



agency for science and higher education

**REPORT
OF THE EXPERT PANEL
ON THE
RE-ACCREDITATION OF
FACULTY OF CIVIL ENGINEERING, JOSIP JURAJ STROSSMAYER
UNIVERSITY OF OSIJEK**

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INTRODUCTION

The Agency for Science and Higher Education (the Agency) is an independent legal entity with public authority, registered in the court register, and a full member of the European Quality Assurance Register for Higher Education (EQAR) and European Association for Quality Assurance in Higher Education (ENQA).

All public and private higher education institutions are subject to re-accreditation, which is conducted in five-year cycles by the Agency, in accordance with the Act on Quality Assurance in Science and Higher Education (Official Gazette 45/09) and subordinate regulations, and by following *Standards and Guidelines for Quality Assurance in the European Higher Education Area* (ESG) and good international practice in quality assurance of higher education and science.

The Agency's Accreditation Council appointed an independent Expert Panel for the evaluation of the Faculty of Civil Engineering, Josip Juraj Strossmayer University of Osijek.

Members of the Expert Panel:

- Prof. dr. ir. Bert Geerken, Delft University of Technology, Kingdom of the Netherlands, Panel chair,
- Prof. Hendrik Voll, Tallinn University of Technology, Republic of Estonia,
- Prof. Aleksandra Deluka – Tibljaš, Faculty of Civil Engineering, University of Rijeka, Republic of Croatia,
- Prof. Georgica Mitrache, "Ion Mincu" University of Architecture and Urbanism Bucharest, Romania,
- Doc. dr. Veljko Srzić, Faculty of Civil Engineering, Architecture and Geodesy, University of Split, Republic of Croatia,
- Samantha Kelemen, student, Faculty of Civil Engineering, University of Zagreb, Republic of Croatia.

During the site visit, the Expert Panel held meetings with the following stakeholders:

- Management,
- Self-evaluation Report Committee,
- Students,
- Heads of study programmes,

- Full-time teaching staff,
- Assistants and junior researchers,
- Heads of doctoral programmes and leaders of research projects,
- Representatives of the business sector, potential employers.

The Expert Panel members had a tour of the work facilities, laboratories, library, IT classrooms, student administration office and classrooms, and attended sample lectures, where they held a brief Q&A session with students.

In accordance with the site visit protocol, the Expert Panel examined the available additional documents and study programme descriptions (learning outcomes).

The Expert Panel drafted this Report on the re-accreditation of Faculty of Civil Engineering, Josip Juraj Strossmayer University of Osijek on the basis of Faculty of Civil Engineering self-evaluation report, other relevant documents and site visit.

The Report contains the following elements:

- Short description of the evaluated higher education institution,
- Brief analysis of the institutional advantages and disadvantages,
- List of institutional good practices,
- Detailed analysis of each assessment area, recommendations for improvement and quality grade for each assessment area,
- Detailed analysis of each standard, recommendations for improvement and quality grade for each standard,
- Appendices (quality assessment summary by each assessment area and standard, and site visit protocol),
- Summary.

In the analysis of the documentation, site visit to the Faculty of Civil Engineering, Josip Juraj Strossmayer University of Osijek and writing of the Report, the Expert Panel was supported by:

- Davor Jurić, coordinator, ASHE,
- Matan Čulo, assistant coordinator, ASHE,
- Jelena Pataki, interpreter at the site visit,
- Marija Omazić, interpreter at the site visit.

On the basis of the re-accreditation procedure conducted, and with the prior opinion of the Accreditation Council, the Agency issues a following accreditation recommendation to the Minister for Higher Education and Science:

1. **issuance of a confirmation on compliance with the requirements** for performing the activities, or parts of the activities
2. **denial of license** for performing the activities, or parts of the activities
3. **issuance of a letter of expectation** with the deadline for resolving deficiencies of up to three years. A letter of expectation can include the suspension of student enrolment within a set period.

The accreditation recommendation also includes a quality grade of a higher education institution, and recommendations for quality improvement.

SHORT DESCRIPTION OF THE EVALUATED HIGHER EDUCATION INSTITUTION

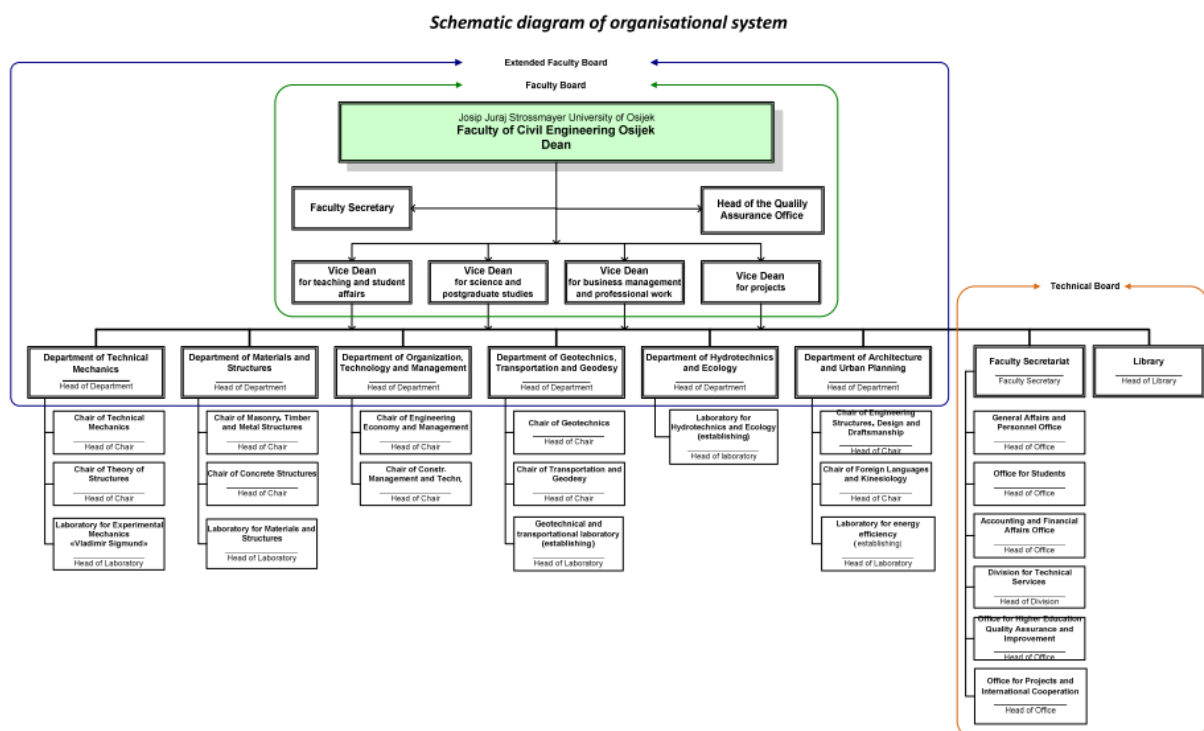
NAME OF HIGHER EDUCATION INSTITUTION:

Faculty of Civil Engineering, Josip Juraj Strossmayer University of Osijek

ADDRESS: Vladimira Preloga 3, 31000 Osijek

DEAN: Izv. prof. dr. sc. Damir Varevac

ORGANISATIONAL STRUCTURE:



(Self-evaluation Report, p. 4)

STUDY PROGRAMMES:

Undergraduate university study programme:

- Civil Engineering
- Architecture and Urban Planning

Graduate university study programme:

- Civil Engineering

Postgraduate specialist study programme:

- Civil Engineering

Postgraduate doctoral study programme:

- Civil Engineering

Undergraduate professional study programme:

- Civil Engineering

Specialist graduate professional study programme:

- Civil Engineering

NUMBER OF STUDENTS: 931

NUMBER OF TEACHERS: 43

SHORT DESCRIPTION OF THE EVALUATED HIGHER EDUCATION INSTITUTION

The organisational units of the Faculty comprise its organisational structure, and are the departments, chairs, laboratories, the Library and Secretariat. Details of the Faculty's organisational structure are regulated by the Faculty's Statute, ordinances and decisions on internal organisation and systematisation of posts. The departments are the basic organisational units of the Faculty for conducting teaching, scientific and professional work. The Faculty has six departments: Department of Technical Mechanics, Department of Materials and Construction, Department of Organisation, Technology and Management, Department of Geotechnics, Transportation Infrastructure and Geodesy, Department of Hydraulic Engineering and Environmental Protection, Department of Architecture and Urban Planning. The laboratories are, as a rule, organisational units of the departments, established to perform scientific and professional research and projects and to conduct practical teaching. The work of the laboratories is organised and led by their heads, who are appointed for a period of two years by members of the department at the proposal of its director. The chairs are organised for the efficient performance of the Faculty's educational process and scientific activities, and are founded for one or several subjects. The members of the chairs are teachers, associates and scientists who deliver teaching or participate in delivering teaching in the same or related subjects. The Secretariat is charged with conducting legal, expert-administrative, accounting and financial tasks, with improving and assuring quality, with tasks related to student issues, and technical, auxiliary and other tasks concerning the successful work of the Faculty. (from the Self-evaluation Report, p. 2)

BRIEF ANALYSIS OF THE INSTITUTIONAL ADVANTAGES AND DISADVANTAGES

ADVANTAGES OF THE INSTITUTION

1. Well-developed documents, monitoring and QA-schemes. (The Panel suggests to speed up the follow-up of actions, when appropriate.)
2. The new building, its developing facilities and its position in the region. Good contacts with and the good will of external stakeholders.
3. A positive atmosphere: a student-friendly attitude of academic and supporting staff and good student support. Students are energetic and feel connected to the faculty. An enthusiastic new generation of professionals (i.e. research assistants).
4. There is a developed system of horizontal and vertical exchange between the university and professional programmes, although this is not used very often. Furthermore, there are some well-developed market-relevant specialized post-academic and life-long-learning tracks.
5. The initiative to start a study programme in Architecture which is closely connected to the Civil Engineering background of the Faculty.

