- 3.5. The Faculty provides counselling through well-equipped students' office and other means. Good possibilities are given to senior students to help in seminars and teaching. Teachers are available if needed for consultations with students.
- 3.6. The Faculty cares for raising the level of student standard. New buildings and new cantina are in operation. Student housing on the new campus is promised within the next phase of project realization.
- 3.7. The support to the student organization seems adequate. The Faculty supports and encourages the work of Student Council.
- 3.8. There are strict rules for examination procedures; examples of exams are available on the Internet. In addition to this, consultations with student assistants are available and in operation.
- 3.9. There are fruitful activities in obtaining information about job placements of graduate students, but **they have to be further developed and put into processes**. Statistics on present employability of graduates are not available.
- 3.10. Already there are events to which alumni are invited but they are not well organized. Activities are limited to the level of general information about the Faculty life sent to the potential alumni members. **Connections with alumni should be much more intense and used for Faculty development.**
- 3.11. The student body elects students' representatives. **The Faculty might more vigorously encourage students' representatives to bring in their own arguments.**
- 3.12. The information to the public is good and sufficient.
- 3.13. Students have possibilities to participate in discussing their issues, for example in the Council. They can raise their problems also directly to students' office. Students' ombudsman is available. However, some students seemed to be tired of turning in suggestions and complaints and prefer to just do their work.

- 3.14. Students are informed about the measures implemented regarding their suggestions through their representatives or by demand. **There should be a more open discussion and a transparent process regarding the way in which the measures are developed and implemented. An executive summary of the students' questionnaires should be made public within the Faculty.**

4. Teachers

- 4.1. For the status quo the teaching staff is sufficient. **The concept of developing young assistants and new professors should be put in line with strategic goals.** There is risk of lack of employment for the envisaged Architectural programme as well as non-teaching laboratory staff. **The Faculty should develop and apply stronger criteria for personal advancement than are the minimum national standards. Clear procedures for teachers' personal development are needed.**
- 4.2. The Faculty is aware of retirement dates and does good planning of upcoming vacancies. The strategic plan shows a considerable number of new positions, but necessary additional financial means are uncertain.
- 4.3. The employment of full-time teachers seems to be sufficient for now. For the strategic goals – on the University as well as on the Faculty level – **there should be more employment. It should be required that main subjects are always taught by full-time teachers.**
- 4.4. There have recently been some considerable improvements and achievements. The teacher-student ratio is 1:14.8, so that currently no overload is found in engineering education. To reach 1:12 until 2015 is a reasonable goal. The student/non-teaching staff member ratio is stated as 36:1.
- 4.5. There are seminars offered for continuous education (lifelong learning), which are attended by the Faculty teaching staff.
- 4.6. There are general rules stated for the advancement of teachers.
- 4.7. Distribution of teaching assignments is more or less an informal process, but well discussed within the departments. The Faculty is ready to do any changes if necessary.
- 4.8. The permit to work part-time somewhere else is regulated for teachers. Researchers can go abroad for longer research exchange, which is in practice supported by internal and informal agreements within departments.

5. Scientific and professional activity

- 5.1. The Faculty has implemented a programme of research planning, but **it should better be evaluated and monitored.**
- 5.2. **The Faculty should take care that even more teachers are engaged in exchange with other scientific organizations and industry.**

- 5.3. All executive levels of the Faculty recognize the major role of scientific research for the benefit of the Faculty. **It is up to the Faculty that also all teachers engage in it.**
- 5.4. Within means of the Faculty and the University the young researchers are supported well. Mentorship is well in place.
- 5.5. **There should be put more effort into promoting high quality research within the national and international context. The researchers should aspire to higher than the minimum national criteria.**
- 5.6. There is good encouragement for Ph.D. students to publish in refereed journals. **The scientists might strive for sole authorship or more leading authorship in publications. The faculty should extend the motivation tools applied to Ph. D. students to teachers as well.**
- 5.7. Good overview of published research papers is given in the Self-Evaluation Report.
- 5.8. The Faculty supports professional activities and services. **There should be good guidance especially for the young teachers to grow up in this environment and to become more aware of the need to contribute to the society.**

6. International cooperation and mobility

- 6.1. No activities have been seen to attract foreign students. **A better approach should be developed to the ways of attracting students from abroad and what to offer to them. The Faculty should make itself recognizable and attractive to foreign students as much as possible.**
- 6.2. Acceptance among students to complete some portion of their programme abroad is good. Procedures to help students to temporarily enrol in foreign universities are established and there is mutual understanding and discussion in case of difficulties.
- 6.3. The Faculty has quite attractive co-operations with foreign universities, which involve teachers as well as students. **The Faculty should focus on active participation of teachers in international activities.**
- 6.4. The international co-operation is well developed. In quite a number of these co-operations the member of the Faculty is not the leading partner. **Strategically the Faculty should try to acquire more research projects in co-operation with other research institutes, and at the same time augment the own share, respectively taking over the leadership in some projects.**
- 6.5. The activities on behalf of the Faculty are not really oriented versus attracting more students from abroad. Still, one should take into consideration that the situation for the Faculty is not easy. **But the Faculty should be more active in developing its own attractiveness, for example now on the basis of the very modern campus.**

- 6.6. There are links to the EU programs. But cooperation within the EU lifelong Learning Program is missing.
- 6.7. There are attractive co-operations, especially strong with Japanese institutions, but also with the University of Stuttgart and the University of Glasgow.

