

Univerza v Ljubljani



REPUBLIKA SLOVENIJA  
MINISTRSTVO ZA IZOBRAŽEVANJE,  
ZNANOST IN ŠPORT



*Naložba v vašo prihodnost*  
OPERACIJO DELNO FINANCIRA EVROPSKA UNIJA  
Evropski socialni sklad

# Evaluation Report



## University of Ljubljana

### **CLUSTER A – Civil Engineering and Environmental Engineering**

- *University Bachelor degree programme Civil Engineering*
- *Masters degree programme Civil Engineering*
- *Professional Bachelor degree programme Construction Management*
- *Masters degree programme Buildings*
- *University Bachelor degree programme Water Management and Environmental Engineering*
- *Masters degree programme Water Management and Environmental Engineering*

### **CLUSTER B – Geodesy**

- *University Bachelor degree programme Geodesy and Geoinformation*
- *Professional Bachelor degree program Technical Real Estate Management*
- *Masters degree programme Spatial Planning*
- *Masters degree programme Geodesy and Geoinformation*

Dusseldorf, 25 September 2015

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## Abbreviations:

ASIIN = Agency implementing the present evaluation procedure

FGG = Faculty of Civil and Geodetic Engineering

SSC = ASIIN Subject-specific Criteria

# A About the Evaluation Process

<p><b>Evaluation subject</b></p>	<p>University of Ljubljana</p> <p><b>CLUSTER A Civil Engineering and Environmental Engineering</b></p> <ul style="list-style-type: none"> <li>• <i>University Bachelor degree programme Civil Engineering</i></li> <li>• <i>Masters degree programme Civil Engineering</i></li> <li>• <i>Professional Bachelor degree programme Construction Management</i></li> <li>• <i>Masters degree programme Buildings</i></li> <li>• <i>University Bachelor degree programme Water Management and Environmental Engineering</i></li> <li>• <i>Masters degree programme Environmental Engineering</i></li> </ul> <p><b>CLUSTER B Geodesy</b></p> <ul style="list-style-type: none"> <li>• <i>University Bachelor degree programme Geodesy and Geoinformation</i></li> <li>• <i>Professional Bachelor degree program Technical Real Estate Management</i></li> <li>• <i>Masters degree programme Spatial Planning</i></li> <li>• <i>Masters degree programme Geodesy and Geoinformation</i></li> </ul>				
<p><b>Experts</b></p>	<p><b>Cluster A</b></p> <p>Prof. Dr. Hans-Joachim Bargstädt, University Weimar          Alfredo Barillas, TSB Ingenieurgesellschaft mbH          Prof. Dr. Jürgen Stamm, Technical University Dresden</p> <p><b>Cluster B</b></p> <p>Dr. Christian Hesse, Dr. Hesse und Partner Ingenieure          Prof. Dr. Wolfgang Reinhardt, University of the Armed Forces Munich</p>				
<p><b>Representative of ASIIN Headquarter</b></p>	<p>Viktoria Börner, M.A., MBA</p> <p>Ass.iur. Melanie Gruner</p>				
<p><b>Timeline</b></p>	<table border="1"> <thead> <tr> <th data-bbox="603 1823 845 1877">Date</th> <th data-bbox="845 1823 1546 1877">Milestone</th> </tr> </thead> <tbody> <tr> <td data-bbox="603 1877 845 1993">20 Jan 2015</td> <td data-bbox="845 1877 1546 1993">Submission of the final version of the self-assessment report</td> </tr> </tbody> </table>	Date	Milestone	20 Jan 2015	Submission of the final version of the self-assessment report
Date	Milestone				
20 Jan 2015	Submission of the final version of the self-assessment report				

	<p>18/19 Febr 2015      Date of the onsite visit</p> <p>11 May 2015          Submission of the draft of the evaluation report</p> <p>25 May 2015          Feedback on the draft of the evaluation report</p> <p>22 June 2015          Submission of the finalised version of the evaluation report</p>
<p><b>Relevant criteria</b></p>	<p>ASIIN General Criteria for the Accreditation of Degree Programmes (28/03/14) used as reference for the assessment  <a href="http://www.asiin-ev.de/media/ASIIN_General_Criteria_for_the_Accrediation_of_Degree_Programmes_2014-03-28.pdf">http://www.asiin-ev.de/media/ASIIN_General_Criteria_for_the_Accrediation_of_Degree_Programmes_2014-03-28.pdf</a></p> <p>Subject-Specific Criteria Relating <a href="http://www.asiin-ev.de/media/feh/ASIIN_TC_03_Civil_Engineering_Surveying_and_Architecture_2012-09-28.pdf">http://www.asiin-ev.de/media/feh/ASIIN_TC_03_Civil_Engineering_Surveying_and_Architecture_2012-09-28.pdf</a> to the accreditation of Bachelor's and Master's degree programmes in civil engineering and geodetic engineering, architecture, interior design, and landscape architecture as well as urban and regional planning (28 Sept '12) used as reference for the assessment</p> <p>Standards and Guidelines for Quality Assurance in the European Higher Education Area (2009)  <a href="http://www.enqa.eu/wp-content/uploads/2013/06/ESG_3edition-2.pdf">http://www.enqa.eu/wp-content/uploads/2013/06/ESG_3edition-2.pdf</a></p>

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### **Preliminary Remark**

In the framework of project KUL, ASIIN conducted an evaluation of the degree mentioned below at the UL Faculty of Civil and Geodetic Engineering on 18/19 February 2015, leading to the following report.

ASIIN considers evaluations as an instrument for organizational development triggered by a two staged process of an internal self assessment followed by an independent third party assessment by external peers. In the first stage members of the evaluated organisation are asked to implement an internal self-reflection process including relevant stakeholders leading to a self evaluation report (SER). This report states a shared internal understanding or at least the overview on internal views of/on strengths and weaknesses of the evaluated subject. ASIIN then combines an audit team representing suitable expertise concerning the evaluated subject, independency and a good match of the different stakeholder-perspectives engaged with or affected by the evaluated subject. This team reviews the SER, including evidences, and conducts a site visit at the institution, where the SER is validated in discussions with the relevant stakeholders. The findings are compiled in an evaluation report stating strengths and weaknesses from the external view and recommendations towards their enhancement.

The evaluation report and the site visit are structured with the help of a pre-defined and agreed catalogue of evaluation criteria. It refers to (1) objectives, content and implementation of the degree programmes, (2) their structure, method and implementation, (3) concept and organisation of examinations (4) resources and (5) documentation and transparency.

The further report proceeds as follows: In chapter B the fact-finding is reported on which the assessment of the peers is based. The information principally stems from the self-assessment report and related appendices provided by the Higher Education Institution. The following chapters include the assessment results of the peers about compliance with the evaluation criteria.

## B Characteristics of the Degree Programmes

a) Name & Final Degree	b) Mode of Study	c) Duration & Credit Points	d) First time of offer & Intake rhythm	e) Number of students per intake	f) Fees
Professional Bachelor Degree Programme Construction Management	Full time	6 Semester 180 CP	WS 2007/09 Winter Semester	120	/
Ba Civil Engineering	Full time	6 Semester 180 CP	WS 2008/09 Winter Semester	180	/
Ma Civil Engineering	Full time	4 Semester 120 CP	WS 2012/13 Winter Semester	120	/
Ba Water Science and Environmental Engineering	Full time	6 Semester 180 CP	WS 2008/09 Winter Semester	70	/
Ma Water Science and Environmental Engineering	Full time	4 Semester 120 CP	WS 2012/13 Winter Semester	40	/
Ma Building	Full time	4 Semester 120 CP	WS 2011/12 Winter Semester	40	/
Ba Technical Real Estate Management	Full time	6 semester 180 CP	WS 2007/09 Winter Semester	40	/
Ba Geodesy and Geoinformation	Full time	6 Semester 180 CP	WS 2008/09 Winter Semester	40	/
Ma Geodesy and Geoinformation	Full time	4 Semester 120 CP	WS 2012/13 Winter Semester	30	/
Ma Spatial Planning	Full time	4 Semester 120 CP	WS 2011/12 Winter Semester	30	/

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For the Construction Management programme the **intended learning outcomes** and **curriculum** are published under:

[http://www3.fgg.uni-lj.si/fileadmin/user\\_upload/UL\\_FGG\\_1st\\_cycle\\_programme -  
\\_Construction\\_management.pdf](http://www3.fgg.uni-lj.si/fileadmin/user_upload/UL_FGG_1st_cycle_programme_-_Construction_management.pdf) (11 May 2015)

For the Ba Civil Engineering programme the **intended learning outcomes** and **curriculum** are published under:

[http://www3.fgg.uni-lj.si/fileadmin/uredniki/msargac/UL\\_FGG\\_1st\\_cycle\\_programme -  
\\_Civil\\_Engineering\\_BA.pdf](http://www3.fgg.uni-lj.si/fileadmin/uredniki/msargac/UL_FGG_1st_cycle_programme_-_Civil_Engineering_BA.pdf) (11 May 2015)

For the Ma Civil Engineering programme the **intended learning outcomes** and **curriculum** are published under:

[http://www3.fgg.uni-lj.si/fileadmin/user\\_upload/UL\\_FGG\\_2nd\\_cycle\\_programme -  
\\_Civil\\_engineering.pdf](http://www3.fgg.uni-lj.si/fileadmin/user_upload/UL_FGG_2nd_cycle_programme_-_Civil_engineering.pdf) (11 May 2015)