DISADVANTAGES OF THE INSTITUTION

1. Good contacts with alumni and external stakeholders could be used even better (i.e. in a more structured way) to achieve the various ambitions (job opportunities for students, research funding, business projects, internationalization). Opening up contacts with alumni abroad can support this.
2. The Panel recommends to develop a set of additional criteria (in addition to the national ones) to improve international recognition: WoS publications, PhD theses written in English, real competition for open positions, peer review mechanisms, increased grant capture (obtaining EU projects), and student mobility.
3. As the Faculty is confronted with a large share of not over-ambitious and also regionally oriented young students (they seem fine with passing exams and finding a job in the region), it should further develop motivating and modern teaching methods (like e-learning and practicums in the university programmes).
4. The concept of Learning Outcomes has been introduced, but the Panel sees room for improvement. The Faculty should conduct an analysis of the level of achieved Learning Outcomes at different studies.

LIST OF INSTITUTIONAL GOOD PRACTICES

EXAMPLES OF GOOD PRACTICE

1. The various award systems to support the faculty ambitions (publications, preparing project proposals, excellence in teaching and research, development of internal projects).
2. Openness towards a broad range of stakeholders: the public, companies, authorities, visiting faculty and others, even NGOs.

ANALYSIS OF EACH ASSESSMENT AREA, RECOMMENDATIONS FOR IMPROVEMENT AND QUALITY GRADE FOR EACH ASSESSMENT AREA

I. Internal quality assurance and the social role of the higher education institution

Analysis

The Faculty has a quite well-developed system and procedures of quality assurance put in place. The follow-up of findings and further steps towards making efforts as effective as possible for the management are advised.

Also, the social role underwent an upward development, especially in the region, triggered to a large extent by the new location, but also by the open attitude of the Faculty. Further efforts to move to the (inter)national arena are advised, starting with areas of gravity. Upholding and investing in ethical standards is part of quality assurance and the social role of the Faculty.

Recommendations for improvement

- Try to revise QA procedures in order to establish which of those are efficient and try to use the data in a more effective way by defining and - if necessary - revising operational plans.
- Follow-up and revision of plans (with the emphasis on their results) would make changes happen faster than is presently the case.
- Regarding action plans for doctoral studies it is important not only to report the situation, but also to - when necessary - revise the plan and define specific activities in order to improve; not only for doctoral studies but for research activities at all stages.
- Introduce mechanism for anti-plagiarism at all levels of studies.

- Work on the promotion of ethical behaviour of students during examinations, maybe together with the Student Union.

Quality grade: Satisfactory level of quality

II. Study programmes

Analysis

The Faculty is well underway with the development of its study programmes. Loose ends (staff involved in national activities; alumni abroad) should be connected. Circles of feed-back of involved external parties and actions can be closed better. Setting up Programme Committees could boost the quality of approach. The new programme in Architecture will need upgrades as it develops. The impact and relevance of the Faculty will benefit from the development of student practice and lifelong learning.

Recommendations for improvement

- It is warmly suggested to the Faculty to define general objectives of the study programmes in a broader way, by taking into account external needs on both national and EU levels. The point is to include all available sources: alumni, industry and market representatives, even civil engineering faculties from abroad when defining study programme objectives. This would potentially make study programmes unique, more needs oriented, and the outcome (graduated students) would be more prepared for the market conditions.
- Several teachers are professionally involved in QA projects and programmes at the national level. It is warmly suggested that the Faculty gives those staff members the opportunity to express their opinion on the definition and improvement of learning outcomes.
- Also, alumni abroad could be an incredible source for defining internationally relevant learning outcomes.
- The Faculty should develop a system of internal peer-review for the achievement of learning outcomes by incorporating the input from stakeholders, industry, market, and students. Also, internal peer review of the grading system and its alignment with the achievement of proposed learning outcomes would be something new and definitely a challenge for the teaching staff. Since the teaching staff expressed the willingness and emphasised the necessity to do this, it could be done easily, which was not shown to be expected by the Faculty management.
- Furthermore, criteria for the complexity level of courses, especially BSc and MSc theses, should be clearly defined.

- It is recommended to set up Study Programme Committees for each of the first and second level study programmes. These committees should consist of up to 15 members, with a balanced representation of students, academic staff and alumni/stakeholders. The work, procedures and plans of the committees should be developed and systematically followed. Information obtained from the Programme Committees can be used more systematically as a management tool to develop the study programmes.
- It is recommended to revise the credit weighting and associated workloads for the undergraduate university studies in Architecture and Urban Planning in accordance with the input received from students.
- It is highly recommended to use all the benefits of stakeholders and alumni, as well as the willingness of companies to help and support the student practice model at the Faculty. The Faculty should ensure a stable and formal collaboration model with all parties in the gravity area to define benefits for both sides and develop an appropriate student practice model, primarily for the graduate university study programme in Civil Engineering. Implementation of student practice into the study programme would enable a stable and continuous student practice process, which can contribute to the professional development of students, their preparedness for the site work and their site organization skills (not well-expressed in the survey results from the project HR.3.1.15.-0025 “Razvoj i primjena Hrvatskog kvalifikacijskog okvira u području visokog obrazovanja građevinskih inženjera”).
- It is recommended that HEI explores the opportunities for cooperation in the EU Lifelong Learning programme.

Quality grade: Satisfactory level of quality

III. Teaching process and student support

Analysis

Teaching process and student support is one of the best parts of this evaluation, even though the international component is still really weak. There is, however, room for improvement by pushing students a bit harder to be more motivated and ambitious. Modern ICT-tools can manage this process more subtly, providing instantaneous feedback. There needs to be more support for finding employment beyond the region.

Recommendations for improvement

- Continue implementing measures already taken.

- Advanced IT tools that are measuring the participation of students in a broader range of activities could monitor their progress better, speed up interventions and reduce work load.
- Analyse the correlation between students' opinion of ECTS and pass rates for courses with lower pass rates.
- Analyse the possibility of introducing distance learning to help part-time students and decrease their drop-out rate.
- Keep introducing more laboratory exercises, professional practice and teaching at construction sites or in locations outside the Faculty building.
- Consider introducing e-learning.
- Try to offer students the possibility to use IT classrooms and other Faculty facilities outside class hours (in the evenings, on weekends).
- Inform students more about existing student support services (at the introductory lecture for 1st year students, but also during the year).
- Try to establish a kind of support that can help part-time students (cf. 3.2).
- Provide more support, if possible also financial, to enhance the motivation, of students applying for ERASMUS+/CEEPUS.
- Analyse the possibility of introducing more English language in study programmes at all levels (seminars in English, some courses taught in English, papers in English as additional literature for courses...).
- More promotion activities to present the Faculty to foreign students are needed (this can be done via presentations of the Faculty to foreign students by the teaching staff, offering some e-courses in the field of expertise of the teaching staff (for example in earthquake engineering).
- Try to introduce more problem-based teaching as well as problem-based examinations.
- Provide teachers with possibilities for training and and other forms of improvements (peer-review) of their competences for the development of problem-based learning.
- If possible, include revised learning outcomes as part of the diploma supplement.
- Organize career days to match students with potential employers.
- Introduce more activities that support the development of students' entrepreneurial competences.

Quality grade: Satisfactory level of quality

IV. Teaching and institutional capacities

Analysis

Continuous development, raising the bar with respect to the quality of staff, international projects, laboratory equipment and its use in study programmes seem to be the “red thread” in this chapter, although certain circumstances are good as they are, like in the case of support to teachers and the Library.

Recommendations for improvement

- Employ staff suitable for programmes in which the number of teachers does not cover programmes’ needs. It is recommended that the Faculty be guided by several international research projects that allow the use of new research as well as the provision of additional financial resources for teachers.
- Keep developing the procedures and excellence criteria for hiring teaching staff. Also, put more effort in finding appropriate candidates from abroad. If the Faculty is willing to hire international excellent teachers, additional effort can be given to the research groups, areas of interest and marketing of Faculty’s facilities.
- Develop ambitious internal criteria and procedures for teacher advancement and re-appointment, more demanding than the national ones. Additional criteria and the procedure for the appointment of research assistants can be a good model, which has significantly contributed to teaching and research excellence.
- The Panel is satisfied with the institutional support to the teachers. Keep operating on this level.
- Different laboratories should have similar levels of equipment. In addition to the construction laboratory, which can serve as an example of a well-equipped laboratory unit on the national level, the improvements of other laboratory units would increase the competitiveness of research groups and their chances for getting research projects on both national and international levels.
- Furthermore, laboratory facilities should be more formally involved in the study programmes.
- The Panel finds the library to be adequately equipped and to provide effective services for students, teachers and researchers. Keep updating and constantly diversifying the book fund in order to maximize the potential of the library endowments.
- The Faculty should continue the development in management of financial resources.

