



Summary report on the accreditation of the Bachelor and Master programme “Electrical and Electronics Engineering” at International University of Sarajevo (IUS), Sarajevo, Bosnia and Herzegovina

Upon the request for accreditation of the International University of Sarajevo from 27th January 2016, AQ Austria conducted the accreditation procedure of the Bachelor and Master programme “Electrical and Electronics Engineering”. In accordance with the “Guideline for International Accreditation of Bachelor, Master and PhD Programmes” adopted by the Board of AQ Austria in July 2013, AQ Austria publishes the following summary report.

1 Accreditation decision

At its 36th meeting on 20th/21st September 2016 the Board of AQ Austria decided to grant accreditation to the Bachelor programme Electrical and Electronics Engineering and the Master programme Electrical and Electronics Engineering for a period of six years, subject to conditions.

The fulfilment of these conditions must be documented in writing within nine months (i.e. until 21st June 2017) and is subject to assessment by AQ Austria. In case of non-fulfilment, the accreditation will be withdrawn immediately.

2 Short information on the application for accreditation

Name of the programme	Electrical and Electronics Engineering
Academic degree awarded	Bachelor of Science in Electrical and Electronics Engineering (B.Sc)
Date of introduction	23 June, 2004/ Pursuant to the Article 14 of the Law on Higher Education (Official Gazettes of the Canton Sarajevo, issues 17/99, 14/00, 15/01, 13/02, 12/03 and 15/03)
Regular study period	8 semester/ 4 years
Number of ECTS credits	240
Full time/Part time	Fulltime
Tuition fees	As per Semester in EUR for academic year 2016/17: Foreign students: First cycle: EUR 2,750/semester Second Cycle: EUR 1,250/ semester Third cycle: EUR 3,000/ semester BiH citizen: First Cycle: EUR 1,925/semester Second Cycle: EUR 1,250/ semester Third cycle: EUR 3,000/ semester
Name of the programme	Electrical and Electronics Engineering
Academic degree awarded	Master of Science in Electrical and Electronics Engineering (M.Sc)
Date of introduction	23 June, 2004/ Pursuant to the Article 14 of the Law on Higher Education (Official Gazettes of the Canton Sarajevo, issues 17/99, 14/00, 15/01, 13/02, 12/03 and 15/03)
Regular study period	2 semester/ 1 year
Number of ECTS credits	60
Full time/Part time	Fulltime
Tuition fees	As per Semester in EUR for academic year 2016/17: Foreign students: First cycle: EUR 2,750/semester Second Cycle: EUR 1,250/ semester Third cycle: EUR 3,000/ semester BiH citizen: First Cycle: EUR 1,925/semester Second Cycle: EUR 1,250/ semester Third cycle: EUR 3,000/ semester

3 Short information on the accreditation procedure

International University of Sarajevo (IUS) submitted an application for accreditation of the study programmes in April 2016.

In circular resolutions on 15th April 2016 and 2nd June 2016, the Board of AQ Austria passed the proposal for experts for the review and assessment of the study programmes.

Members of the Expert panel

Name	Institution	Role
Simo Särkkä	Associate Professor & Academy Research Fellow, Aalto University; Technical advisor & Director, IndoorAtlas Ltd.	Head of the expert panel Expert from academia
Thomas Kienberger	Head of the Chair of Energy Network Technology at the University of Leoben. Head of the Bachelor- and Master-program "Industrial Energy-Technology"	Expert from academia
Inka Seger	Senior Manager Product Engineering at Intel Austria GmbH	Expert with professional practice
Daniel Funk	Student of Electrical Engineering at Graz University of Technology	Student Expert

A site visit at IUS took place in Sarajevo on 14th July 2016, which was attended by the expert panel and coordinators from AQ Austria.

The Board of AQ Austria took the accreditation decisions in its 36th meeting on 20th/21st September 2016. Both, the accreditation of the Bachelor programme and the master programme are subject to conditions and are valid until 20th September 2022.

4 Subject matter of the application

The International University of Sarajevo (IUS) has been established in 2003. The founder of IUS is the Foundation for Education Development Sarajevo (SEDEF – Sarajevo Education Development Foundation). IUS offers, as of the academic year 2015/16, 53 study programmes in total in all cycles organized within five faculties:

- Faculty of Business and Administration
- Faculty of Engineering and Natural Sciences
- Faculty of Arts and Sciences,
- Faculty of Law
- Faculty of Education preparing our students to life and market realities.