For the Ba Water Science and Environmental Engineering the **intended learning outcomes** and **curriculum** are published under:

[http://www3.fgg.uni-lj.si/fileadmin/uredniki/msargac/UL\\_FGG\\_1st\\_cycle\\_programme -  
\\_Water\\_science\\_and\\_environmental\\_engineering .pdf](http://www3.fgg.uni-lj.si/fileadmin/uredniki/msargac/UL_FGG_1st_cycle_programme_-_Water_science_and_environmental_engineering.pdf) (11 May 2015)

For the Ma Water Science and Environmental Engineering the **intended learning outcomes** and **curriculum** are published under

[http://www3.fgg.uni-lj.si/fileadmin/uredniki/msargac/UL\\_FGG\\_2nd\\_cycle\\_programme -  
\\_Water\\_science\\_and\\_environmental\\_engineering.pdf](http://www3.fgg.uni-lj.si/fileadmin/uredniki/msargac/UL_FGG_2nd_cycle_programme_-_Water_science_and_environmental_engineering.pdf) (11 May 2015)

For the Ma Building the **intended learning outcomes** and **curriculum** are published under

[http://www3.fgg.uni-lj.si/fileadmin/user\\_upload/UL\\_FGG\\_2nd\\_cycle\\_programme - Buildings.pdf](http://www3.fgg.uni-lj.si/fileadmin/user_upload/UL_FGG_2nd_cycle_programme_-_Buildings.pdf)  
(11 May 2015)

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For the Ba Technical Real Estate Management the **intended learning outcomes** and **curriculum** are published under

[http://www3.fgg.uni-lj.si/fileadmin/user\\_upload/UL\\_FGG\\_1st\\_cycle\\_programme -  
\\_Technical\\_real\\_estate\\_management.pdf](http://www3.fgg.uni-lj.si/fileadmin/user_upload/UL_FGG_1st_cycle_programme_-_Technical_real_estate_management.pdf) (11 May 2015)

For the Ba Geodesy and Geoinformation the **intended learning outcomes** and **curriculum** are published under

[http://www3.fgg.uni-lj.si/fileadmin/uredniki/msargac/UL\\_FGG\\_1st\\_cycle\\_programme -  
\\_Geodesy\\_and\\_geoinformation.pdf](http://www3.fgg.uni-lj.si/fileadmin/uredniki/msargac/UL_FGG_1st_cycle_programme_-_Geodesy_and_geoinformation.pdf) (11 May 2015)

For the Ma Geodesy and Geoinformation the **intended learning outcomes** and **curriculum** are published under

[http://www3.fgg.uni-lj.si/fileadmin/user\\_upload/UL\\_FGG\\_2nd\\_cycle\\_programme -  
\\_Geodesy\\_and\\_geoinformation\\_-\\_currently\\_valid.pdf](http://www3.fgg.uni-lj.si/fileadmin/user_upload/UL_FGG_2nd_cycle_programme_-_Geodesy_and_geoinformation_-_currently_valid.pdf) (11 May 2015)

The following **intended learning outcomes** are reported for the Ma Spatial Planning:

[http://www3.fgg.uni-lj.si/fileadmin/user\\_upload/UL\\_FGG\\_2nd\\_cycle\\_programme -  
\\_Spatial\\_planning\\_-\\_currently\\_valid.pdf](http://www3.fgg.uni-lj.si/fileadmin/user_upload/UL_FGG_2nd_cycle_programme_-_Spatial_planning_-_currently_valid.pdf) (11 May 2015)

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## C Findings of the Peers

### 1. Degree Programmes: objectives, content and implementation

<b>Evaluation Criterion 1.1: Objectives of the degree programme</b>
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#### **Analysis and findings of the peers**

The Faculty of Civil and Geodetic Engineering (hereinafter: UL FGG) offers first cycle and second cycle education. First cycle study programs are distinguished between professional study programs of higher education or university study programs. The reviewed study programs within Cluster A – Civil Engineering and Environmental Engineering are classified as following: The bachelor programs Civil Engineering and Water Management and Environmental Engineering are categorized as first cycle academic study programs; Construction Management is categorized as a first cycle professional bachelor degree program. The master programs Civil Engineering, Buildings, and Water Science and Environmental Engineering are characterized as second cycle academic study programs. The reviewed study programs within Cluster B – Geodesy are classified as following: The bachelor program Geodesy and Geoinformation is categorized as a first cycle academic study program; Technical Real Estate Management is categorized as a first cycle professional bachelor degree program. The master programs Geodesy and Geoinformation and Spatial Planning are characterized as second cycle academic study programs.

The program objectives and intended learning outcomes stated for the first cycle programs generally reflect the level of academic qualification as described in level six of the European Qualification Framework (hereinafter: EQF). This contains competences such as an advanced knowledge of the field of study or work, advanced skills to solve problems in the specialised field of study or work, and the ability to manage complex technical activities or projects. The program objectives and intended learning outcomes formulated for the second cycle programs overall correspond with level seven of the EQF: Students enrolled in the above mentioned master programs should acquire specialized knowledge in their particular field of studies as the basis for critical thinking and research. They will be enabled to manage and transform complex study contexts individually as well as in a group setting, to apply their theoretical knowledge in practice, and to develop specialised problem solving skills for professional as well as practical problems. The peers note that the curricula of the first and second cycle programs are concerted well, however, at the same time offering no clear distinction between the two different levels of qualifications (see following chapters).

The peers affirm that the qualification profiles of the degree programmes in general enable the students to take up an occupation that corresponds with their qualification (see 1.4).

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### Strengths (+) and Weaknesses (-)

- + The program objectives and intended learning outcomes generally reflect the level of academic qualification of the European Qualification Framework

### Evaluation Criterion 1.2: Learning outcomes of the programme

#### Analysis and findings of the peers

The peers confirm that the program objectives of all programs under review are specified as learning outcomes to be acquired by the students. The curricula and intended learning outcomes for all programs are published in the respective program brochure in both Slovenian and English and are accessible to all interested parties, including students, faculty and staff, on the UL FGG website. The peers indicate that the learning outcomes should further be explicitly stated in an official document (e.g. Diploma Supplement) allowing students to rely on them in the event of e.g. internal quality assurance.

The peers appreciate that UL FGG Management has taken into consideration various parties when formulating the intended learning outcomes for all programs, among them students, teachers as well as potential employers. They take note that the university has implemented a procedure that aims to regularly monitor and analyse the program objectives and proposed learning outcomes and introduce adjustments if necessary. This procedure involves the Vice-Dean of Study Affairs, Heads of Department, Study Boards of each Department, the Quality Assurance Commission, teaching staff, students and the Student Council.

The learning outcomes for all programs are described as competences to be acquired by the learners; they are divided into general competences and course-related competences. The self-assessment report further contains a classification that outlines in which courses the particular competence will be conveyed. While the peers deem the intended learning outcomes for each program generally as comprehensible, they point out that the learning outcomes are not expressed specific enough to give information on the individual profile of each program and consequently do not allow for a clear distinction between the various degree programs. This especially applies to the first cycle professional and academic programs: Both programs pursue different objectives and also require different entry admission, as the peers understand from the remarks of the program coordinators: Professional study programs of higher education are oriented towards acquiring a professionally applied knowledge, skills and capabilities. The university study programs should enable students to gain knowledge with an in-depth study of theoretical and methodological concepts. In light of the fact that this distinction between the two types of undergraduate education is looked upon favorably by the peers, they re-emphasize to review the intended learning outcomes to reflect these different focuses. The intended learning outcomes of all programs should further allow for a clear distinction between the different levels of qualification. The proposed changes should permit interested outsiders to get a clear picture of the study programs offered at UL FGG. The peers indicate that the intended learning outcomes should serve

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as a foundation for a continuous development of the study programs. This will allow UL FGG to bring more focus to the individual programs and adjust the curricula if and where necessary. Specific and verifiable learning outcomes that are established and employed widely within the university are seen as a necessary prerequisite to facilitate this process.

The peers state that the aims and intended learning outcomes of all programs under review are generally in line with the exemplary learning outcomes defined by the Subject-Specific Criteria (SSC) of ASIIN's Technical Committee for Civil Engineering and Surveying. I.e., it is defined that students should acquire a profound knowledge and understanding of natural science, mathematics, and fundamentals of engineering; they should be able to solve problems arising in the field of engineering; students should be able to realize engineering design and to apply suitable methods to conduct investigations to technical problems; they should further be able to apply their knowledge to practice and finally acquire transferable skills (communication skills, team work, etc.). The peers argue that the learning outcomes defined for the study programs within Cluster B – Geodesy need to have a stronger emphasis on computer-related topics conveyed as part of the curriculum (see Criterion 1.6).

Based upon the English translations, the peers confirm that the names of the degree programs properly reflect the intended aims and learning outcomes.