Quality grade: Satisfactory level of quality

V. Scientific/artistic activity

Analysis

The Faculty clearly aims to improve its position in the scientific domain, moving towards (inter)national standards. Internal projects to develop certain research domains is the first phase. It is essential to make detailed plans in order to achieve this goal. Some actions can be taken immediately with little effort, although depending on University's support: writing PhD theses in English and allowing to make publication-based theses. Visibility is key! Developing a broader range of international projects will take more effort and time. Making an increased effort at this moment might promote the overall mind-set at the Faculty in a stimulating way and may set especially the new generations of academics in flow.

Recommendations for improvement

- The Faculty should make more efforts to increase the output in top quality international academic journals and improve their h-index. A detailed plan to increase the number of dissertations should be made and implemented.
- Support the development of infrastructure for start-ups and spin-offs (in the interest of the region and beyond) and start the debate with the University about how to set this up, step-by-step.
- The Faculty should have a plan to increase the number of international research projects.
- Continue ensuring infrastructural, administrative and financial conditions in order to improve the visibility and internationalization, and increase competitiveness on the national and international levels.
- Involve more graduate students in research projects. Encourage PhD students to write publication-based dissertations in English.

Quality grade: Minimum level of quality

DETAILED ANALYSIS OF EACH STANDARD, RECOMMENDATIONS FOR IMPROVEMENT AND QUALITY GRADE FOR EACH STANDARD

I. Internal quality assurance and the social role of the higher education institution

1.1. The higher education institution has established a functional internal quality assurance system

Analysis

The Quality assurance (QA) system of the Faculty has been developing since 2008. There are functional QA units (Commission and Working group for quality monitoring and assurance in HE) and since 2009 also the Office for quality development and assurance in HE. The Office offers great help to academic staff by being responsible for all of the regular analyses of the established procedures and annual audits of the system.

The QA system and its duties are defined in the Ordinance on the organization and operation of the QA system at the Faculty. There is functional integration of the Faculty QA system with that on the level of the University of Osijek.

In 2010, the Faculty received a certificate for QA through the external audit procedure done by AZVO. The norm HRN EN ISO 9001:2015 was implemented in 2007 for different activities: university study programmes, lifelong learning and professional training, scientific research work, professional work, publishing activities, and the Faculty's administration.

All procedures are formalized in the Handbook for Quality, which is updated formally on a regular basis. Internal audits are done regularly and are well-documented.

The Faculty Council has adopted a new Strategy for the period 2016–2020, with an action plan for every main (sub)goal. SWOT analyses are included, but are not very extensive.

All stakeholders (students, teachers, external stakeholders) recognize the Faculty's mission and share the views on the main strengths and opportunities, but also weaknesses and threats for development of the Faculty.

Different methods for collecting data are used on a regular basis to collect information from different stakeholders: surveys, feedback from employers but also through direct contact with students and external stakeholders. Many reports are made by the QA office and there is the impression that even too many analyses are done. Some of the procedures are too bureaucratic (e.g. the ECTS survey for students) and their aim and usefulness should be analysed.

Although the QA system is very well-developed we have the impression that it is not yet used in an optimal way from the management point of view and that several analyses are not used in an efficient way.

The plans that result from the gathered data and prepared reports are too general and therefore we see the risk that they do not have enough impact on the improvements needed.

Recommendations for improvement

- Revise the QA procedures in order to establish which are efficient and helpful; try to use the data collected and analysed through QA in a more effective way (follow-up, action plans).
- Follow-up and revise plans with the emphasis on their results, which would make changes happen faster than is presently the case.

Quality grade: Satisfactory level of quality

1.2. The higher education institution implements recommendations for quality improvement from previous evaluations

Analysis

The previous reaccreditation of the Faculty was done in 2012. According to the accreditation recommendations and grades a certificate was issued.

The Faculty was subjected to further monitoring on the basis of the action plan to improve quality. The Action plan was adopted by the Faculty Council and formally monitored on the annual basis.

There were different kinds of remarks and suggestions made in the process of previous reaccreditation, regarding both studies and research activities. The lack of internationalization was mentioned too. It is visible that the Faculty has made an effort to change things. The main change is visible in the resources that they have presently on disposal after moving to a new and well-equipped building. The Faculty managed to promote a respectable number of teaching staff, which has resulted in a better student-teacher ratio and can help with achieving a better balance between teaching and research. It must be emphasized that they developed a very comprehensive quality assurance system and they monitor all of the main activities going on at the Faculty, which was one of the suggestions in 2012.

The management, teachers and external stakeholders agreed about the main developments done in the past 5-6 years. The students also recognize the effort done by the Faculty to improve studies and teaching.

The development of the QA system, the introduction of an own science journal indexed in WoS, a new building, new studies (architecture and the MSc programme in transportation engineering), laboratories and lots of young teaching staff were all pointed out by different groups (management, teachers, heads of departments) as the main points in which the progress has been made.

The site visit of the Faculty and communication with different stakeholders, together with proofs offered by the Faculty, confirmed many aspects in which progress has been made, but some of the previous problems can still be detected. They concern quality (and quantity) of research and different aspects of internationalization (of research, staff and student mobility).

The reaccreditation of doctoral studies was done in 2016. There is a detailed action plan on the basis of which reports are produced annually. For now, just formal activities have taken place and the implementation of the new solutions is expected in the years to come. For example, in the Faculty's and University's regulations for doctoral studies the PhD thesis in the form of collected papers was already introduced, but the theses are still written in a traditional way.

Recommendations for improvement

- Regarding action plans for doctoral studies, it is important not only to report the situation but also - when necessary - to revise the plan and define specific activities in order to improve weak points detected in the process; it applies not only to doctoral studies but to research activities at all stages.

Quality grade: Satisfactory level of quality

1.3. The higher education institution supports academic integrity and freedom, prevents all types of unethical behaviour, intolerance and discrimination.

Analysis

The Faculty supports academic integrity and transparency, prevents unethical behaviour, discrimination and intolerance. The commitment to these values is seen in all of the Faculty's main documents. It is clearly stated in the Faculty's Quality Assurance Policy as well as in the Faculty's Mission and all of these documents are available to all stakeholders on the webpage.

Documents and procedures which are used in the cases of unethical behaviour are developed and adopted at University level (Code of Ethics) and for now they covered all of the ethical problems that occurred at the Faculty. The Faculty has established an

Ethics Commission, a Disciplinary Court for Teachers and Associates and a Disciplinary Court for Students which is in accordance with University regulations. Stakeholders are members of all those bodies.

There were several cases of unethical behaviour of students during examinations that were processed, all on the basis of teachers' reports. Still, it is not usual that teachers make formal reports in cases of cheating at examinations. To assure the examination process, almost all of the teachers provide not only written but also oral final exams.

Even students are well informed about what is considered as (un)ethical behaviour, but they still show tolerance in cases of cheating on exams and see it as normal behaviour. As for recent case of a student falsifying a grade, the students suggested very severe disciplinary measures for the student involved.

There was no unethical behaviour noticed in scientific activities at the Faculty by researchers or others.

The anti-plagiarism software was introduced at the Faculty during the academic year 2017-18 as a control mechanism for PhD theses, because it was recommended during the accreditation of doctoral studies in 2016. It is not used on a regular basis for students' BSc and MSc theses.

Recommendations for improvement

- Introduce mechanisms against plagiarism at all levels of studies.
- Promote ethical behaviour of students during examination in cooperation with the Faculty's Student union.

Quality grade: Satisfactory level of quality

1.4. The higher education institution ensures the availability of information on important aspects of its activities (teaching, scientific/artistic and social).

Analysis

The Faculty uses different ways to assure availability of information on its main on-going activities. The main source of information used to inform for both internal and especially external stakeholders is the Faculty's webpage. Most important information is also available in the English language.

Information on study programmes, learning outcomes, enrolment quotas and qualifications, forms of support available to students, delivery of studies are available on the webpage. Even all information potentially interesting for students is available on the webpage. Students mentioned that they prefer to use informal ways of getting information (directly from the Student Office).

External stakeholders are very well informed about the activities organized by the Faculty and willing to participate in them. Stakeholders can have information about teaching as well as research, professional and social activities going on at the Faculty. Part of the webpage is dedicated to the Alumni club as well.

There is also printed material available about the main information on studies and the Faculty in general. The annual report of the Faculty is drafted every year and it includes all information on employees, studies, research and projects and other activities of the Faculty in the previous year.