All study programmes are offered in English. IUS is open to students from all over the world; however the majority of students are from the Republic of Turkey. As of the academic year 2015/16 1931 students are enrolled. 1201 are foreign students and 730 from BiH. Out of the 1201 1053 are from the Republic of Turkey. According to its own vision and mission IUS considers itself as one of the largest educational projects in the Balkan region and being a hub between east and west. IUS is an associate member of European University Association (EUA), and a full member of International Association of Universities (IAU) and European Consortium of Political Research (ECPR).

The Bachelor and Master programmes in Electrical and Electronics Engineering (EEE) are seen as a hub between academia and the industry at the local and international perspective. The IUS aims to prepare the graduates of the BA and MA Electrical and Electronics Engineering programmes to be competent and competitive on the local and international job markets and contribute to the contemporary challenges in the local business environment. In its Bachelor and Master programmes the IUS prepares its graduates to be ready for working in industry as well as for academia.

Especially in the BA programme, IUS works with an interdisciplinary approach. Besides the focus on Electrical and Electronics Engineering they also facilitate knowledge from Computer Engineering, Industrial Engineering, Mechanical Engineering, Bioengineering, Economics, and Humanities. The four year-long BA and the one year long MA programmes are skill-oriented and aims at providing not only theoretical, but also practical knowledge of electrical engineering and internships.

The BA and MA programmes in EEE should also contribute in the development of the IUS towards being a prospective leader in education and research in the region. The strategy and the vision of the IUS development is directed mainly to become an internationally recognized institution of higher education and research center of excellence.

5 Summarizing results from the assessments of the expert panel

The overall assessments of the expert panel of all standards may be summarized as follows:

Standard 1: Study programme and programme management

(a) Statements

Bachelor Programme: Experts panel's findings on the BA programme state that the first year of the Bachelor programme aims at levelling the student's skills due to different prior knowledge and skills. Therefore generic subjects are given. They are separated into "faculty courses" and "university courses". Year 2 and 3 deliver basic education of electrical and electronics engineering aiming at a sound knowledge in mathematics, natural sciences, and engineering in order to explain the complex phenomena peculiar in electrical engineering technology, in electrical circuits, analogue and digital electronics, electromagnetism, signal processing, control theory, and power systems. Skills should be facilitated for solving a broad variety of engineering problems in electrical and electronics engineering using software and hardware tools, as well as laboratory equipment. Most of the subjects given are compulsory subjects. Year 4 of the Bachelor programme consist mostly of electives in a research-based

education. In the 4th year of the programme, also a Bachelor thesis has to be written under the supervision of the faculty's professors. Besides the generic courses of the first year of the Bachelor programme include some "elective faculty courses", all courses are credited with 6 ECTS-credits. Today in the courses of the BA programme, there is a strict distribution between theory and practical work on a ratio of 3-to-2. For teaching theoretical contents IUS-staff uses mostly Power Point type of slides and/or textbooks. For the practical work they use methods as exercises, laboratory demonstrations and/or homework.

Master Programme: For the Master programme the expert panel states that the university offers education with a clear research focus in a particular field of electrical and electronics engineering. Therefore, besides a compulsory course in advanced mathematics, the study programme offers a variety of elective courses in the fields of communication engineering, power systems, electronics and microelectronics, and automation engineering. Within the courses, there is a strict distribution between theory and practical work on a ratio of 3-to-2. For teaching theoretical contents IUS-staff uses mostly Power Point type of slides and/or textbooks. For the practical work they use methods as exercises, laboratory demonstrations and/or homework. In the 2nd semester a Master thesis (36 ECTS-credits), assigned to a particular field of electrical and electronics engineering has to be written, under the supervision of the faculty's professors.

(b) Assessments

Bachelor Programme: The panel has assessed the standard as "**partially met**" and suggests the following **conditions**:

1. Substitute the language courses "Spoken Turkish/Bosnian 1 and 2" with subjects aligned with the quality objectives of the framework of the European Higher Education Area. This can be done, for instance, by exchanging them with a 4-ECTS-credited programme elective course.
2. Adjust the distribution-ratio between theoretic-lessons and practical-lessons in all courses to level that fulfils the requirement of the specific course (instead of the constant 3-to-2-ratio).
3. Introduce fields of specialization (e.g. communication engineering, power systems, electronics and microelectronics, and automation engineering) in 4th year of the Bachelor programme. Each field of specialization shall comprise a variety of elective courses. The individual students shall, for instance together with their "student-advisor", choose for one field of specialization.
4. Issue an appropriate number of ECTS-credits (e.g. 6 ECTS-credits) for the internship.