#### **Strengths (+) and Weaknesses (-)**

- + Program objectives of all programs are specified as learning outcomes
- + Study Programs are generally in line with the SSC
- Computer-related topics are not emphasized sufficiently in learning outcomes of Cluster B – Geodesy programs
- Learning outcomes are not explicitly stated in an official document
- Learning outcomes are not defined specific enough to allow for a comprehensible distinction between the programs and level of qualification

### **Evaluation Criterion 1.3: Learning outcomes of the modules/module objectives**

#### **Analysis and findings of the peers**

The peers take note that in the context of UL FGG, the term “module” refers to a set of classes that allow students to specialize within their degree. A module defined according to the ASIIN criterion, i.e., a formally structured learning experience with a coherent and explicit set of learning outcomes and assessment criteria, is referred to as a “course”. All courses of the programs under review have corresponding bilingual course syllabi (Slovenian/English) which are available to the students on the UL FGG website. The syllabi provide information about course goals and objectives, intended learning outcomes and prerequisites, teaching methods, course assignments

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as well as formal requirements. The knowledge, competences and skills to be acquired by the students are defined. The peers confirm that the courses have been adapted to the requirements of the degree programs and help to reach both the qualification level and the overall intended learning outcomes. The information provided is generally expected to be clearly understandable to the relevant stake holders. This applies only with restrictions to the bachelor and master programs Geodesy and Geoinformation: the peers note that some descriptions mismatch the course title in the curricula provided in the self-assessment report with the course title in the course descriptions. The mismatch potentially results from the transition from diploma studies to the bachelor and master programs; in any case, hinders an effective use of the course descriptions and consequently shows need for review. Additionally, it is necessary to review the English technical terminology used within the descriptions.

While the peers evaluating the programs in Cluster A – Civil Engineering and Environmental Engineering in principle appreciate the very detailed and accessible syllabi for all programs, they raise concern over the potential administrative effort required to keep the documents up to date. They question whether it would be possible to condense the provided information without a loss of quality and encourage reviewing the current descriptions particularly regarding their lengths. The student representatives confirm that the descriptions are clear and reflect the actual course content of the classes.

The peers reviewing the programs in Cluster B – Geodesy take note that the course descriptions provided are not widely used according to the student representatives. This might result from the fact that all programs offer only few electives, thus it is not necessary to consult the descriptions when making a choice for or against a certain course. The peers nevertheless emphasize the importance of course descriptions; they should be understood and used as a reference guide that provide students with the necessary information about the intended learning outcomes and thus allow them to judge whether or not the objectives haven been reached at the end of each course. Furthermore, the descriptions should serve as a base for further communication and, most importantly, coordination between the teaching staff and persons responsible for a course to make transparent what competences have already been acquired by the students to avoid redundancy (see 1.6).

#### **Strengths (+) and weaknesses (-)**

- + Detailed and accessible course descriptions for programs within Cluster A – Civil Engineering and Environmental Engineering
- Mismatch of course titles for both Geodesy and Geoinformation programs

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<b>Evaluation Criterion 1.4: Needs of stakeholders and practical relevance</b>
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**Analysis and findings of the peers**

The peers take note that the curricula of the degree programs have been designed in close cooperation between the UL FGG Management, teachers, students, and potential employers. Additional input was given by a survey among employers and graduates from the UL FGG study programs, national legislations for the areas of construction, geodesy and surveying as well as European reports regarding the extent of specific contents (FEANI). UL FGG states that all programs are re-evaluated regularly to ensure that the curricula correspond to the needs of the industry as well as the social environment.

The high demand for graduates from all degree programs within Cluster B - Geodesy proves that the education is job-driven, i.e., designed to meet labor market needs, and enables students to secure good jobs and successful careers upon completion of their studies. Students oftentimes maintain close contacts to potential employers already during their studies which allow them to enter the job market relatively smoothly. The peers note that 60-70 % of the graduates are employed by private survey offices. The graduates additionally benefit from the fact that the University of Ljubljana is currently the only Slovenian University that offers education in the fields of geodetic engineering and surveying. In general, the programs have achieved a good reputation, also attracting students from the neighbouring countries such as Croatia. The peers regret that the University's possibility to offer additionally courses in English is limited by governmental regulations; a higher offer of English-speaking courses would certainly attract even more foreign students and ultimately contribute to the programs' further development. This issue has also been discussed in the institutional evaluation.

The peers are informed that the chances of finding a job after graduation especially for students enrolled in the Civil and Environmental Engineering programs has been affected strongly by the 2008 economic and financial crisis. The program coordinators stress that until 2008 the number of unemployed graduates in technical professions has been marginal. Graduates have been typically employed by construction or design companies, engineering office, infrastructural companies, institutes and public administration, civil engineering laboratories, etc. However, the Slovenian engineering and construction industry has been hit hard by the crisis with full recovery not yet in sight. This has led to a general decrease in demand for graduates fitting these profiles and created a situation where especially students finishing with their first cycle studies are struggling to find suitable employment. Consequently, students opt for alternative employment opportunities (free-lancing, jobs abroad) or decide to continue straight with second cycle education to increase their chances in the labor market. This latter is being encouraged by the teaching staff. In light of the uncertain job opportunities, the peers acknowledge that UL FGG Management has picked up on recent policy developments that create potential demand for its graduates. This applies especially to the relatively newly established master program Building that puts an emphasis on the issues of energy efficiency of buildings which is also one of the priorities on the agenda of both the Slovenian Government as well as the European Union.

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UL FGG strives to provide students with opportunities for practical experience as part of their education. The peers note that each curriculum contains a selection of practical work projects, practical assignments and/or laboratory works that serve to introduce students to industry-related problem, encourage them to apply their knowledge and experience into practice, and finally teach the skills necessary to pursue a successful engineering career. The obligatory practical training worth between four and eight credits is seen ambivalent: The peers generally appreciate the possibility for students to gain practical experience outside the university; students are expected to find their own internship placement and to reconcile the specific tasks with their mentor. However, the duration of the internships is seen as too short to make for a meaningful exercise. UL FGG students only spent between two to four weeks at a company which does not allow for an in-depth insight into the aspired work environment. It is further perceived to be unattractive from an employer's perspective which makes it difficult to find a suitable internship placement as the student representatives confirm. The peers encourage the program coordinators to review the current structure of the practical training to allow students more time to acquire sufficient experience and skills in a professional job setting.

#### **Strengths (+) and Weaknesses (-)**

- + Study programs strive to meet current needs of market and society
- Time awarded to practical training is too short to gain sufficient skills and in-depth insights into the aspired work environment

### **Evaluation Criterion 1.5: Admissions and entry requirements**

#### **Analysis and findings of the peers**

The admission and entry requirements for each of the degree programs are clearly defined. Criteria for recognizing knowledge and skills acquired prior to enrolment and for transferring between programs are described as well. All relevant information is published in the specific program brochures which are publicly viewable on the UL FGG website. The information is available in both Slovenian and English.

The peers consider the admission requirements suitable to facilitate achievement of the program learning outcomes. Entry to the university is competitive. Especially for the study programs within Cluster B - Geodesy the university receives more applications than there are places. Thus preference can be given to the most qualified candidates which consequently results in a relatively low drop-out rate for these programs. The general possibility of changing programs even from a first-cycle professional to a first-cycle academic program within UL FGG is looked upon favourably by the peers. Changing the program can be straight forward if the candidate holds a full Matura certificate and if the curricula of the two programs are closely related or might require additional credits and/or exams to meet the requirements of the new program.

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The peers welcome that UL FGG has established a procedure allowing for some flexibility in the admission of those who fall short of the admission and entry requirements. A variety of pre-semester but also intercession bridging and preparatory courses are offered to help build up students' skills, knowledge and abilities necessary to pursue a successful academic career.

#### **Strengths and weaknesses**

- + Permeability between the different degree programs, esp. between the professional and academic degree programs

### **Evaluation Criterion 1.6: Curriculum/Content**

#### **Analysis and findings of the peers**

In general, the peers acknowledge that the curricula of all degree programs are designed to allow students to achieve the intended learning outcomes in order to successfully complete their studies. With the exception of the master program Building, whose aim is a specialized education that closes the gap between architecture and civil engineering, the programs on both qualifications levels are viewed as offering a solid education that enables students to integrate fundamental scientific engineering principles and prepare them to become professional engineers. The curricula therefore integrate scientific and technical knowledge with an appreciation for economic and environmental concern as well as social skills (team work, communication, etc.); the latter being taught in the various team projects throughout the respective degree programs but also in the elective or general qualification courses offered by the universities. The peers take note that the reason for the individual sets of classes for the first cycle professional and academic programs despite punctually overlapping curriculum contents is to be found in governmental regulations. These state that vocational students and university students cannot share one educational program.

The peers in charge of Cluster B – Geodesy, however, call attention to the fact that the programs under their review contain a lot of redundancies. This does not apply for the master program Spatial Planning, whose interdisciplinary curriculum is coherent. After discussing with both the program coordinators as well as teaching staff, they come to the conclusion that these redundancies are not employed for didactic reasons but rather result from a lack of coordination between the parties involved. The peers affirm that redundancies may certainly be used as a didactic method, if employed selectively. However, in the case at hand, less time should be granted for the repetition of course content than the introduction of program components of additional benefit to the students. The peers note, for instance, that computer-related topics are not represented adequately within the curricula of all programs – or at least are not sufficiently visible to outsiders. Further room for improvement is identified with regards to the practical training that students have to obtain (see 1.4) and concerning the extent and relevance of the final theses (see 2.2). The latter two also apply to the programs under review in Cluster A – Civil Engineering and Environmental Engineering.