Recommendations for improvement

None

Quality grade: High level of quality

1.5 The higher education institution understands and encourages the development of its social role.

Analysis

The Faculty is a very important reference point for the civil engineering community of Osijek and the wider region. External stakeholders and alumni appreciate very much the contribution of the Faculty to the local community. There is active collaboration with civil engineering and architectural professional associations as well as with different private companies. The collaboration includes participation of external stakeholders in the teaching process, organization of student practice and visits to construction sites. There are also examples of collaboration connected to some specific innovative solutions in civil engineering but this kind of collaboration should be strengthened in the future.

The Faculty also offers different kinds of events that are open to the public, mainly connected to the topics of civil engineering and engineering in general, but also some art performances and presentations done by external stakeholders. The Faculty is very willing to host different events organized by local communities (city, county), NGOs, and companies. Students and teachers are involved in all of the activities but the public is also invited.

Recommendations for improvement

None

Quality grade: High level of quality

II. Study programmes

2.1. The general objectives of all study programmes are in line with the mission and strategic goals of the higher education institution and the needs of the society.

Analysis

Faculty sees itself as the centre for civil engineering studies and research in the region of Osijek-Baranja, wider region of Croatia and the north of Bosnia. This part of mission is recognized by all stakeholders, both internal and external.

The main goals of the study programmes are in line with the strategic documents and they emphasize the necessity of the development of both professional and generic competences.

The influence of the Faculty on the local community was highly emphasized in the documentation, and was proven during our visit, but the ambition for more influence on the national or EU level was not seen.

The Faculty aims to assure high quality in study deliverables and allocates funds to achieve that strategic goal (laboratories, field trips, education for teachers, etc.).

Teachers' efforts to reach high quality in teaching and education can be recognized as well and there is also an award system for teachers.

There is a good connection with external stakeholders, including professional chambers in civil engineering and architecture, who participate in the assessment of the achieved learning outcomes so that programmes can be harmonized with market needs, which for now was done just partially.

Newly developed studies (Architecture and transportation engineering branch at MSc level) were supported by professional organisations.

Graduate employment data is monitored on a regular basis.

In conclusion, the Faculty has great impact on the professional community in Osijek and its surroundings. We still have the impression that the Faculty should have more ambition in developing students' competences in the international context and promote this to a higher level (especially at the MSc level) than presently expected in the Osijek area.

Recommendations for improvement

It is warmly suggested to the Faculty to define general objectives of the study programmes in a broader way, by involving external needs, both national and European. The point is to incorporate all available sources: alumni, industry and market representatives, even civil engineering faculties from abroad, when defining study programme objectives. This would potentially make study programmes unique, more oriented towards real needs, and the outcome (graduated students) would be more prepared for the market conditions.

Quality grade: Satisfactory level of quality

2.2. The intended learning outcomes at the level of study programmes delivered by the higher education institution are aligned with the level and profile of qualifications gained.

Analysis

The general concept of the Learning Outcomes structure is in accordance to the Faculty's strategic documents, its vision and mission, so it fulfils the intention to produce undergraduate and graduate level engineers who would participate in this branch of the industry. Mechanisms of assessment and assurance of the Learning Outcomes alignment are moderately developed and rely on teacher judgement. Although the Faculty took part in two EU projects for the purpose of alignment with the CroQF standards (one project as a leader, the second as a partner), the feedback came from the QA committee that there is more to be done in this area. Learning Outcomes specified for undergraduate and graduate civil engineering study programmes at the Faculty are supposed to be distinguished in a way that they are more oriented towards different levels of qualification. The process of determination of necessary learning outcomes relies mostly on local stakeholders, without reference to international standards.

Recommendations for improvement

Several teachers are professionally involved in QA projects and programmes at the national level. It is warmly suggested that the Faculty provides the opportunity to those Faculty members to express their opinion on the definition and improvement of learning outcomes.

Also, alumni abroad could be an incredible source for defining internationally relevant learning outcomes.

Quality grade: Satisfactory level of quality

2.3. The higher education institution provides evidence of the achievement of intended learning outcomes of the study programmes it delivers.

Analysis

Faculty has developed procedures of collecting data from different participants in the education process. The intention of the Faculty is to get a quality input which will enable real insight into the system. There is a great example of the outcome of the project (HR.3.1.15.-0025 “Razvoj i primjena Hrvatskog kvalifikacijskog okvira u području visokog obrazovanja građevinskih inženjera”), which enabled the overview of the needs of stakeholders and industry representatives regarding learning outcomes of the study programmes of the Faculty.

The system of learning outcomes at the Faculty suffers from continuous internal peer reviews of learning outcomes by teaching staff, departments, QA system, and students.

Students at the undergraduate and graduate levels of civil engineering studies emphasized insufficient complexity of some engineering courses, which they see as important ones for their professional development.

Formal criteria for grading and quality level of BSc and MSc theses are not developed at the institutional level, instead, advisors are responsible for their complexity and grading (as members of a committee).

The QA team of the Faculty expressed the need for the additional improvements of learning outcomes of study programmes delivered by the Faculty.

Recommendations for improvement

The Faculty should develop a system of internal peer-review for the achievement of learning outcomes by incorporating the input from stakeholders, industry, market, and students. Also, the internal peer review of the grading system and its alignment with the achievement of proposed learning outcomes would be something new and definitely a challenge for the teaching staff. Since the teaching staff expressed the willingness and emphasised the necessity to do this, it could be done easily, which was not shown to be expected by the Faculty management.

Furthermore, criteria for the complexity level of courses, especially BSc and MSc theses, should be clearly defined.

Quality grade: Minimum level of quality

2.4. The HEI uses feedback from students, employers, professional organisations and alumni in the procedures of planning, proposing and approving new programmes, and revising or closing the existing programmes.

Analysis

The institution collects information from employers, professional organisations and alumni in the procedures of planning new study programmes. However, this could be done and used in a more systematic way to support programmes of improvement. Study programmes have no programme committees that come together regularly to discuss the status and development of programmes.

Recommendations for improvement

It is recommended to set up Study Programme Committees for each of the first and second level study programmes. These committees should consist of up to 15 members, with a balanced representation of students, academic staff and alumni/stakeholders. The work, procedures and plans of the committees should be developed and followed systematically. Information obtained from the Programme Committees can be used more systematically as a management tool to develop the study programmes.

Quality grade: Satisfactory level of quality

2.5. The higher education institution ensures that ECTS allocation is adequate.

Analysis

Revising existing study courses is one of the tasks of the Faculty's 2016-2020 Development Strategy. Appropriate arrangements are in place to calculate the allocation of ECTS credits so that it reflects the student workload. The students generally understand the arrangements for the allocation of credits, although they reported that there was some imbalance in the implementation of the associated workloads. Undergraduate students of Architecture and Urban Planning in particular complained that ECTS credits do not always correspond to actual workload.

Allocation of ECTS credits at the civil engineering studies has been revised and reported in accordance to student inputs.

Recommendations for improvement

It is recommended to revise the credit weighting and associated workloads for the undergraduate university studies in Architecture and Urban Planning in accordance with the input received from students.

Quality grade: Satisfactory level of quality

2.6. Student practice is an integral part of study programmes (where applicable).

Analysis

At the moment student practice is integrated within the undergraduate professional study of civil engineering as a mandatory course with 20 ECTS.

At the university undergraduate and graduate level, student practice is not present within the study programmes at all. This is especially recognized by students who emphasized the need to have student practice as part of study programmes.

Alumni and stakeholders are supportive partners of the Faculty with an obvious will to collaborate in different ways (design projects, applied research projects...) including student practice. They expressed the benefits of getting a more personal insight in student qualities, preferences and interests, which makes the hiring process spontaneous and increases the reliability of their recognition of applicants' skill and interest.

During the pre-accreditation period, the Faculty successfully finished (in 2016) the project (HR.3.1.15.-0025 *"Razvoj i primjena Hrvatskog kvalifikacijskog okvira u području visokog obrazovanja građevinskih inženjera"*) on the definition of learning outcome standards for civil engineering undergraduate and graduate studies at national level, in collaboration with other civil engineering studies. A special part of the project focused on the inclusion of student practice in the study programmes. Throughout the project, students of graduate university studies of civil engineering were offered to take part in 20 working days of practice work in civil engineering companies in the gravity area of the Faculty. The general conclusion from the survey, conducted both with students and companies after practice, was positive overall and emphasised great benefits of practice.

In accordance with the feedback from the vice-dean and the students, there are some isolated cases when stakeholders and/or engineers from companies are involved in master's thesis development, but this is not possible for all graduate students.

Recommendations for improvement

It is highly recommended to use all the benefits of stakeholders and alumni, as well as the willingness of companies to help and support the student practice model at the Faculty. The Faculty should ensure a stable and formal collaboration model with all parties in the gravity area to define benefits for both sides and develop an appropriate student practice model, primarily for the graduate university study programme in civil

engineering. The inclusion of student practice into the study programme would enable a stable and continuous student practice process, which can contribute to the professional development of students, their preparedness for the site work and their site organization skills (not well-expressed in the survey results from the project HR.3.1.15.-0025 “Razvoj i primjena Hrvatskog kvalifikacijskog okvira u području visokog obrazovanja građevinskih inženjera”).