7. Resources: administration, space, equipment and finances

- 7.1. There is a very attractive new campus and lots of possibilities. That calls for visions and concepts, which still might surpass the possibilities, but keep up the visions for further development. The status reached now is a major step towards the future establishment of a strong research oriented faculty.
- 7.2. There should be procedures or guidelines to better develop non-teaching staff and training opportunities for them, especially as the Faculty is shifting to more research oriented work.
- 7.3. The laboratories are in a transition phase from using the external private laboratory to building up their own laboratory equipment. There still seems to be lack of equipment for teaching. Laboratories seem to be not used as much as possible.
- 7.4. The Faculty has a very good basis in new premises. This should be accompanied by good facility management in order to maintain the valuable facilities and laboratories.
- 7.5. The Faculty has - also well supported by the University Management – very good controlling tools and figures. The implementation of the controlling system is elaborate and effective.
- 7.6. The size of the Faculty library is not really sufficient. The Panel did not check on the University library. **But the new building, planned on the campus, should comprise a larger part for the Civil Engineering section.**
- 7.7. The ratio between teaching and non-teaching staff seems realistic, but it takes into account also cleaning staff and technical maintenance. The staff for laboratories is lacking in respect to other non-teaching staff. **A specialist for assisting in applications for research grants might be helpful.**
- 7.8. The financial stability of the Faculty is in line with its mission. The Panel saw some limitations according to the under-equipped laboratories and funds needed for laboratory development.
- 7.9. The Faculty spends its own budget to improve quality of teaching and scientific activities in line with its mission.

FINAL REPORT AND RECOMMENDATIONS BY THE EXPERT PANEL

ADVANTAGES (STRONG POINTS)

Faculty Management

The Faculty Management is strong, young and visionary, interested and involved in all Faculty processes. The Faculty Management is very agile and shows high incentives in creating and supporting various activities at all organizational levels and in all organizational units in order to fulfil the Faculty goals and mission. Also, there is a notable fast reaction of the Management to the perceived problems.

Support for Students

The student-teacher relations are good, as particularly pointed out by students. Teachers and assistants make great efforts and offer different kinds of support to help students to fulfil their commitments throughout the courses. The Faculty provides good support to the students in their extra-curricular activities. These include sport, cultural and other activities.

Study programmes

Study programmes are well defined and aligned with the baseline of the CROQF. Study programmes are outcome oriented and assure flexible academic profiles throughout all study levels supported by various learning methods.

Strategic management of scientific development

The strategic programme of scientific research is very well developed. Besides stated research topics and SWOT analysis to develop scientific and research activities, the necessary measures to bridge a gap in uneven development of different fields of Civil Engineering are articulated. The support for young researchers is strong. This extends from the provision of physical resources and their teaching load planning through academic year in order to help young researchers in preparing scientific papers and thesis. The researchers also benefit from regular monitoring of their progress and from support for attending conferences linked to their teaching and research and the Faculty has supported a number of international staff exchanges.

International Links

The Faculty has been effective in developing international links with a range of institutions and other organisations in Europe and beyond. This includes membership of relevant international bodies as well as staff and student exchange and involvement in international activities such as conferences and meetings.

Buildings

The new Faculty building significantly improved spatial conditions for all Faculty activities, students, employers and stakeholders. The conditions for research and laboratory tests present a great chance and the challenge for the Faculty's future development. The Faculty should work on a concept for cooperation with University facilities and others in order to maintain the achieved high standards in buildings and equipment.

DISADVANTAGES (WEAK POINTS)

Student overload

There is a notable student overload. The ratio 70:30 stated in University rules for continuous and final exam assessment seems to be too strict. There is a necessity for flexibility of student examination within each course. This could still fulfil the overall rule of 70:30 for the programme as a whole.

Research excellence

An important big step forward is necessary, including all parts and activities, to ensure excellence in scientific research.

International mobility

At all levels of the Faculty, mobility is acknowledged as an important component of its overall activity. It is necessary to develop other forms of inter-institutional cooperation through European projects, bilateral agreements, joint programs, etc. The Faculty should focus to achieve equal level of mobility in all departments or research fields in the future.