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### Strengths (+) and Weaknesses (-)

- + Curricula of degree programs provide solid education
- Redundancy of course content in Cluster B – Geodesy programs due to lack of coordination

## 2. Degree Programme: Structures, methods and implementation

### Evaluation Criterion 2.1: Structure and modularity

#### Analysis and findings of the peers:

Within Cluster A – Civil Engineering and Environmental Engineering, the first cycle studies Construction Management, Civil Engineering and Water Science and Environmental Engineering are three-year programs (6 semesters). The second cycle studies Civil Engineering and Water Science and Environmental Engineering are 2-year degree programs (4 semesters). Most curricula consist of a comprehensive core curriculum, allowing only little room for electives and specialization. Modules, here to be understood as specializations, are only offered for the Construction Management and the two Civil Engineering programs. Students of the Construction Management program may develop an expertise by choosing the module and corresponding courses “Structures”, “Organization” or “Traffic” upon completion of the fifth semester. In the context of UL FGG, “course” refers to a closed unit that consists of e.g. lecture, seminars, tutorials, etc and has its own learning outcomes, syllabus and assessment schedule. The bachelor degree program Civil Engineering offers five modules in the sixth semester (“Building”, “Hydraulics”, “Municipal Engineering”, “Structure” and “Traffic”), and the master program Civil Engineering is divided into three orientations “Geotechnics – Hydrotechnics”, “Structural Engineering”, and “Infrastructural Engineering”, the two latter being again split up into four modules each. The curricula of both the bachelor and the master program Water Science and Environmental Engineering follow a fixed course structure, no orientations or specializations are being offered. The peers consider the program structure with regards to the sequencing and technical composition of courses overall suitable to support the intended learning outcomes. Cause for criticism, however, derives from the fact that occasionally courses are cancelled due to low enrollment (< 10) on very short notice. Since the pay of the teaching staff is determined by the number of classes taught, professors usually offer more classes than will take place eventually which forces students to enroll in alternative course options to avoid a delay in their studies. The peers question whether the introduction of a fixed cycle upon which low-frequented courses are offered on an e.g. two year rotation could prevent short notice cancellation and thus provide more planning reliability for both students and teaching staff.

Within Cluster B – Geodesy, the first cycle studies Technical Real Estate Management and Geodesy and Geoinformation are three-year degree programs (6 semesters). The second cycle studies Geodesy and Geoinformation and Spatial Planning are 2-year degree programs (4 semesters). No

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orientations or modules, i.e., specializations, are offered for either of the programs; all four programs follow a fixed course structure. Each course is a closed unit, consisting of e.g. lectures, seminars or tutorials with individual learning outcomes, syllabi and assessment schedules. The peers confirm that the proposed course sequences of the individual programs are generally designed to keep students on track to achieve their educational goal. It is advised, however, to revise the technical compositions of the courses in both Geodesy and Geoinformation programs to ensure that all course elements align with the intended learning outcomes of the courses and the programs as such respectively. The peers also see demand for better coordination within but also between the two programs to prevent overlapping course contents. This also applies to the Technical Real Estate Management program.

The peers note that none of the curricula contain a specific mobility window which allows students to study abroad or take up an internship without incurring any delay in their studies. While the idea to study abroad seems to become increasingly more popular among the students, the peers gain the impression that the general willingness of UL FGG faculty to support students' aim to incorporate an international experience into their curriculum seems comparably low. Due to the lack of binding regulations for the recognition of their achievement at a foreign institute, students are reluctant to study abroad as they run the risk of not graduating on time. (Delayed graduation by more than one year per cycle carries extra cost.) The peers emphasize the benefit of study abroad for both students' academic learning as well as personal development and encourage the faculty to create opportunities for student mobility within the degree programs and to establish a reliable mechanism for study abroad credit transfer.

#### **Strengths and weaknesses**

- + Module choices for bachelor and master program Civil Engineering
- Unpredictable cancellation of courses in Civil Engineering and Environmental Engineering programs
- Technical composition of courses in both Geodesy and Geoinformation programs
- Overlapping course content due to lack of coordination
- Lack of mobility window as well as reliable regulations for the recognition of transfer credits and grades

#### **Evaluation Criterion 2.2: Workload and credit points**

##### **Analysis and findings of the peers**

The total student workload equals 180 credit points to obtain a Bachelor's degree and 300 credit points to obtain a Master's degree. In one academic year, UL FGG students can obtain 60 credit points; one credit point corresponds to 25 to 30 hours of student work or 1500 to 1800 hours per

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year. This estimation includes contact hours, self-study time and preparation for knowledge assessment.

The total workload and allocation of such foreseen for each degree program is considered adequate to the respective qualification level and should allow for an on-time graduation as the student representatives confirm. The individual workload expectations described in the course syllabi seem transparent and accurate to the peers; this applies with restrictions to the workload credits granted for the final theses in most programs. The peers criticize that there is no faculty-wide concept for the assessment of the final thesis: while the time awarded to write the thesis is determined by Art. 87 of the “Rules on the 1st and 2nd cycle studies at the UL FGG” (90 days for students enrolled in a first-cycle professional or academic study program and 180 days for students enrolled in a second-cycle program), there seems to be no standards in place that define the granting of credits for the final theses. This results in an inconsistent and incomprehensible distribution of credits points among the different programs (ranging from five to ten credit points for the bachelor theses and from ten to twenty credit points for the master theses) and consequently to an inaccurate workload estimation as the case in e.g. the comparably low-credited Civil Engineering master thesis. The revision of the exemplary final thesis illustrate that the actual time expended to complete the thesis is more time-consuming than estimated in the syllabus (250 – 300 hours), thus needs adjustment. This is also confirmed by the student representatives. Consequently, the peers recommend revising the current credit granting process in terms of comparability and transparency and further encourage to establish a mechanism that allows monitoring whether the assignments can be accomplished in the estimated time. Additionally, a general reevaluation of the credit points granted for the final theses should be considered to ensure that the final thesis is valued in accordance with its purpose as a final and conclusive assessment bringing students to do independent research and academic work at the end of a study cycle. This applies especially to the bachelor theses in Civil Engineering, Technical Real Estate Management, and Geodesy & Geoinformation, which should be valued as a first independent research project. An estimated workload of approx. 150 – 180 hours does not seem sufficient to fulfill this purpose. Apart from the discussed discrepancy, the student representatives confirm that the predicted workload is generally in accordance with the actual workload. They do, however, point out that the workload tends to increase towards the end of the semester for most courses and would appreciate a more balanced allocation of assignments throughout the semester.

It remains unclear what measures are employed to evaluate the proposed workload allocation for the individual classes efficiently. The peers take note of the student surveys that are conducted at the end of each semester; however, none of the questions listed on the exemplary evaluation sheet refers to workload distribution. The questions seem rather general, allowing only for vague conclusions with regards to the actual time expended to meet the requirements of the particular course. The peers kindly ask for clarification. In general, the overall questions addressed in the evaluation sheets for the degree programs within Cluster A – Civil Engineering and Environmental

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Engineering seem too broad to allow for any conclusions beneficial for further advancement of the courses. The questions listed in the evaluation sheet for the degree programs within Cluster B - Geodesy seems more specified, thus should result in a more instructive feedback.

#### **Strengths (+) and Weaknesses (-)**

- Absence of faculty-wide standardized procedure regulating the assessment of the final theses in the degree programs
- Relatively low-credited final theses in most bachelor programs as well as in the Civil Engineering master program
- Absence of institutionalized workload assessment
- Students surveys for degree programs within Cluster A – Civil Engineering and Environmental Engineering are too broad to allow for instructive feedback

### **Evaluation Criterion 2.3: Educational Methods**

#### **Analysis and findings of the peers**

The variety of teaching methods and tools employed by the UL FGG faculty is considered suitable to achieve the objectives of the degree programs and to create a learning environment that accommodates student's individual needs. The learning and teaching methods are specified for each course in the course descriptions and range from lectures, seminars, tutorials, laboratory work, and homework to group projects and field work. An emphasis is placed on practical-orientated teaching methods (e.g. lab-based practical) as well as E-learning techniques which are becoming increasingly more popular. A well established tutorial system is meant to support academically challenged students (see 2.4). The student representatives express a general satisfaction with the applied teaching methods.

With the exception of the Civil Engineering bachelor and master program and the program in Construction Management (see 2.1), the peers perceive the curricula of all degree programs under review as relatively inflexible. They realize that the proportion of elective and required classes for both the bachelor and the master programs meets the requirement of Slovenian law. However, only 10% - 16% of the current curricula consist of elective courses, allowing the students only limited opportunity to personalize their education. The peers therefore strongly support the university's intention, to offer more elective courses at least for the 2<sup>nd</sup> cycle programs to provide an opportunity to create a more individualized program of education aimed at the student's interests, needs and career aspiration.

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The peers take note that all course syllabi indicate the number of contact hours and hours of independent learning/study. They consider the proposed ratios adequate to facilitate independent academic work.

**Strengths (+) and Weaknesses (-)**

- Relatively inflexible curricula of most degree programs due to high number of required classes

**Evaluation Criterion 2.4: Support and assistance of students**

**Analysis and findings of the peers**

UL FGG offers a variety of programs and services designed to promote students' academic success: The Office for Student Affairs offers general advisory and consultancy services on matters ranging from university procedure to academic issues. Chairpersons of individual departments act as study program trustees, a Student Council serves as a point of contact and represents the student body in all academic, administrative and extra-curricular matters, and the Promotion and Career Center provides a network of career communities to help students and alumni achieve career discovery, career opportunities, and career advancement. Students with special needs are assisted by the study departments and individual faculty. An overview of all available services can be found on the UL FGG web page.