Quality grade: Minimum level of quality

2.7. Lifelong learning programmes delivered by the higher education institution are aligned with the strategic goals and the mission of the higher education institution, and social needs.

Analysis

The Faculty has organized and delivered professional training courses to acquaint participants with new laws and regulations in the field of Civil Engineering since 2006. The courses are regularly updated and new ones are introduced. The improvement of the lifelong learning programme is performed by following new professional and scientific discoveries, national market demands, accessibility of new technologies, changes of technical and legal regulations, and listening to individual needs of external stakeholders. However, in the re-accreditation that took place in 2012 it was already pointed out that the involvement in the EU Life Long Learning programme is not yet developed and the institution should explore opportunities for cooperation in this EU programme. Unfortunately, this has not been done yet.

Recommendations for improvement

It is recommended that the institution explores the opportunities for cooperation in the EU Lifelong Learning programme.

Quality grade: Satisfactory level of quality

III. Teaching process and student support

3.1. Admission criteria or criteria for the continuation of studies are in line with the requirements of the study programme, clearly defined, published and consistently applied.

Analysis

Student admission is regulated on the level of the University (Statute, Ordinance on Studies and Studying). Detailed information about the criteria and enrolment procedures are defined at the Faculty level.

The enrolment for the first years of undergraduate as well for the university graduate study is organized through the national NISpVU system. For CE studies there are no additional requirements, but for Architecture and Urban Planning an additional test is conducted at the Faculty level for all candidates.

The Faculty has made an effort to increase the enrolment criteria for CE students (the level of mathematics exam at the final exam was increased from level B to level A) but as this did not contribute to the success of 1st year students and it decreased their number from last year, they decreased it again to the lower level B. The Faculty motivates the best candidates from CE high school to enrol in their studies by offering the rewarded candidates direct admission. They try to promote their studies in different ways in order to attract the best possible candidates. However, the average grade of the candidates enrolling in the studies is slightly decreasing. The Faculty might consider being stricter in admission to reduce the drop-out rate.

All the documents about admission are publicly available (Statute, Ordinance, Faculty website and national information about HE). Students confirmed the criteria are clear and in line with the requirements, and consistently applied.

Students from other institutions confirmed that there were no problems in the process of recognition of their ECTS credits achieved at the other Faculty in Croatia neither ECTS achieved through the ERASMUS+ programme.

The criteria for the continuation of study are in line with those on the level of the University.

Students confirmed that they were well informed about the criteria and that the criteria for admission as well as for continuation of study are consistently applied.

Recommendations for improvement

None

Quality grade: High level of quality

3.2. The higher education institution gathers and analyses information on student progress and uses it to ensure the continuity and completion of study.

Analysis

In the QA Procedure Book the procedure for Monitoring Quality Indicators is defined on the basis of which analyses are done annually.

The average duration of 3-year undergraduate university study in 2016 was around 4.0 years. The data are better for the graduate study, where the completion rate in 2 years is about 90%. The main problems with completion and also with drop-out are evident at the undergraduate professional study. The Faculty staff are aware of the problem and they emphasised that drop-out is mainly the problem with part-time students. The Panel had different impressions whether the follow-up of improvements is adequate.

For students in the final year of study there is a procedure that enables them to finish their study by paying, but without having the usual rights of regular full-time students. This solution is not viewed well by all students. It is good that the Faculty tried to initiate some actions in order to increase students' preparation and success: preparation for exams for courses with lower pass rates, lessons in mathematics and physics.

Recommendations for improvement

- Continue implementing measures already taken.
- Advanced IT tools that record the participation of students in a broader range of activities could monitor their progress better, speed up interventions and reduce work load.
- Analyse the correlation between students' opinion of ECTS and pass rates for courses with lower pass rates.
- Analyse the possibility of introducing distance learning (and e-learning) to help part-time students and decrease their drop-out rate.

Quality grade: Satisfactory level of quality

3.3. The higher education institution ensures student-centred learning.

Analysis

The importance of student-centred learning has been recognized at the Faculty and it is one of the main goals set in the Faculty strategy 2016-2020.

Teaching staff has the opportunity to improve their teaching skills by attending different kinds of education, supported by the Faculty. Presently one of the teachers is involved in the project dealing with HE teaching education.

Different methods are used and there is awareness of the need to improve teachers' skills in order that they can better connect learning outcomes with teaching methods and examinations.

The Student Survey showed that students are most satisfied with teaching that happens at construction sites or elsewhere outside the Faculty building, as well as with work in laboratories and with software. They don't appreciate e-learning and distance learning, or seminars and e-exams. This was confirmed in the communication with students. The impression is that students (but also teachers) don't have enough information about advantages of e-learning and similar programmes.

Students confirmed that teachers use different teaching methods (e.g. ex-cathedra, PowerPoint presentations...) but they also emphasized that the quality of teaching is not necessarily connected with use of IT technology and some differentiation in teaching methods is functional.

Project work and teamwork is present both at Civil Engineering as well as at the courses at Architecture and Urban Planning.

Teaching staff is very motivated and open for the communication with students at all studies but students from Architecture seem to be more motivated. This might be connected with the fact that it is a new study programme and that there are less available positions at that study. Students from Civil Engineering showed little ambition in trying to achieve levels of learning outcomes so much than the minimal ones, enough to pass the exam. They do not have a real understanding of the need to be partners in the learning process.

Recommendations for improvement

- Keep introducing more laboratory exercises, professional practice and teaching at construction sites or in locations outside the Faculty building.
- Consider introducing e-learning.
- Try to offer students the possibility to use IT classrooms and other Faculty facilities outside class hours (in the evenings, on weekends).

Quality grade: Satisfactory level of quality

3.4. The higher education institution ensures adequate student support.

Analysis

The Faculty has developed a student support system at the level of University or the Faculty to provide guidance on studying for diverse student populations. Most information about student support is available on the Faculty's website, but students do not use it because they said they were not familiar with all services. Students are informed about the mentoring system (done on the basis of an internal procedure), information on consultation hours on the Faculty website (students said that teaching staff was available at any time to help them). Career guidance, psychological and legal counselling are organized on the level of University but they are not recognized by the students. The Faculty has organized a functional library which stands at the service of students and teaching staff.

There is an organised system of teachers-tutors at the Faculty, but students stated that they prefer their student-mentors because they feel they can help them more in their everyday student life.

There is a problem with drop-out rates of part-time students, but we found no evidence that measures are taken in order to help them during their studies.

Recommendations for improvement

- Inform students more about existing student support services (at the introductory lecture for 1st year students but also during the year)
- Try to establish support for part-time students (cf. 3.2)

Quality grade: Satisfactory level of quality

3.5. The higher education institution ensures support to students from vulnerable and under-represented groups.

Analysis

The Faculty monitors the various needs of students from poorer socio-economic backgrounds and students with disabilities and offers different kinds of help to those students. Information on admission, application and admission procedures are available in the University Ordinance which is available online on the Faculty's webpage. For students from the poor socio-economic background the University provides student scholarships, grants and fee reductions. Special emphasis is given to the ratio of male/female students and the number of female students has increased by 4% in the last 5 years.

The Faculty showed great solidarity in the case of floods in the region of Slavonia in 2014 by granting a fee reduction to all students from Gunja.

Recommendations for improvement

None

Quality grade: High level of quality

3.6. The higher education institution allows students to gain international experience.

Analysis

The Faculty informs students about the opportunities to participate in activities (part of the study or practice) through ERASMUS+ programme as well as CEEPUS. The Faculty has signed 19 ERASMUS agreements with foreign universities (Faculties of CE).

All the information about possibilities for mobility are available to students at the Faculty's and University's websites. There are also brochures, presentations and workshops for students to inform them about these topics.

Students can turn to the Erasmus and ECTS coordinators at Faculty level with all their questions. They, together with Faculty's Commission for the Recognition of Examinations Passed and Confirming Differential Examinations, deal with the recognition of ECTS credits and examinations. Students who participated in some kind of mobility confirmed that there was no problem with the recognition of ECTS credits, but those who did the final thesis abroad had to translate it into Croatian, which was an additional task for them.

Not many students at the meeting expressed the willingness to participate in some of the mobility programs. The reason is that they don't feel confident about their English language competence. There is the impression, confirmed by students, that they are not exposed to English enough during their study.

The Faculty offers support for students to participate in summer schools abroad, which is a good way to encourage students to go abroad and promote mobility.

Doctoral students are stimulated and supported to gain international experience.

Recommendations for improvement

- Provide more support, if possible also financial, to enhance the motivation, of students applying for ERASMUS+/CEEPUS.

- Analyse the possibility of introducing more English language in study programs at all levels (seminars in English, some courses taught in English, papers in English as additional literature for courses...).

Quality grade: Minimum level of quality

3.7. The higher education institution ensures adequate study conditions for foreign students.

Analysis

The University provides support to foreign students for enrolment and study through the Erasmus coordinator at the Rector's Office and when necessary help is provided by student volunteers. There are also Faculty ECTS and ERASMUS+ coordinators that assist foreign students at the Faculty. The Croatian language course is available at the University level but is not very popular among incoming students.