Master Programme: The panel has assessed the standard as "**partially met**" ad suggests the following **conditions**:

1. All offered Master courses (electives and compulsories) must be regularly available on a yearly basis.
2. Adjust the distribution-ratio between theoretic-lessons and practical-lessons in all courses to level that fulfils the requirement of the specific course (a 3-to-2-ratio is not always useful).
3. Introduce fields of specialization (e.g. communication engineering, power systems, electronics and microelectronics, and automation engineering) for clustering the electives in the Master programme. Each field of specialization shall comprise a variety

of elective-courses. The individual students shall, for instance together with their "student-advisor", choose for one field of specialization.

The IUS should also consider fulfilling the recommendations of the expert panel:

Bachelor and Master Programme:

- Although research and teaching is coupled to an appropriate extent, this should be improved in the future by enhancing the research activities via more granted projects and higher extend of directly funded industrial projects.

Bachelor Programme:

- Although research and teaching is coupled to an appropriate extent, this should be improved in the future by enhancing the research activities via more granted projects and higher extend of directly funded industrial projects.
- The 1st year university-course "Freshman-English" should be renamed according to the applied teaching-standard ("Advanced English").
- Introduce quality assurance-measures ensuring formal scientific requirements (structure of the work, literature citations, correct use of abbreviations, footnotes) of scientific works (e.g. BA theses). This can be done, for instance, with appropriate templates.
- Organize the student-advisors in institutional level in order to cope with the increasing number of students.
- Developing a more standardized process of the selection, support, and assessment of internships can be beneficial when the number of BA-students arises.

Master Programme:

- Although research and teaching is coupled to an appropriate extent, this should be improved in the future by enhancing the research activities via more granted projects and higher extend of directly funded industrial projects.
- Introduce quality assurance-measures ensuring formal scientific requirements (structure of the work, literature citations, correct use of abbreviations, footnotes) of scientific works (e.g. MA theses). This can be done, for instance, with appropriate templates.
- Formulate conditions for students who want to change their field of specialization from the Bachelor programme to the Master programme.
- Clarify in the "Study Rules for the First and Second Study Cycle" that in the case when students with a 180 ECTS-credits Bachelor apply for IUS's 60 ECTS-credits Master in Electrical and Electronics Engineering, enrolment-conditions will be stated.

Standard 2: Staff

(a) Statements

Bachelor Programme: Overall the composition of staff is adequate for the BA programme and benefits from staff from other programmes' elective courses. However, in general, the international visits to and from the university are recommended to be increased and the human resources plan could be made more concrete.

Master Programme: Overall the composition of staff is adequate for the MA programme. However, in general, the international visits to and from the university are recommended to be increased also in the Master programme.

(b) Assessments

Bachelor Programme: The expert panel has assessed the standard as “met”.

Master Programme: The expert panel has assessed the standard as “met”.

IUS should also consider fulfilling the following recommendation:

Bachelor and Master Programme:

- Increase the international in/out mobility of staff.

Standard 3: Quality assurance

(a) Statements

Bachelor Programme: The expert panel finds that the quality assurance process is conducted very inclusively with regard to involvement of internal and external stakeholders. The academic and non-academic staff generally appeared to be very ambitious and striving for continuous improvement of the study programme. Even when taking into account that the study programme is relatively new, there are some gaps which should be closed as pointed out in the various recommendations. However, the minimum requirements are still met.

Master Programme: In addition to what the expert panel stated for the Bachelor programme, to ensure also the quality of the students for Master's programme, student applications for Master's from other universities should be evaluated by some formal procedure. As specialization at IUS already starts in the 4th year of the Bachelor, Bachelors from other universities might need to attend additional courses to be accepted for the Master programme. Regardless of these minor gaps, the minimum requirements for the programme are met.

(b) Assessments

Bachelor Programme: The panel has assessed the standard as “met”.

Master Programme: The panel has assessed the standard as “met”.

IUS should also consider fulfilling the following recommendations:

Bachelor and Master Programme:

- Ensure evolvement and effective enhancement of the university as well as of the faculties and study programmes, the QA office staff should be increased adequately. The QA office should compile a condensed plan from the actions and measures defined and agreed by the different bodies and committees. This plan should include completion dates for each task and the progress should be regularly reviewed as well as finally the effectivity.
- Referring to what was already stated and recommended in section 1.3, it would be important to put into practice the plans described above to officially publishing guidelines and templates with next academic year to improve the quality of Bachelor and Master theses.
- Set target for the expected survey participation rate, reflect why survey participation is low, and take actions to increase the student participation.