The peers especially appreciate the well organized system of group and individual tutoring that has been established in response to the evaluation of the university's quality management system. From the very beginning of their academic career, students have designated teacher supervisors for each class in addition to individual support for smaller groups provided by teachers or students from more advanced classes. The student tutorials offered are monitored closely and assisted by the Vice-Dean for Student Affairs and range from pedagogical to introductory student and course-specific tutorship to tutoring for students with special status and even foreign students. Worth mentioning and highly praised by the student representatives are especially the student supported tutorials that are offered by the second year students to the first year students in the area of mechanics and mathematics. To create a benefit for both the tutee and the tutor, the peers note that UL FGG grants credits to the student tutors that count towards their final degree; the student tutorship is also included among the courses in the Diploma Supplement.

The peers value the overall satisfaction that the student representatives express with UL FGG's academic advising and planning services. The availability of teaching staff to the students, the level of supervision provided especially throughout the final thesis, and the general willingness of professors to respond timely to student's complaints are seen as a contribution to facilitate a rich learning environment. Overall, the peers come to the conclusion that both the subject-specific and general support and assistance offered by UL FGG help the students to reach the intended learning outcomes of the specific degree programs and their education goal.

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#### Strengths and weaknesses

- + Tutorial system
- + Availability of teaching staff

### 3. Examinations: concept and organisation

#### Analysis and findings of the peers

Exam rules and regulations are defined by the “Rules on the 1st and 2nd cycle studies at the UL FGG”, accessible via the UL FGG webpage. Final examinations are held at the end of the fall, winter and summer session in addition to continuing assessment throughout the semester. Knowledge assessment includes oral, written and combined oral and written examinations. Other types of knowledge assessment such as mid-term examination, test, seminar work, tutorial work and report, are intended to on-going reviews and assessments of knowledge according to individual component parts of a course. The course descriptions indicate which forms of examination apply. The composition of the grade is at the professor’s responsibility, however, needs formal approval by the senate of the faculty. Students must be informed how the examination grade is defined and calculated. These principles are presented to the students at the beginning of every course; additionally, the information is collected and published in the online study information system. The peers determine that the types of assessment proposed reflect the intended learning outcomes covered by each module and allow for continuous feedback on students’ study progress.

By law, students are entitled to re-take an exam up to six times. The repetition applies only to the final exams at the end of a class. Since the actual average number of re-takes is rather low (1.5), the peers do not see any negative impact resulting from this regulation (e.g. pro-longing of study time). They take note though that the university intends to pass a new regulation which will reduce the number of retakes. A flexible exam schedule allows students to take advantage of three possible examination dates which are offered for every course within an academic year; two of the dates are offered within the same examination period. If a student fails to pass an exam, he can still attend selected classes from the next year, however, has to eventually finish the classes from the previous year. There is no standardized access granted to past exams. The peers deem the number and distribution of examinations to be adequate. The preparation time awarded for each exam period is sufficient and the timescale for grading exams does not interfere with individual academic progression as the student representatives confirm.

All degree programs complete with a final thesis which contains of a written assignment and its defence. The only exception is the [bachelor program Water Science & Environmental Engineering](#) which concludes with a group project that has been implemented recently. The peers acknowledge that the project work aims to promote important intellectual and social skills and intends to prepare students for a work world in which teamwork and collaboration are increasingly the norm. However, they question whether the fact that there is no written academic piece of work

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to conclude the program might have a negative impact on the value of the degree in international comparison. The absence of a faculty-wide concept for the assessment of final theses has been given cause for criticism as discussed under 2.3. In general, all final theses must be supervised by a university teacher with an adequate academic title that participates in the UL FGG educational process. Assistants, teachers from any other UL members or foreign universities cooperating with the UL based on a contract, or experts from practice may be appointed as co-supervisors. External assignments e.g. with a public research institute or a business organization are generally possible but have to be agreed upon by the supervisor.

#### **Strengths (+) and Weaknesses (-)**

- Bachelor program Water Science & Environmental Engineering does not conclude with a final thesis

## **4. Resources**

### **Evaluation Criterion 4.1: Teaching Staff Involved**

#### **Analysis and findings of the peers**

The peers take note of the very detailed analysis of the staff capacities provided by the university: According to the self-assessment report, UL FGG currently employs 17 Full Professors, 18 Associate Professors, 25 Assistant Professors, 7 Senior Lecturers, 18 Assistants with a PhD, 6 Assistants with an MSc, and 5 Assistants-PhD students. The total number of teaching staff is 96; about 20% of the faculty is female. On average, the teaching staff-student ratio is 10:1, the full professor-student ratio is 17:1. The peers evaluate the teaching staff deployed by UL FGG as generally well suited to implement the program and intended learning outcomes from both a qualitative as well as quantitative point of view successfully – this applies with limitations insofar as the provided list of publications seem to be incomplete and should be updated to allow for a comprehensive and final assessment. The student representatives facilitate the peer’s general impression; they express a high level of satisfaction with the faculty with regard to teaching quality as well as support and advice for students.

The peers question whether the seemingly long and bureaucratic procedure to gain the permission to teach is an obstacle when hiring new local faculty: According to Slovenian legislation, all teaching staff has to obtain a so called habilitation, to be understood as an entry condition that affirms sufficient qualification for teaching. Teachers involved in academic study programs must obtain the title of Full professor (valid permanently), Associate Professor or Assistant Professor (both valid for five years) while teaching assistants have to obtain at least the title Assistant (valid for three years). The habilitation criteria are quantitative and qualitative; they include research performance (publications, patents, projects, international collaboration), teaching (mentorship of students, textbooks) and professional activities (expert projects). Each application is first reviewed

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by the Personnel Commission, who assures that the application meets the criteria set by the UL FGG and the university, and then passed on to the appointed committees. The Student Council is also involved in the decision-making process. The peers acknowledge, on the other hand, that the procedure to grant the habilitation status to external and international guest lecturers has been sped up, allowing the university to attract more visiting professors to teach at UL FGG.

UL FGG has implemented a variety of training and workshop programs to enhance the professional and personal development of its faculty. Teaching staff are encouraged (also by the habilitation criteria) to develop and enhance their teaching and technical skills, didactical techniques, research collaborations and international exchanges. Leaves of absence are granted for these activities by the responsible supervisor and the Senate. Every seventh year a teacher can apply for a one-year sabbatical dedicated to personal improvement. The teaching staff representatives confirm that the faculty development programs are highly frequented. In fact, they would appreciate an even higher number of courses and trainings as the current offer is not sufficient to accommodate every person interested. The peers support this request. They suggest further to implement an incentive system for additional research activities as the basis for good teaching and teacher's professional development.

#### **Strengths (+) and Weaknesses (-)**

- + Procedure to grant the habilitation status to external and international guest lecturers has been sped up
- Procedure to grant habilitation status to local staff seems bureaucratic and long
- Number of courses and trainings offered for professional and personal development is not sufficient for the number of people interested
- Absence of sustainable incentive system for additional research activities

#### **Evaluation Criterion 4.2: Institutional environment, financial and physical resources**

##### **Analysis and findings of the peers**

The peers infer from the conversation with the representatives of the rector's office and additional information provided in the self-assurance report that the financing of all UL FGG programs under review seems currently ensured. A transparent breakdown of the disposable expenditure available for investment and other cost would be beneficial to confirm this statement ultimately. In general, UL FGG receives fixed state funding which remains independent from the number of students enrolled. Additional funding is acquired through European Union and other international projects, national research programs and expert services. The increasing turnover resulting from international projects compensates the decreasing funding available from national research programs and corresponds to the universities overall ambition for an increased internationalization.

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The tour of the facilities indicates that the common student spaces facilitate a productive learning environment i.e. the classrooms are sufficient for their use and current attendance, the available work places provide enough space for studying, all necessary software is available and the well-equipped library offers access to relevant technical literature incl. journals. The peers especially appreciate the joined teacher/student initiative that aims to redo the first floor of the faculty building with the purpose of increasing the number of quieter work spaces. They further consider the labs to be sufficiently equipped with instrumentation and experimental setup to support the curricula of the study programs. This applies in particular for the study programs within Cluster B – Geodesy.

The implementation of the study programs does not require any external co-operations. The universities does, however, maintain formal relationships with the five largest research institutes in Slovenia with the purpose of common research projects, supervision of final theses or the dispatch of part-time faculty. The university also undertakes a variety of university-industry research projects. It holds a variety of memberships in international associations and cooperation agreements with universities abroad.

The university's organizational and decision-making structure is considered to be generally effective for the implementation of the study programs, yet seems at times strongly constrained by governmental regulations that results, inter alia, in a high level of bureaucracy (see foregoing chapters).

#### **Strengths (+) and Weaknesses (-)**

- + Good common infrastructure (classrooms, library, work space, etc.)
- + Well equipped laboratories for the programs run by the Department of Geodetic Engineering

## **5. Documentation and Transparency**

### **Evaluation Criterion 5.1: Relevant regulations**

#### **Analysis and findings of the peers**

The peers take note that all relevant regulations on admission, graduation and study process are in place, easily accessible and published in both Slovenian and English on the UL FGG website.

#### **Strengths (+) and Weaknesses (-)**

No specific strengths and weaknesses derive from this chapter.

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**Evaluation Criterion 5.2: Diploma Supplement and qualification certificate****Analysis and findings of the peers**

The peers take note that the so called “leaving certificate” (Diploma and Diploma Supplement) awarded by UL FGG for each degree program provides a general description of the nature, level, context, content and status of the studies completed by its holder. They advise to further include the specific learning outcomes for each program to enable outsiders to identify competencies of the diploma supplement holder. In order to give assessment on how a student performed relative to a given reference group, the peers also recommend including a grading table in line with the ECTS Users’ Guide. The Diploma Supplements are issued in English.