The Faculty offers 29 courses that can be delivered in foreign languages (mostly English).

As the number of incoming students each year is not large, the teaching is organized as consultative classes.

The Faculty collects information about the satisfaction of foreign students. The foreign students are satisfied with the structure of the lectures (81%), the teaching materials (87%), and the lectures (87%), and they would recommend their colleagues to participate in the mobility at the Faculty. There is some evidence of great satisfaction of foreign students with some of the teachers that used laboratory equipment in teaching.

The advantages that the Faculty now has (building, laboratory facilities) as well as expertise in some fields (earthquake engineering) should be used more for attracting incoming students.

Recommendations for improvement

- More promotion activities to present the Faculty to foreign students are needed (this can be done via presentations of the Faculty to foreign students by the teaching staff, or offering some e-courses in the field of expertise of the teaching staff (for example in earthquake engineering)).

Quality grade: Minimum level of quality

3.8. The higher education institution ensures an objective and consistent evaluation and assessment of student achievements.

Analysis

The criteria and methods for evaluation and grading for studies delivered at the Faculty are clear and published before the beginning of a course. Students confirmed that they are informed about what their obligations are at the beginning of the course by every teacher.

Different elements are included in the evaluation of students, such as design/project work, seminars, partial exams during the semester etc. Final examinations are organized as oral or written, usually both.

Teachers have the chance to attend education for improving teaching competences but still they say that they would like to know more about how to implement constructive alignment methods so to assure learning outcomes achievement at the expected level.

The evaluation procedures take into account special circumstances of certain groups of students; for example, for students with dyslexia are allocated more time for taking exams, which are printed in bigger font.

Both students and teachers prefer oral exams because they think that it is more objective and knowledge can be proved better in that way. Both groups think that written examinations give students a chance to cheat, which, in their opinion, happens very often. No measures for preventing it were taken by the teachers.

Students confirmed that they receive feedback on their exams if they are interested in it. Students also emphasize oral exams to be good for the improvement and contextualisation of their knowledge.

Some of the exam samples that were at our disposal at the Faculty were not on the expected level, mostly because limited problem solving was expected from the students. As critical thinking and problem based learning are crucial, learning outcomes expected from an engineering study exam should reflect it. The suggestion is to provide more training for the teachers in this sense. It can be done through the exchange of good practice in preparing written exams among teachers or via some educational programme. The revision of exams at departmental or faculty level could also help.

Recommendations for improvement

- Try to introduce more problem based teaching as well as problem based examinations.
- Provide teachers possibilities for training and other forms of improvements (peer-review) of their competences for the development of problem-based learning.

Quality grade: Satisfactory level of quality

3.9. The higher education institution issues diplomas and Diploma Supplements in accordance with the relevant regulations.

Analysis

The Diploma supplement is issued regularly for all studies in the Croatian language and in the English language on student's demand. The document has all obligatory elements defined by the National Law and Ordinance on the content of diplomas and supplementary document on studies.

The program requirements and results are part of the diploma supplement but it will be better and more informative if the defined study learning outcomes are listed instead.

Recommendations for improvement

If possible, introduce revised study learning outcomes as part of the diploma supplement.

Quality grade: High level of quality

3.10. The higher education institution is committed to the employability of graduates.

Analysis

The Faculty collects information about the employability of graduates through The Croatian Employment Service. According to their statistics the number of unemployed undergraduate alumni is low considering the number of students who completed the study, because most of them continue to the graduate study programme.

The Dean has expressed his impression that graduates from the undergraduate study should be more prepared for the labour market, but there is no consensus at the Faculty about that point.

The number of unemployed graduate (MSc) students, according to the statistics of the Employment Office, is very high and the Faculty management explained that it is because the attached statistics are taken from the end of a year when most students complete their MSc studies.

The Faculty informs perspective students about the opportunities to continue their education through presenting graduate studies orientations and optional subjects to undergraduate students. This is done by teachers, graduate students and former students who convey their experience from practice and answer questions.

At the University level students have support in terms of planning their future careers, but they are not familiar with that.

The Faculty has a good relationship with alumni through the Faculty's Association of Civil Engineering Graduates (AMCA). Alumni are included in the teaching process through quality monitoring in Commission for Quality Monitoring and Assurance in Higher Education and Working Group for Quality Monitoring and Assurance. They also think that upon graduations, students, have high theoretical knowledge but insufficient professional practice. External stakeholders expressed the same view during the meeting, but they also emphasized the need to develop more entrepreneurial competences during studies. They would like to see the students think about how to assure a job rather than expect to be employed.

A lot of former students live outside the country. AMCA tried to get in touch with them but they have not succeeded yet.

Recommendations for improvement

- Organize career days to match students with potential employers.
- Introduce more activities that support development of students' entrepreneurial competences.

Quality grade: Satisfactory level of quality

IV. Teaching and institutional capacities

4.1. The higher education institution ensures adequate teaching capacities.

Analysis

The coverage of study courses by teachers employed at the Faculty is between 60% to 100% for the Civil Engineering study programmes. The exception is the study

programme of Architecture and Urban Planning, where the coverage by the own teaching staff is around 50%. Taking into account the fact that the study programme started only two years ago, it is expected that this percentage will increase due to the effort of the Faculty management.

The ratio of students and full time teachers is below 1:30 for the analysed period. If the assistants are taken into account, then this ratio is 1:16 on the Faculty level for the academic year 2016-2017. The ratio has decreased in the last five academic years, due to - as stated by the faculty - a decreasing number of students.

The teachers' workload is generally in accordance with the law and relevant legislation. Around 15% of the total teaching staff is shown to be overloaded due to student and lecture related duties (more than 120% of the norm hours in accordance to the collective agreement).

The scientific, teaching, administrative, professional and personal development obligations are mainly covered by the distribution of work load between teaching, scientific research, market orientated project design, and administration. Although the Dean and Faculty management board make efforts to keep the balance and to improve the local distribution, as stated by the employees, this is not always possible.

Recommendations for improvement

Employ staff suitable for programmes in which the number of teachers does not cover programmes' needs. It is recommended that the Faculty be guided by several international research projects that allow the use of new research as well as the provision of additional financial resources for teachers.

Quality grade: Satisfactory level of quality

4.2. The higher education institution has an objective, transparent and excellence-based procedure of teacher recruitment.

Analysis

The procedures of teacher recruitment are aligned with HEI development goals. Recruitment is based on the necessity to fulfil national level criteria and additional criteria defined and established by the Faculty. This holds for research assistants who are selected based on the average grade from the graduate study, study period duration (from start to graduation), attendance of Lifelong Learning, English language

competence and grades from the courses in the potential research area achieved during the graduate university study.

The announcements of teacher vacancies are internationally published and visible to the academic community. In practice it is rare that teachers are hired from abroad.

Recommendations for improvement

Keep developing the procedures and excellence criteria for hiring teaching staff. Also, put more effort in finding appropriate candidates from abroad. If the Faculty is willing to hire international excellent teachers, additional effort can be given to the research groups, areas of interest and marketing of Faculty's facilities.

Quality grade: Satisfactory level of quality

4.3. Teacher advancement and re-appointment is based on objective and transparent procedures.

Analysis

The advancement and re-appointment of teachers relies on the national level requirements. After the national level requirements are achieved, advancement/re-appointment is allowed by the Faculty Council.

Faculty employees emphasize significant differentiation in teaching staff efforts and results, which could stem from the lack of additional criteria.

In comparison to the latter, additional appointment criteria for research assistants are shown to be well developed and applied with the intention to emphasize excellence. The effect of additional criteria applied for research assistants appointment is obvious from their enthusiasm, effort and scientific results.

Recommendations for improvement

Develop ambitious locally applicable internal criteria and procedures for teacher advancement and re-appointment, more demanding than the national ones. Additional criteria and the procedure for the appointment of research assistants can be a good model, which has significantly contributed to teaching and research excellence.

Quality grade: Minimum level of quality

4.4. The higher education institution provides support to teachers in their professional development.

Analysis

The Faculty ensures institutional support for activities that should increase the teaching quality: pedagogical-psychological and didactic-methodological education, part of lifelong learning programmes, workshops and lectures, qualification programme, involvement in professional boards and associations, etc.

Special attention is given to the development of teaching skills for younger teaching assistants. Results of student evaluation surveys are analysed in detail. The Dean of the Faculty determines whether additional support is needed.

The Faculty promotes professional development and further training for its staff using a wide range of financial support: participation in conferences, books, access to scientific journals, covering the costs of professional training, laptops, software, research equipment, etc.

Overall, the teachers are satisfied with the amount of the support received from the Faculty.

Recommendations for improvement

The Panel is satisfied with the institutional support to the teachers. Keep operating on this level.

Quality grade: High level of quality

4.5. The space, equipment and the entire infrastructure (laboratories, IT services, work facilities etc.) are appropriate for the delivery of study programmes, ensuring the achievement of the intended learning outcomes and the implementation of scientific/artistic activity.

Analysis

The new building of the Faculty, with incorporated facilities, offers to students, teaching, administrative and technical staff the entire infrastructural system to reach goals defined in the mission, the vision and strategic documents. The fact that all the facilities are found within the Faculty building is one of the advantages. The facilities open to public provide space for extended collaboration with the public domain, the

society and cultural institutions, and they are the hub of a civil engineering related activities.