Standard 4: Funding and infrastructure

(a) Statements

Bachelor Programme: The expert panel observed that currently, as stated in the documentation, the programme is being financed 80% via student fees. The plan is to shift this to 70% fees and 30% research grants by increasing the research proportion. The facilities for the programme are adequate.

Master Programme: The funding for the MA programme is also well documented. The facilities are the same for BA and MA students.

(b) Assessments

Bachelor Programme: The expert panel has assessed the standard as **“met”**.

Master Programme: The expert panel has assessed the standard as **“met”**.

Standard 5: Research and development and appreciation of the arts

(a) Statements

Bachelor and Master Programmes: The expert panel finds the research and development plans well aligned with the institutional plans and the staff actively involved in research. Already in BA level the students get integrated to research projects. All the required conditions are met.

(b) Assessments

Bachelor Programme: The expert panel has assessed the standard as **“met”**.

Master Programme: The expert panel has assessed the standard as **“met”**.

Standard 6: National and international co-operations

(a) Statements

Bachelor Programme: The expert panel describes the socio-political and economical surroundings in Europe as not easy for the relatively young study programme. Until 2016 there has only been one Western European University, University of Jena, which has signed an agreement with IUS. The university is improving this by trying to establish more agreements, not only in Europe, but also in South East Asia. BA students are encouraged to take part in exchange programmes, even though IUS is currently sending only non-Turkish students to Turkey within the Mevlana program.

To enable junior staff and excellent students more travel abroad and into the region of the West Balkans, IUS should establish a separate unit for assistance on faculty or university level. However, the minimum requirements for the programme are met.

Master Programme: Due to the short 1-year Master programme and the economic situation of most MA students, the panel did not meet any students of the second cycle that went

abroad during their studies. Though this is a problem in practice, the program itself does not prevent any students from going abroad. The standards are therefore fulfilled.

(b) Assessments

Bachelor Programme: The expert panel has assessed the standard as “met”.

Master Programme: The expert panel has assessed the standard as “met”.

IUS should also consider fulfilling the following recommendations:

Bachelor and Master Programme:

- Provide more institutionalized and coordinated support for junior research personnel to establish lasting cooperation with European Universities.
- The IUS, the particular study programme, should strive for more systematized cooperation agreements with European universities, in order to underline being a hub between east and west.

6 Decision of the AQ Austria Board

The Board of AQ Austria based its decision on the self-documentation and supporting documents submitted by IUS, the review report of the expert panel, and the formal statement by IUS.

The Board of AQ Austria decided to grant accreditation to the study programme Electrical and Electronics Engineering (Bachelor of Science) for a period of six years, subject to four conditions:

1. Substitute the language courses “Spoken Turkish/Bosnian 1 and 2” with subjects aligned with the quality objectives of the framework of the European Higher Education Area. This can be done, for instance, by exchanging them with a 4-ECTS-credited programme elective course.
2. Adjust the distribution-ratio between theoretic-lessons and practical-lessons in all courses to level that fulfils the requirement of the specific course (instead of the constant 3-to-2-ratio).
3. Introduce fields of specialization (e.g. communication engineering, power systems, electronics and microelectronics, and automation engineering) in 4th year of the Bachelor programme. Each field of specialization shall comprise a variety of elective courses. The individual students shall, for instance together with their “student-advisor”, choose for one field of specialization.
4. Issue an appropriate number of ECTS-credits (e.g. 6 ECTS-credits) for the internship.

The Board of AQ Austria decided to grant accreditation to the study programme Electrical and Electronics Engineering (Master of Science) for a period of six years, subject to three conditions:

1. All offered Master courses (electives and compulsories) must be regularly available on a yearly basis.



2. Adjust the distribution-ratio between theoretic-lessons and practical-lessons in all courses to level that fulfils the requirement of the specific course (a 3-to-2-ratio is not always useful).
3. Introduce fields of specialization (e.g. communication engineering, power systems, electronics and microelectronics, and automation engineering) for clustering the electives in the Master programme. Each field of specialization shall comprise a variety of elective-courses. The individual students shall, for instance together with their "student-advisor", choose for one field of specialization.

The fulfilment of these conditions must be documented in writing within nine months (i.e. until 21st June 2017) and is subject to assessment by AQ Austria. In case of non-fulfilment, the accreditations will be withdrawn immediately.

7 Annex

- Review report of the expert panel
- Formal statement by IUS