**Strengths (+) and Weaknesses (-)**

- Diploma Supplements do not include specific learning outcomes and a relative grade

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## D Appendix

### Documents provided by UL FGG

Self-assessment report for the purpose of ASIIN program evaluation, 20 January 2015.

Appendices:

#### For Cluster A – Civil Engineering and Environmental Engineering

- Appendix A: Syllabi of Construction Management
- Appendix B: Syllabi of Civil Engineering BA
- Appendix C: Syllabi of Civil Engineering MA
- Appendix D: Syllabi of Water Science and Environmental Engineering BA
- Appendix E: Syllabi of Water Science and Environmental Engineering MA
- Appendix F: Syllabi of Buildings MA
- Appendix G: Personnel Handbook
- Appendix H: Diploma Supplements
- Appendix H(a): Information on the Higher Education System in the Republic of Slovenia

#### For Cluster A – Civil Engineering and Environmental Engineering

- Appendix A: Syllabi of Technical Real Estate Management
- Appendix B: Syllabi of Geodesy and Geoinformation BA
- Appendix C: Syllabi of Geodesy and Geoinformation MA
- Appendix D: Syllabi of Spatial Planning
- Appendix E: Personnel Handbook
- Appendix F: Diploma Supplements
- Appendix F(a): Information on the Higher Education System in the Republic of Slovenia

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## E Comment by the Higher Education Institution (29.05.2015)

The institution provides a detailed statement as well as the following additional documents:

- Updated Course Syllabi for Ma Buildings, Ma Civil Engineering, Ba Civil Engineering, Ba Construction Management, Ma Geodesy and Geoinformation, Ba Geodesy and Geoinformation, Ma Spatial Planning, Ba Water Management & Environmental Engineering, Ma Water Management & Environmental Engineering

### **“1.2: Learning outcomes of the programme (p. 11-12)**

***ASIIN report:** Computer-related topics are not emphasized sufficiently in learning outcomes of Cluster B – Geodesy programs*

**Response by UL FGG:** The topics of computer science are included in many professional courses, where students learn about algorithms, procedures and software used for the implementation of individual expert tasks. Unfortunately, this is frequently not presented in the learning outcomes, which will be corrected and regulated.

***ASIIN report:** Learning outcomes are not explicitly stated in an official document (While the peers deem the intended learning outcomes for each program generally as comprehensible, they point out that the learning outcomes are not expressed specific enough to give information on the individual profile of each program and consequently do not allow for a clear distinction between the various degree programs. This especially applies to the first cycle professional and academic programs: Both programs pursue different objectives and also require different entry admission.)*

**Response by UL FGG:** Learning outcomes for all programmes will be prepared in more detail, although it is impossible to avoid some level of resemblance between academic and higher education professional studies, as the graduates from both studies find job in the same area. Also, they acquire almost the same competences and are both offered the possibility to continue their studies. Two studies in the same area exist due to the provisions from the current Slovenian legislation that does not allow graduates from secondary technical schools to enrol to academic programmes, but only to higher education professional programmes. Nevertheless, a change in legislation is currently being planned, which should enforce clearer distinctions between academic and higher education professional studies.

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**ASIIN report:** *Learning outcomes are not defined specific enough to allow for a comprehensible distinction between the programs and level of qualification.*

**Response by UL FGG:** See previous answer.

### **1.3: Learning outcomes of the modules/module objectives (p. 12-13)**

**ASIIN report:** *While the peers evaluating the programs in Cluster A – Civil Engineering and Environmental Engineering in principle appreciate the very detailed and accessible syllabi for all programs, they raise concern over the potential administrative effort required to keep the documents up to date. They question whether it would be possible to condense the provided information without a loss of quality and encourage reviewing the current descriptions particularly regarding their lengths.*

**Response by UL FGG:** The minimum scope of contents is defined by the instructions of the Slovenian Quality Assurance Agency for Higher Education (NAKVIS), as this description is the basis for the recognition of qualifications and should not be too sparse. It is true, though, that the descriptions in our documents varied significantly. In the last few months this has been changed significantly, the lengths have been unified to a great extent, which can be seen from the renovated course syllabi attached to this document.

**ASIIN report:** Geodesy and Geoinformation: *the peers note that some descriptions mismatch the course title in the curricula provided in the self-assessment report with the course title in the course descriptions. The mismatch potentially results from the transition from diploma studies to the bachelor and master programs; in any case, hinders an effective use of the course descriptions and consequently shows need for review.*

**Response by UL FGG:** Mismatch of the study programmes and course syllabi can be the consequence of the fact that the study programmes were prepared by a large number of people. We have reviewed them, recognised some errors and corrected them, and are sending the renovated course syllabi.

**ASIIN report:** *Additionally, it is necessary to review the English technical terminology used within the descriptions.*

**Response by UL FGG:** We have recognised and corrected some errors and are sending the new course syllabi. When using the English terminology, the problem may be that the contents are translated from Slovenian into English as well as from German to the English language. Please bear in mind that some teachers are closer to the Anglo-Saxon terminol-

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ogy, while others feel closer to the German terminology. There may further be some influences from the Eastern or South-Eastern European territory. The English term “Geodesy” corresponds to Slovenian term “Higher Geodesy”, and English term “Surveying” corresponds to Slovenian term “Geodesy”. This is the main reason why terms “Geodesy” and “Surveying” and related phrases are sometimes mismatched.

#### **1.4: Needs of stakeholders and practical relevance (p. 14-15)**

***ASIIN report:** Time awarded to practical training is too short to gain sufficient skills and in-depth insights into the aspired work environment.*

**Response by UL FGG:** The time awarded to practical training in individual study programmes may seem too short, but even the present amount of time makes it very difficult to find adequate positions for the students due to the current economic situation in Slovenia, especially since the public administration has not been accepting students for practical work for several years. Further on, Slovenian legislation requires for regulated professions that after the studies, despite finished diploma, graduates are awarded authorisation for independent performance of professional tasks only after successfully passed expert exam at the Slovenian Chamber of Engineers (only after three years of work experiences). Additional problem for the geodetic/surveying study programmes is the structure of Slovenian geodetic/surveying companies, as they mostly employ 3 or less people. They are also very specialised and in small work environments the employees are generally under a lot of strain and are therefore mostly not interested in student supervision. However, we must admit that the time awarded to practical training in higher education professional studies may be too low (6 or 8 ECTS – 3 to 4 hours per week). This will be corrected with the first change of the programmes.

#### **1.6: Curriculum/Content (16-17)**

***ASIIN report:** Redundancy of course content in Cluster B – Geodesy programs due to lack of coordination*

**Response by UL FGG:** We are aware of the problem of overlapping contents, which is why it is also one of the most important topics of the Pedagogical Days that we have introduced recently. Teachers of related contents are encouraged to get together and harmonise the contents. Further on, any overlapping is checked through students. On the other hand, some contents are so important for our profession that it is necessary and beneficial for the students to hear them several times in connection to different areas of the profession.

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## 2.1: Structure and modularity (p. 17-18)

**ASIIN report:** *Unpredictable cancellation of courses in Civil Engineering and Environmental Engineering programs (occasionally courses are cancelled due to low enrolment (< 10) on very short notice.)*

**Response by UL FGG:** Electives are carefully planned well in advance, i.e. in April of current academic year for the next academic year starting on 1 October – from a wide selection of available courses the implementation is foreseen for the courses that are expected to attract the most interest by the students, by considering also the students' wishes (survey). It may happen, however, that after the actual enrolment to a new academic year in the beginning of October some of the originally offered modules / courses are selected by lower than required number of students (according to the University policy this number is 10). In such cases, due to financial reasons, such module or course must be cancelled, since, according to the UL regulations, for such implementation the payment cannot be provided. (A few years ago we still paid for such studies with 5 to 9 students per course, but the present financial situation does not allow us to do this anymore.) In such events students are promptly informed and assisted in the selection of substitute courses. On average, there are less than 5 courses per year cancelled in the beginning of October. However, if the number of students enrolling to our studies increases, this will most probably not happen anymore.

**ASIIN report:** *Technical composition of courses in both Geodesy and Geoinformation programs (It is advised, however, to revise the technical compositions of the courses in both Geodesy and Geoinformation programs to ensure that all course elements align with the intended learning outcomes of the courses and the programs as such respectively.)*

**Response by UL FGG:** In our opinion the intended outcomes and foreseen competences of the graduates from the study programmes Geodesy and Geoinformation are achieved. The study of geodesy has been offered by our faculty for more than 60 years and the evaluated study programmes lean on some (older) study programmes offered in the past. Further on, these study programmes were renovated after 7 years of implementation of the first study programmes according to the Bologna reform. All chairs, teachers and students at the UL FGG participated at the renovation of the study programmes. Practically all comments of these stakeholders were also considered. We believe that the study programmes under evaluation are adequate as far as contents as well as the reasonableness are concerned. We believe that they include contents that allow students to obtain the necessary knowledge and competences of the profession as well as specific knowledge of

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our environment. Nevertheless, we would appreciate any specific comments, specifying what exactly would need to be corrected or prepared in a better way.