Besides the Faculty building, the Faculty uses additional spaces, occasionally in the factory hall at the University Campus, and based on contract, facilities of the Osijek Construction-Geodesic Secondary School.

The present infrastructure and facilities allow for high quality lectures for students in all study programmes at the Faculty. Although the intention we got from the Faculty management and teachers is orientated towards intensive laboratory activities for students, the graduate study programme in civil engineering only provides for the formal use of the laboratory for lectures in less than 10% of courses in the study programme.

Since the Faculty is oriented towards experimental approaches, laboratories should play an important role in research activities of research groups. Although the general state of laboratory units can be evaluated as moderate to well equipped, there are significant differences in laboratory infrastructure in different laboratory units. Most equipment will be procured on project basis, but a general boost to a more advanced level may be welcome in some cases.

Recommendations for improvement

Different laboratories should have similar levels of equipment. In addition to the construction laboratory, which can serve as an example of a well-equipped laboratory unit on the national level, the improvements of other laboratory units would increase the competitiveness of research groups and their chances for getting research projects on both national and international levels.

Furthermore, laboratory facilities should be more formally involved in the study programmes.

Quality grade: High level of quality

4.6. The library and library equipment, including the access to additional resources, ensure the availability of literature and other resources necessary for a high-quality study, research and teaching.

Analysis

Compared to the previous re-accreditation process, library infrastructure has been significantly improved, not only when it comes to available sources but also in terms of

infrastructure and space. Based on the inspection, library services have been extended and digitalized, with sources available online.

The Faculty conducts surveys on the quality of library services for students and teaching staff, showing the intention to keep the high level of quality in this Faculty unit.

The library facilities in the new building of the Faculty offer good orientation and adequate equipment in book space, information desk and reading area. As the University Library is currently being built, the local facility may stay on the present level.

Recommendations for improvement

The Panel finds the library to be adequately equipped and to provide effective services for students, teachers and researchers. Keep updating and constantly diversifying the book fund in order to maximize the potential of the library endowments.

Quality grade: High level of quality

4.7. The higher education institution rationally manages its financial resources.

Analysis

The management of the financial resources at the Faculty is transparent and accessible to the Faculty Council. Besides Faculty management, heads of departments emphasized their involvement in the financial management. Annual financial reports are public. The way how the Faculty plans and realizes infrastructural issues, research related costs, laboratory and teaching equipment is praiseworthy and fully in agreement with the mission and vision of the Faculty.

Recommendations for improvement

The Faculty should continue the development in management of financial resources.

Quality grade: High level of quality

V. Scientific/artistic activity

5.1. Teachers and associates employed at the higher education institution are committed to the achievement of high quality and quantity of scientific research.

Analysis

Research is recognized as one of the main goals in the strategy of the Faculty and there is evidence that a large amount of financial support is allocated to the research activities (internal scientific projects, support to publish papers, laboratory equipment, etc.). The data regarding all scientific activities are collected and analysed annually.

Establishing the Electronic Journal e-GFOS is a very important step towards improvements. However, international experts should be included into the editorial board to get more international attention for the journal. While the importance of research is clearly in evidence in the Faculty's mission and there is a broad awareness among the academic staff of the importance of research, this is not clearly translated into an apparent awareness of the importance of achieving the highest quality outputs. As a result, the research efforts do not fully make an intellectual contribution to the Faculty's reputation. Similar conclusions were also made in the re-accreditation that took place in 2012. Unfortunately, the current situation has not improved considerably. Also, the number of dissertations per year should be increased.

Recommendations for improvement

The Faculty should make more efforts to increase the output in top quality international academic journals and improve their h-index. A detailed plan to increase the number of dissertations should be made and implemented.

Quality grade: Minimum level of quality

5.2. The higher education institution provides evidence for the social relevance of its scientific / artistic / professional research and transfer of knowledge.

Analysis

The Faculty organizes a number of activities each year for popularizing science in the form of popular scientific lectures and workshops. The Faculty employees are involved in national and international professional, public and advisory bodies and committees. Unfortunately, we have not heard about any developments in promoting a technology park, business incubator, a patent position, start-ups, or spin-offs.

Recommendations for improvement

Support the development of infrastructure for start-ups and spin-offs (in the interest of the region and beyond) and start the debate with the University about how to set this up, step-by-step.

Quality grade: Satisfactory level of quality

5.3. Scientific/artistic and professional achievements of the higher education institution are recognized in the regional, national and international context.

Analysis

Academic staff actively participates in national and international conferences and journal editing, or are members of scientific/expert international groups. Five student and teacher works have been recognized by national societies during the past five years. Two young scientists got a national project in 2018 financed by the Croatian Science Foundation (*Razvoj armiranobetonskih elemenata i sustava s otpadnim prahom automobilskih guma* (ReCoTiP) and *Otpornost stupova nadvožnjaka na djelovanje eksplozije* (BLAST)). Unfortunately, none of the professors have received any national or international awards during the past five years. The number of national and international scientific projects is modest and no clear plan how to increase the number of projects was presented.

The latest success of the Faculty's staff emphasizes their intention to be present at the national scientific level, which is recognised by the accreditation panel members. Two national scientific projects funded by the Croatian Science Foundation (*FRAME – Masonry composites for modeling and standardization* (FRAMA) and *Metodološki okvir za učinkovito upravljanje energijom s pomoću inteligentne podatkovne analitike*) are positive examples of scientific achievements.

Recommendations for improvement

The Faculty should have a plan to increase the number of international research projects.

Quality grade: Minimum level of quality

5.4. The scientific / artistic activity of the higher education institution is both sustainable and developmental.

Analysis

The main goals of the development strategy are aligned with the institution's vision by continuing improvement of doctoral studies, general improvement in volume, quality and visibility of scientific research, support for professional development, and creating conditions for a research centre of excellence. Scientific/artistic activities stated by the Faculty are aligned with strategic development plan.

The technical, infrastructural, institutional and financial resources of the Faculty offer appropriate conditions for scientific/artistic activities.

The Faculty offers to its employees institutional facilities and financial rewards as a recognition of their scientific/artistic activities.

The involvement of graduate students in research projects is limited and writing publication-based dissertations in English is almost non-existent.

Recommendations for improvement

Continue ensuring infrastructural, administrative and financial conditions in order to improve the visibility and internationalization, and increase competitiveness at the national and international levels.

Quality grade: Satisfactory level of quality

5.5. Scientific/artistic and professional activities and achievements of the higher education institution improve the teaching process.

Analysis

Research is used in teaching at undergraduate and graduate levels, however at a modest level. There are examples of graduate student involvement in scientific projects. However, this is more an exception (only 10% of MSc-courses formally include laboratory activities) than everyday practice. A lot of the graduate level theses are projects and lack a fully developed scientific approach or comparison between different techniques/alternatives.

It is positive that the International Summer School (ISUCCES) is organized at the Faculty every year, that it is publicly announced and open to international graduate and undergraduate level students and the results (students' papers) are published in a journal in the English language.

All presented PhD theses are written as monographs in Croatian.

Recommendations for improvement

Involve more graduate students in research projects. Encourage PhD students to write publication-based dissertations in English.

Quality grade: Minimum level of quality

APPENDICES

1. Quality assessment summary - tables

<i>Quality grade by assessment area</i>				
<i>Assessment area</i>	Unsatisfactory level of quality	Minimum level of quality	Satisfactory level of quality	High level of quality
<i>I. Internal quality assurance and the social role of the higher education institution</i>			X	
<i>II. Study programmes</i>			X	
<i>III. Teaching process and student support</i>			X	
<i>IV. Teaching and institutional capacities</i>			X	
<i>V. Scientific/artistic activity</i>		X		

Quality grade by standard

<i>I. Internal quality assurance and the social role of the higher education institution</i>	<i>Unsatisfactory level of quality</i>	<i>Minimum level of quality</i>	<i>Satisfactory level of quality</i>	<i>High level of quality</i>
1.1. The higher education institution has established a functional internal quality assurance system.			X	
1.2. The higher education institution implements recommendations for quality improvement from previous evaluations.			X	
1.3. The higher education institution supports academic integrity and freedom, prevents all types of unethical behaviour, intolerance and discrimination.			X	
1.4. The higher education institution ensures the availability of information on important aspects of its activities (teaching, scientific/artistic and social).				X
1.5. The higher education institution understands and encourages the development of its social role.				X

<i>Quality grade by standard</i>				
<i>II. Study programmes</i>	<i>Unsatisfactory level of quality</i>	<i>Minimum level of quality</i>	<i>Satisfactory level of quality</i>	<i>High level of quality</i>
2.1. The general objectives of all study programmes are in line with the mission and strategic goals of the higher education institution and the needs of the society.			X	
2.2. The intended learning outcomes at the level of study programmes delivered by the higher education institution are aligned with the level and profile of qualifications gained.			X	
2.3. The higher education institution provides evidence of the achievement of intended learning outcomes of the study programmes it delivers.		X		
2.4. The HEI uses feedback from students, employers, professional organisations and alumni in the procedures of planning, proposing and approving new programmes, and revising or closing the existing programmes.			X	
2.5. The higher education institution ensures that ECTS allocation is adequate.			X	
2.6. Student practice is an integral part of study programmes (where applicable).		X		
2.7. Lifelong learning programmes delivered by the higher education institution are aligned with the strategic goals and the mission of the higher education institution, and social needs.			X	