Student-Staff Ratios

The student/teaching staff ratio is stated 1:14.8. The ratios are improving by decreasing enrolment quota in 2006/2007. This ratio has an impact on the student experience and on the extent to which the academic staff can engage in research and scholarly activities. The Faculty should carefully monitor the balance between the time for teaching and research and also keep track of the changes made during the time. There is a risk of lack of employment for the envisaged Architectural program as well as non-teaching staff for laboratory

RECOMMENDATIONS FOR IMPROVEMENT OF QUALITY

In the following the Panel expresses hints and remarks concerning all accreditation topics, in which the Faculty was not rated up to the maximum number of points.

1) Management of the Higher Education Institution and Quality Assurance

- It is recommended that Faculty goals and strategies should be better established on their own, on the basis of the University strategy. (Criterion 1.1)
- It is recommended that the Faculty reviews the organisational structure with a view to achieving greater hierarchical clarity. (Criterion 1.2)
- It is recommended that the role of and dedication to the vocational program and its difference from the university program should be clearly stated in strategic and other relevant documents. (Criterion 1.4)
- It is recommended to extend quality control and quality improvement procedures to the research field. The Faculty should develop and introduce a culture of excellence in the daily life of the Faculty. (Criterion 1.6)
- It is recommended to reconsider procedures for monitoring and improving teaching quality because the impression is they are too much formalized. (Criterion 1.7)
- It is recommended to implement formal mechanisms for monitoring research quality, which might well reflect the informal oral procedures used up to now. (Criterion 1.8)
- It is recommended to seek for possibilities of implementing aspects of the ethical behaviour in the context of normal coursework (Criterion 1.10)

2) Study Programmes

- It is recommended to analyse long-term needs of construction industry and to stronger formalize the decision making process regarding justification of quotas. (Criterion 2.1)
- It is recommended that monitoring of the credit weighting and associated workloads is carried out on a regular basis according to the analysis of student's remarks and Dean's overview (Criterion 2.5)
- It is recommended that the Faculty reviews the teaching strategies being implemented in its programmes to ensure that they are appropriate and effective. The teaching staff should show more flexibility to different teaching methods. (Criterion 2.7)

- It is recommended that the Faculty develops and expands its links with local industry to provide better opportunities for student practice. Students should get better possibilities to get an insight into the real work on site or in a design office. (Criterion 2.9)
- It is recommended to strengthen the stakeholder involvement in programme evaluation and monitoring. (Criterion 2.10)

3) Students

- It is recommended that the Faculty develops a communication plan to ensure that the general public knows about its activities and achievements. It is recommended that the Faculty strengthens its statistical information relating to employment and that it extends its contact with its alumni. (Criterion 3.9)
- It is recommended that the Faculty intensifies connections with alumni and uses those connections for Faculty development (Criterion 3.10)
- It is recommended to encourage an open discussion and a transparent process with students about measures taken based on their suggestions and opinions. An executive summary of the students' questionnaires should be made public within the Faculty. (Criterion 3.14)

4) Teachers

- It is recommended to develop and apply stronger criteria for personal advancement than the minimum national standards. Clear procedures for teachers' personal development are needed. (Criterion 4.1)
- It is recommended to ensure a student-staff ratio that will provide a sufficient number of teachers to ensure fulfilment of strategic goals, quality and continuity of programmes. It should be required that main subjects are always be taught by full-time teachers. (Criterion 4.3)

5) Scientific and Professional Activity

- It is recommended to continue with further development of monitoring and evaluating procedures for scientific research in order to meet the strategic programme goals and the Faculty mission. (Criterion 5.1)

- It is recommended that the Faculty strengthens and develops appropriate mechanisms to ensure that research activities are improved. (Criterion 5.2)
- The institution is recommended to continue in its efforts to realise its plans for national and international cooperation. (Criterion 5.3)
- It is recommended that the institution makes efforts to increase its outputs in top quality international (English language) academic journals. (Criterion 5.4)
- It is recommended to extend the motivation tools applied to PhD students to teachers as well. (Criterion 5.6)

6) International Cooperation and Mobility

- It is recommended to develop a better approach to how to attract students from abroad and what to offer them. The Faculty should make itself recognizable and attractive to foreign students as much as possible. (Criterion 6.1)
- It is recommended to be more active in developing the attractiveness of the Faculty, for example now on the basis of the very modern campus. It is recommended to move towards offering a greater proportion of programmes in English and take steps to improve the resources offered to international students. (Criterion 6.5)
- It is recommended that the institution explores opportunities for cooperation in the EU LLL programme. (Criterion 6.6)

7) Resources, Administration, Space, Equipment and Finance

- It is recommended to provide necessary funds for further laboratory development. (Criterion 7.1)
- It is recommended to develop procedures or guidelines to better develop non-teaching staff and training opportunities for them, especially as the Faculty is shifting to more research oriented work. (Criterion 7.2)