**ASIIN report:** *Overlapping course content due to lack of coordination (The peers also see demand for better coordination within but also between the two programs to prevent overlapping course contents. This also applies to the Technical Real Estate Management program.)*

**Response by UL FGG:** We believe that any overlapping contents from the old study programmes have been significantly reduced with the renovation of our study programmes. This is achieved by adequate delivering of the contents as well as their vertical connection, and they are as a rule delivered by the same teachers at both study levels. There are probably also some raw contents, but we believe they are properly addressed. During the oral presentation of the evaluation findings one of the peers pointed out that the theme of coordinate systems is presented and taught within several courses. In our opinion the comment is valid, but in geodesy there exist numerous coordinate systems: from celestial, global, astronomical, terrestrial, geodetic, classical, horizontal, vertical, height, national, local, topocentric, model,... which are one-, two-, three or more dimensional coordinate systems, etc. Today, space as such is treated through coordinates that are related to coordinate systems. One of important competences of the graduates from our geodetic programmes is also their ability to work with spatial data, from their acquisition, valuation of quality, their combining and practical use. We would appreciate more concrete examples of contents overlapping.

**ASIIN report:** *Lack of mobility window as well as reliable regulations for the recognition of transfer credits and grades*

**Response by UL FGG:**

Foreign exchange students are normally included in the second cycle programmes (MA) at the UL FGG. In the sense of reciprocity, we also encourage exchange mostly at the MA level. For this reason the first cycle studies do not foresee any special mobility windows. At the second cycle students may progress from the 1st to the 2nd year with only 45 ECTS, which allows them to do part of their obligations abroad, in any semester, and thus to adapt their studies to the curricula offered abroad. Considering the recognition of credits, we have recently lowered the condition for the recognition of course completed abroad from 75% to 50% of matching contents.

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## 2.2: Workload and credit points (p. 18-19)

**ASIIN report:** *Absence of faculty-wide standardized procedure regulating the assessment of the final theses in the degree programs*

**Response by UL FGG:** We already have orally agreed basic criteria for the assessment of the final theses. This is currently being upgraded with more specific written assessment sheet.

**ASIIN report:** *Relatively low-credited final theses in most bachelor programs as well as in the Civil Engineering master program*

**Response by UL FGG:** Over 90 % of students at the 1st cycle academic studies continue their studies at the MA level. For this reason, final thesis at the BA level represents only an intermediate step. Also, beside credit points the final thesis in the last semester of the 1st cycle studies includes several courses (seminars, projects) that are directly related to the elaboration of the final thesis and normally consist of 20 to 30 ECTS. In some programmes it has been agreed that at the 1st cycle students can do a group project work including written thesis and its presentation, while individual (master) thesis follows after the second (MA) cycle.

**ASIIN report:** *Absence of institutionalized workload assessment (It remains unclear what measures are employed to evaluate the proposed workload allocation for the individual classes efficiently.)*

**Response by UL FGG:** In this academic year the UL prepared a new student survey that was tested at the UL FGG as the second member of the UL. This survey provides better evaluation of student workload than the one used so far.

**ASIIN report:** *Students surveys for degree programs within Cluster A – Civil Engineering and Environmental Engineering are too broad to allow for instructive feedback*

**Response by UL FGG:** New survey also offers better contents and timing (it is conducted several times per year, in the exam period, and not only before the enrolment to the next year), which allows us to better respond to the comments by students.

## 2.3: Educational Methods (p. 20-21)

**ASIIN report:** *Relatively inflexible curricula of most degree programs due to high number of required classes (The peers therefore strongly support the university's intention, to offer*

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*more elective courses at least for the 2nd cycle programs to provide an opportunity to create a more individualized program)*

**Response by UL FGG:** The main reason for less individual and adaptable curricula at only some study programmes (such as Buildings) is the problem of small number of students that does not allow courses to be implemented for only a few students (due to financial limitations). In many study programmes selection is offered in the form of modules and orientations, e.g. mainly in the master study Civil Engineering.

### **3: Examinations: concept and organisation (p. 22-23)**

*ASIIN report: Bachelor program Water Science & Environmental Engineering does not conclude with a final thesis*

**Response by UL FGG:** At the 1st cycle, i.e. BA level, students do group project work including final written report and its presentation. Individual (master) thesis follows after the 2nd (MA) level. The majority of students continue their studies at the MA level. Thus, BA level as intermediate step without individual final thesis is actually adapted to group work, which is most common for engineering practice.

### **4: Resources (p. 23-24)**

*ASIIN report: Procedure to grant habilitation status to local staff seems bureaucratic and long*

**Response by UL FGG:** The procedure for the acquisition of habilitation and the criteria for the election to titles are prescribed by the University. The criteria for elections and the instructions for the implementation of these regulations prescribe the deadlines for all the parties involved in the habilitation procedure. Thus, the election procedure normally lasts up to 6 months, quite often also less. In our opinion, these deadlines are reasonable, especially in case of the first election to title, where both the university as well as the faculty participate in the procedure. The procedure for the acquisition of habilitation may be slightly too bureaucratic, but, on the other hand, this guarantees the same procedure and equal treatment of all candidates applying for titles at the University of Ljubljana. Regarding the duration of these procedures, we have not experienced any major problems, as each person involved in the procedure knows the rules and prepares well in advance. Further on, the UL also offers advance habilitation (habilitation is not directly related to the

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position or employment), which means that there are almost always several teachers with habilitations available, but employed as assistants or even working in institutes or in industry, who may immediately take an empty position of a teacher announced through public tenders. The UL also supports "inquiry tenders" once per year, whereby it is checked if there are at the labour market individuals who wish to work at the university. This allows much easier successful completion of the employment procedure when actual tenders are published. It should be emphasised that all individuals applying are treated equally, even if they do not yet have habilitation (it may be acquired in the time of open tender).

***ASIIN report:*** *No. of courses and trainings offered for professional and personal development is not sufficient for the number of people interested*

**Response by UL FGG:** The offer of available trainings for the employees has increased significantly in the last few years since the UL has been implementing the project of raising the quality at the UL. Trainings are intended to all employees and are for this reason quickly filled. Due to the large interest we have started at the UL FGG to offer our own seminars to our employees. The first was delivered in May 2015; further are already planned. We also employ a university teacher from the area of pedagogics who will organise educational trainings for our employees.

***ASIIN report:*** *Absence of sustainable incentive system for additional research activities*

**Response by UL FGG:** Incentives are offered within the legal framework. Teachers who are active in research have additional 20% employment to full-time employment. They are also encouraged to research due to increasingly strict habilitation demands. The amount of the Individual Research Work bonus depends on their research results. Further on, they are offered support for their sabbaticals. Successful inclusion of our researchers in professional and research projects is also evident in the large share of income from this area in the UL FGG budget (45 %).

## **5.2: Diploma Supplement and qualification certificate (p.26)**

***ASIIN report:*** *Diploma Supplements do not include specific learning outcomes and a relative grade (They advise to further include the specific learning outcomes for each program to enable outsiders to identify competencies of the diploma supplement holder. In order to*

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*give assessment on how a student performed relative to a given reference group, the peers also recommend including a grading table in line with the ECTS Users' Guide.)*

**Response by UL FGG:** The contents of the diploma supplement are prescribed the UL. Based on your response we initiated some changes and proposed to include in the diploma supplement learning outcomes and average grades compared to the grade of the generation. Thus, changes of the diploma supplement are already in procedure at the UL.”

## **F Accreditation procedure based on the evaluation procedures (13.07.2015)**

The University of Ljubljana applies for program accreditation, complementing the program evaluation that took place in February 2015. The university applied for the ASIIN seal and the Eur-Ace® label for all degree programs evaluated.

The accreditation procedure references the results of both the both the institutional and program evaluation conducted at the Faculty of Civil and Geodetic Engineering.

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## **G Comments by the Technical Committee 03 – Civil Engineering, Surveying and Architecture (14.09.2014)**

*Assessment and analysis for the award of the ASIIN seal:*

### **1.2 Learning outcomes of the programs**

The committee acknowledges that the university plans to revise the learning outcomes for all programs under review with the purpose of providing a more unique profile for each program that will also allow for a clearer distinction between the programs and confirms the contemplated requirement. The committee further re-emphasize that the learning outcomes defined for the study programs within Cluster B – Geodesy need to have a stronger emphasis on computer-related competences.

### **1.3 Learning outcomes for the modules/module objectives**

The Technical Committee takes note of the revised course syllabi for all degree programs. They appreciate the condensed course syllabi for the Cluster A – Civil Engineering and Environmental Engineering programs. Additionally, they assert that both the English technical terminology and the mismatch between the course title and the curricula provided for the Cluster B – Geodesy programs have been corrected.

### **1.4 Need of stakeholders and practical relevance**

Regarding the duration of the practical training, the Technical Committee reaffirms the peer's proposal to review the current structure of the practical training for all degree programs to allow students more time to acquire sufficient experience and skills in a professional job setting. Even though the Committee members understand that the current economic situation in Slovenia challenges students to find an adequate placement, they consider two to four weeks at a company not sufficient to gain a meaningful practical experience outside university.

The initiative of the so called Pedagogical Days that bring together teachers of related disciplines and subjects with the purpose of harmonising course contents of and within most Cluster B - Geodesy programs is highly appreciated by the members of the Technical Committee. The Committee confirms that redundancy of course content has to be avoided.

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## **2.1 Structure and modularity**

The members of the Technical Committee take note that students are informed promptly in case of class cancellation and are assisted with the selection of substitute classes.

The Technical Committee acknowledges that the university has taken some actions to encourage student mobility. It reaffirms the contemplated recommendation.

## **2.2 Workload and credit points**

The Technical Committee generally accepts the different weightage for the final thesis as each degree program also requires a different number of courses to be taken in the final semester. They reaffirm, however, that the estimated student work load and credits granted for the final thesis need to correspond to the actual workload.