Quality grade by standard

<i>III. Teaching process and student support</i>	<i>Unsatisfactory level of quality</i>	<i>Minimum level of quality</i>	<i>Satisfactory level of quality</i>	<i>High level of quality</i>
3.1. Admission criteria or criteria for the continuation of studies are in line with the requirements of the study programme, clearly defined, published and consistently applied.				X
3.2. The higher education institution gathers and analyses information on student progress and uses it to ensure the continuity and completion of study.			X	
3.3. The higher education institution ensures student-centred learning.			X	
3.4. The higher education institution ensures adequate student support.			X	
3.5. The higher education institution ensures support to students from vulnerable and under-represented groups.				X
3.6. The higher education institution allows students to gain international experience.		X		
3.7. The higher education institution ensures adequate study conditions for foreign students.		X		
3.8. The higher education institution ensures an objective and consistent evaluation and assessment of student achievements.			X	
3.9. The higher education institution issues diplomas and Diploma Supplements in accordance with the relevant regulations.				X
3.10. The higher education institution is responsible for the employability of graduates.			X	

Quality grade by standard

<i>IV. Teaching and institutional capacities</i>	<i>Unsatisfactory level of quality</i>	<i>Minimum level of quality</i>	<i>Satisfactory level of quality</i>	<i>High level of quality</i>
4.1. The higher education institution ensures adequate teaching capacities.			X	
4.2. The higher education institution has an objective, transparent and excellence-based procedure of teacher recruitment.			X	
4.3. Teacher advancement and re-appointment is based on objective and transparent procedures.		X		
4.4. The higher education institution provides support to teachers in their professional development.				X
4.5. The space, equipment and the entire infrastructure (laboratories, IT services, work facilities etc.) are appropriate for the delivery of study programmes, ensuring the achievement of the intended learning outcomes and the implementation of scientific/artistic activity.				X
4.6. The library and library equipment, including the access to additional resources, ensure the availability of literature and other resources necessary for a high-quality study, research and teaching.				X
4.7. The higher education institution rationally manages its financial resources.				X

Quality grade by standard

<i>V. Scientific/artistic activity</i>	<i>Unsatisfactory level of quality</i>	<i>Minimum level of quality</i>	<i>Satisfactory level of quality</i>	<i>High level of quality</i>
5.1. Teachers and associates employed at the higher education institution are committed to the achievement of high quality and quantity of scientific research.		X		
5.2. The higher education institution provides evidence for the social relevance of its scientific / artistic / professional research and transfer of knowledge.			X	
5.3. Scientific/artistic and professional achievements of the higher education institution are recognized in the regional, national and international context.		X		
5.4. The scientific / artistic activity of the higher education institution is both sustainable and developmental.			X	
5.5. Scientific/artistic and professional activities and achievements of the higher education institution improve the teaching process.		X		

2. Site visit protocol

Reakreditacija Građevinskog fakulteta Sveučilišta J. J. Strossmayera u Osijeku	Re-accreditation of the Faculty of Civil Engineering J. J. Strossmayer University of Osijek
PROTOKOL POSJETA Utorak, 22. svibnja 2018. Mjesto događanja:	VISIT PROTOCOL Tuesday, May 22nd 2018 Venue:
Vladimira Preloga 3, 31000, Osijek	Vladimira Preloga 3, 31000, Osijek

	Utorak, 22. svibnja 2018.	Tuesday, 22 nd May 2018
9:00 - 10:00	Sastanak s Upravom	Meeting with the Management
10:00 - 10:15	<i>Interni sastanak članova Stručnog povjerenstva</i>	<i>Internal meeting of the panel members</i>
10:15 - 11:00	Sastanak s radnom grupom koja je priredila Samoanalizu	Meeting with the working group that compiled the Self-evaluation
11:00 - 12:00	Sastanak članova stručnog povjerenstva (Analiza dokumenata)	<i>Internal meeting of the panel members</i> (Document analysis)
12:00 - 13:00	Sastanak sa studentima (otvoren za sve studente)	Meeting with the students (open meeting)
13:00 - 14:30	<i>Radni ručak Stručnog povjerenstva</i>	<i>Working lunch</i>
14:30 - 15:15	Sastanak s alumnima	<i>Meeting with the Alumni</i>
15:15 - 16:00	Sastanak s vanjskim dionicima - predstavnicima strukovnih i profesionalnih udruženja, poslovna zajednica, poslodavci, stručnjaci iz prakse, organizacijama civilnog društva, vanjski predavači	Meeting with external stakeholders - representatives of professional organisations, business sector/industry sector, professional experts, non-governmental organisations, external lecturers
16:00 - 16:45	Organizacija dodatnog sastanka o otvorenim pitanjima, prema potrebi	Organisation of additional meeting on open questions, if needed

	Srijeda, 23. svibnja 2018.	Wednesday, 23rd May 2018
9:00 - 10:00	Sastanak s prodekanicom za nastavu i studente te voditeljima studija	Meeting with the Vice-Dean for Teaching and Students and Heads of study programmes
10:00- 11:00	<i>Sastanak članova Stručnog povjerenstva (Analiza dokumenata)</i>	<i>Internal meeting of the panel members (Document analysis)</i>
11:00 - 12:00	Sastanak s nastavnicima (u stalnom radnom odnosu, koji nisu na rukovodećim mjestima)	Meeting with full-time employed teachers (open meeting)
12:00 - 13:00	Sastanak s asistentima	Meeting with teaching assistants
13:00 - 14:30	<i>Radni ručak Stručnog povjerenstva</i>	<i>Working lunch</i>
14:30 - 16:00	Obilazak Fakulteta (knjižnica, uredi studentskih službi, ured međunarodne suradnje, informatička služba, predavaonice) i prisustvovanje nastavi	Tour of the Faculty (library, student services, international office, IT services, classrooms) and participation in teaching classes
16:00 - 16:45	Organizacija dodatnog sastanka o otvorenim pitanjima, prema potrebi	Organisation of additional meeting on open questions, if needed

	Četvrtak, 24. svibnja 2018.	Thursday, 24th May 2018
9:00 - 9:45	Sastanak s prodekanicom za znanost i prodekanom za projekte i suradnju s gospodarstvom	Meeting with Vice-Dean for Research and Vice-Dean for Professional Affairs and Development
9:45 - 10:00	<i>Interni sastanak članova Stručnog povjerenstva</i>	<i>Internal meeting of the panel members</i>
10:00 - 10:45	Sastanak s voditeljima znanstvenih projekata	Meeting with the heads of research projects
10:45 - 11:00	<i>Interni sastanak članova Stručnog povjerenstva</i>	<i>Internal meeting of the panel members</i>
11:00 - 11:45	Sastanak s predstojnicima zavoda	Meeting with the Heads of departments
11:45 - 12:30	Organizacija dodatnog sastanka o otvorenim pitanjima, prema potrebi	Organisation of additional meeting on open questions, if needed
12:30 - 14:00	<i>Radni ručak Stručnog povjerenstva</i>	<i>Working lunch</i>
14:00 - 15:00	<i>Interni sastanak članova Stručnog povjerenstva</i>	<i>Internal meeting of the panel members</i>
15:00 - 15:15	Završni sastanak s Upravom	Exit meeting with the Management

SUMMARY

The Osijek Civil Engineering accreditation Panel consisted of an interesting and very useful mix of members (including a student) working at Universities in Croatia - namely from Rijeka, Split and Zagreb - and members from European universities in Bucharest (Romania), Delft (The Netherlands) and Tallinn (Estonia). This brought a rich variation of thoughts, international references and also detailed knowledge about Croatian rules and circumstances. Also, the Agency employees have been effective with their advice and response to questions of the Panel. We appreciated also very much the facility of a translator.

The Faculty of Civil Engineering in Osijek could be seen as a Faculty in full development, stimulated and facilitated the last few years by the perspective (and now the reality) of a splendid new building.

Most of the student-centred facilities, study activities and monitoring instrumentations are on a satisfactory level, and in several cases on a high level of quality.

The domain of research and international scientific ambition needs more time and effort, although some measures can be taken overnight: allow and stimulate publication-based PhD theses in English.

The impact of raising the quality criteria for academic positions above the minimum set by the Ministry will be felt as the years go by. Gradually, Osijek can and will develop as an interesting place for foreign faculty members, introducing real competition. Looking for academics from outside Osijek seems to be a quite formal effort: well-meant but not effective yet. We advise to start with this tomorrow, developing specific plans, implementing them and undertaking follow-up actions.

It may be expected that Civil Engineering (including Architecture and Urban Planning, a promising marriage!) will become in a quite advanced stage of development at the time of the next evaluation. We experienced a good atmosphere and enthusiasm.