The members of the committee stress the necessity to employ methods and analyze the resulting data to allow for a continuous improvement of the programs; this especially applies to a reliable and meaningful work load assessment.

## **2.3 Educational Methods**

The members of the Technical Committee support the peer's recommendation to adapt the curricula for the 2<sup>nd</sup> cycle programs to allow for individual orientation, specialization and also to benefit student mobility.

## **3 Examinations: concept and organizations**

The Technical Committee generally accepts that the Bachelor program Water Science & Environmental Engineering concludes with a group project work that includes a final written report and its presentation. It needs to be assured, however, that the final project demonstrates that students are able to work on a set task independently and at the level aimed for. This could be proved by submission of the actual assignment.

## **4 Ressources**

The Technical Committee appreciates the further explanations provided regarding the habilitation process and conclude that the process does not seem to be an obstacle when hiring new faculty.

The members of the Technical Committee take note that the university encourages research and rewards good results.

They welcome further that the University states to have increased the number of courses and trainings offered for staff's professional and personal development. It should be reassessed in the reaccreditation process whether the offer is sufficient to meet the demands.

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## 5.2 Diploma Supplement and qualification certificate

The Technical Committee takes note that UL FGG will revise the diploma supplements to provide information on student's qualification profile. They restate that in addition to the final mark, statistical data as set forth in the ECTS User's Guide has to be included to allow readers to categorize the individual result.

### *Assessment and analysis for the award of the Euro-ACE® Label:*

The Technical Committee concludes that the intended learning outcomes of the degree programmes predominantly comply with the Subject-Specific Criteria of the Technical Committee 03 – Civil Engineering and Architecture.

The peers summarize their analysis and final assessment for the award of the seals as follows:

<b>Degree Programme</b>	<b>Accreditation Council seal (ASIIN)</b>	<b>Subject-specific label</b>	<b>Maximum duration of accreditation</b>
Ba Civil Engineering	With requirements for one year	Euro-ACE®	30.09.2021
Ma Civil Engineering	With requirements for one year	Euro-ACE®	30.09.2021
Ba Construction Management	With requirements for one year	Euro-ACE®	30.09.2021
Ma Buildings	With requirements for one year	Euro-ACE®	30.09.2021
Ba Water Management and Environmental Engineering	With requirements for one year	Euro-ACE®	30.09.2021
Ma Water Management and Environmental Engineering	With requirements for one year	Euro-ACE®	30.09.2021
Ba Geodesy and Geoinformation	With requirements for one year	Euro-ACE®	30.09.2021
Ba Technical Real Estate Management	With requirements for one year	Euro-ACE®	30.09.2021

Degree Programme	Accreditation Council seal (ASIIN)	Subject-specific label	Maximum duration of accreditation
Ma Spatial Planning	With requirements for one year	Euro-ACE®	30.09.2021
Ma Geodesy and Geoinformation	With requirements for one year	Euro-ACE®	30.09.2021

## Requirements

### For all degree programs

- A 1. (ASIIN 1.2) The learning outcomes should describe the academic, subject-specific and professional qualifications gained in the degree programs. They should allow for a clear distinction between the programs and should further be reflected in a legally binding document.
- A 2. (ASIIN 2.2) The quality assurance mechanisms should ensure a continuous workload assessment.
- A 3. (ASIIN 2.2) The credits granted for the final thesis should correspond to the actual workload.
- A 4. (ASIIN 5.2) The Diploma Supplement should contain detailed information about the educational objectives, intended learning outcomes as well as individual performance of the student.

### For all programs in Cluster A – Ba Civil Engineering, Ma Civil Engineering, Ba Construction Management, Ma Buildings, Ba Water Management and Environmental Engineering, Ma Water Management and Environmental Engineering

- A 5. (ASIIN 2.2) The quality assurance mechanism should be designed to ensure that information relevant for a continuous improvement of all programs are collected and analysed.

### For all programs in Cluster B - Ba Technical Real Estate Management, Ba Geodesy and Geoinformation, Ma Geodesy and Geoinformation, Ma Spatial Planning

- A 6. (ASIIN 1.2) The learning outcomes need to reflect the computer-related competences as taught in the curriculum.

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**For Ba Technical Real Estate Management, Ba Geodesy and Geoinformation, Ma Geodesy and Geoinformation**

A 7. (ASIIN 1.6) The redundancy of course content not employed for didactical reasons has to be prevented.

**For Ba Water Science & Environmental Engineering**

A 8. (ASIIN 3) The final group work should ensure that students are able to work on a set task independently and at the level aimed for.

**Recommendations**

**For all degree programs**

E 1. (ASIIN 1.4) It is recommended to prolong the practical training outside university.

E 2. (ASIIN 2.1) It is recommended to improve student mobility (e.g. to study abroad or intern) without extending graduation time.

E 3. (ASIIN 4.2) It is recommended to reassess continuously whether the development opportunities offered to the faculty are sufficient.

**For Ma Building, Ma Environmental Engineering, Ma Spatial Planning and Ma Geodesy and Geoinformation**

E 4. (ASIIN 2.3) It is recommended to adapt the curricula for the 2<sup>nd</sup> cycle programs to allow for individual specialization, orientation as well as to benefit student mobility.

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## H Decision of the Accreditation Commission (25.09.2015)

*Assessment and analysis for the award of the subject-specific ASIIN seal:*

The Accreditation Commission for Degree Programmes discusses the procedure. It rephrases the requirements 1, 5, 6, 7, 8 as well as the recommendations 1, 2, 3, 4 for clarification. Despite these technical changes, the Accreditation Commission fully approves of the assessment of the peers and Technical Committee 03.

*Assessment and analysis for the award of the EUR-ACE® Label:*

The Accreditation Commission concludes that the intended learning outcomes of the degree programmes predominantly comply with the Subject-Specific Criteria of the Technical Committee 03 – Civil Engineering and Architecture.

The Accreditation Commission for Degree Programmes decides to award the following seals:

<b>Degree Programme</b>	<b>Accreditation Council seal (ASIIN)</b>	<b>Subject-specific label</b>	<b>Maximum duration of accreditation</b>
Ba Civil Engineering	With requirements for one year	Euro-ACE®	30.09.2021
Ma Civil Engineering	With requirements for one year	Euro-ACE®	30.09.2021
Ba Construction Management	With requirements for one year	Euro-ACE®	30.09.2021
Ma Buildings	With requirements for one year	Euro-ACE®	30.09.2021
Ba Water Management and Environmental Engineering	With requirements for one year	Euro-ACE®	30.09.2021
Ma Water Management and Environmental Engineering	With requirements for one year	Euro-ACE®	30.09.2021

Degree Programme	Accreditation Council seal (ASIIN)	Subject-specific label	Maximum duration of accreditation
Ba Geodesy and Geoinformation	With requirements for one year	Euro-ACE®	30.09.2021
Ba Technical Real Estate Management	With requirements for one year	Euro-ACE®	30.09.2021
Ma Spatial Planning	With requirements for one year	Euro-ACE®	30.09.2021
Ma Geodesy and Geoinformation	With requirements for one year	Euro-ACE®	30.09.2021

## Requirements

### For all degree programmes

- A 1. (ASIIN 1.2) The learning outcomes should describe the academic, subject-specific and professional qualifications to be acquired in the degree programmes. They should allow for a clear distinction between the programmes and should further be reflected in a legally binding document.
- A 2. (ASIIN 2.2) The quality assurance mechanisms should ensure a continuous workload assessment.
- A 3. (ASIIN 2.2) The credits granted for the final thesis should correspond to the actual workload.
- A 4. (ASIIN 5.2) The Diploma Supplement should contain detailed information about the educational objectives, intended learning outcomes as well as individual performance of the student.

### For all programmes in Cluster A – Ba Civil Engineering, Ma Civil Engineering, Ba Construction Management, Ma Buildings, Ba Water Management and Environmental Engineering, Ma Water Management and Environmental Engineering

- A 5. (ASIIN 2.2) The quality assurance mechanism should be designed to ensure that information relevant for a continuous improvement of *all* programmes is collected and analysed.

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**For all programmes in Cluster B - Ba Technical Real Estate Management, Ba Geodesy and Geoinformation, Ma Geodesy and Geoinformation, Ma Spatial Planning**

A 6. (ASIIN 1.2) The learning outcomes need to reflect the computer-related competences as intended by and taught in the curriculum.

**For Ba Technical Real Estate Management, Ba Geodesy and Geoinformation, Ma Geodesy and Geoinformation**

A 7. (ASIIN 1.6) The redundancy of course content has to be prevented as far as it does not serve didactical purposes.

**For Ba Water Science & Environmental Engineering**

A 8. (ASIIN 3) The requirements set for the final group work should ensure that students are able to work on a set task independently and at the level aimed for.

**Recommendations**

**For all degree programmes**

E 1. (ASIIN 1.4) It is recommended to prolong the practical training outside university.

E 2. (ASIIN 2.1) It is recommended to improve student mobility (e.g. to study abroad or intern) without extending the time needed for graduation.

E 3. (ASIIN 4.2) It is recommended to reassess continuously whether the development opportunities offered to the faculty staff are sufficient.

**For Ma Building, Ma Environmental Engineering, Ma Spatial Planning and Ma Geodesy and Geoinformation**

E 4. (ASIIN 2.3) It is recommended to adapt the curricula to allow for individual specialization and orientation as well as to benefit student mobility.