UNIVERSITY OF PRIZREN "UKSHIN HOTI"

SOFTWARE DESIGN, Bachelor Professional

ACCREDITATION

REPORT OF THE EXPERT TEAM

March 2024, Prishtina

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1. INTRODUCTION

1.1. Context

Date of site visit: 26.03.2024
Expert Team (ET) members:

- Prof. Dr. Miklos Hoffmann
- Prof. Dr. Peeter Normak
- Issabek Muratov, student expert

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Coordinators from Kosovo Accreditation Agency (KAA):

- Ilirjana Ademaj, KAA
- Arianit Krasniqi, KAA

1.2. Site visit schedule

Time	Meeting	Participants
09:30 – 10:20	Meeting with the management of the faculty where the programme is integrated	1. Zirije Hasani (ac.Dean) 2. Naim Baftiu (ac.Vice-dean) 3. Arbnore Shehu (FCS Secretary)
10.20 – 11.05	Meeting with quality assurance representatives and administrative staff	1. Nora Rada (University QA Office) 2. Arbnore Shehu (FCS Secretary) 3. Teuta Thaqi (University QA Office) 4. Blerta Ferati (Head of the Student Affairs Division) 5. Zemira Brasilla Dakaj (Office of Academic Affairs) 6. Kushtrim Rakaqi (Head of the Scientific Research Sector) 7. Xhevat Kallaba (University Information Technology Office) 8. Hekuran Kabashi (University Library) 9. Teuta Krasniqi Gashi (Student Services Officer - Faculty of Computer Science) 10. Samir Skenderi (Translator)
11:10 – 12:10	Meeting with the heads of the study programme	Arta Misini Arbër Beshiri Betim Maloku
12:10 – 13:10	Lunch break	

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13:10 – 13.40	Visiting Facilities	Zirije Hasani Endrit Fetahi
13:40 – 14:25	Meeting with teaching staff	1. Samedin Krrabaj 2. Ercan Canhasi 3. Arsim Susuri 4. Malush Mjaku 5. Endrit Fetahi 6. Marigona Krasniqi
14:30 – 15:20	Meeting with students and graduates of the program	1. Valon Ibrahimi 2. Diellza Muqaj 3. Xhafer Muja 4. Ramadan Sezallari 5. Gatinë Himaj 6. Arjeta Shehu 7. Asdren Pervizaj 8. Shaip Zekolli 9. Edona Shehu 10. Rezart Kallaba
15:25 – 16:10	Meeting with external stakeholders	1. Enis Qafleshi 2.Visar Haxhifazliu 3. Lamir Shkurti 4. Luan Sopi 5. Besfort Guri 6. Lulzim Guhelli
16:10 – 16:15	Internal meeting of KAA staff and experts	
16:15 – 16:20	Closing meeting with the management of the faculty and program	Zirije Hasani (ac.Dean) Naim Baftiu (ac.Vice-dean) Arbnore Shehu (FCS Secretary)

Sources of information for the Report:

- Self Evaluation Report (SER), including 37 annexes
- Syllabi of the courses
- CVs of the academic staff
- Documents obtained through the web links in the SER (including *Statute of the University "Ukshin Hoti" Prizren*, Code of Ethics, and several others)
- Other documents of the University of Prizren (UPZ) submitted upon request (8 additional annexes)

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- KAA Accreditation Manual
- Administrative Instruction for Accreditation of Higher Education Institutions in the Republic of Kosova
- Official website of UPZ.

Criteria used for program evaluation:

- Standards and performance indicators for external quality assurance (Re/accreditation of bachelor and masters study programs) set in the Accreditation Manual
- National Qualifications Framework

1.3. A brief overview of the institution and program under evaluation

The University of Prizren (UPZ) was established in 2009 as a public university through reorganization of the Faculty of Education of the University of Prishtina. UPZ started officially in 2010 and has currently six faculties: 1) Faculty of Education, 2) Faculty of Economics, 3) Faculty of Law, 4) Faculty of Computer Science, 5) Faculty of Life and Environmental Sciences, 6) Faculty of Philology.

The Faculty of Computer Science (FCS) was established in 2010. FCS offers study programs also in Turkish and Bosnian languages.

The mission of the Faculty of Computer Science is t*o conduct high-level international scientific research aimed at societal and industrial development, as well as to educate distinguished students who will be leaders of future generations.*

The mission of the Faculty has a different formulation on the Faculty's website:

To provide students with a solid background in basic programming theory and concepts as well as Software and Engineering Systems, Database and Information Systems as well as Web Applications, Network Design, Security, Distributed Systems, Telecommunications and Mechatronics.

The Strategic Plan of FCS for years 2024-2027 is based on seven (7) strategic objectives:

1) ensuring quality in teaching and learning; 2) advancing research work; 3) contributing to the community; 4) internationalization and networking; 5) developing infrastructure and recruitment; 6) opening new unique study programs; 7) financial sustainability.

FCS offers study programs at bachelor's and master's level, and plans to open a doctoral study program. There are about 500 students enrolled at FCS, of which about 40% are females. The students mainly come from the Prizren region (Prizren, Suhareka, Rahovec, Malisheva, and Dragash), the city of Gjakova, and from the northern part of Albania. FCS employs ten full-time academic staff.

The mission of this study program is to promote the study of Computer Science based on the Bologna process, European programs, and their experience. A detailed mission is published in the Feasibility Plan of the study program:

The mission of the "Software Design" study program is to provide a solid foundation of knowledge and skills in software design, focusing on the content and development of computer applications. Also, the mission aims to promote deep technical knowledge and innovation skills in the field of software design to prepare students for the challenges of technological change, encourage collaboration and the development of team communication skills, improving management skills. projects and to promote the values of equal treatment of all students and cultural diversity in an open and inclusive environment.

The study program relies on a Software Design BSc program that was accredited in 2019 for 3 years. The following explanation of this shift has been given to the ET:

1) According to the study that was financed by the US Embassy, market needs more graduates who are more skilled in applications;
2) Feedback from employers who indicated the growing need software developers;
3) To provide career advancement opportunities to the graduates of two regional professional high schools; this is also the reason why the number of applications to the program is expected to be increased (there were only 110 applications in 2021)
4) Lack of research-oriented teaching staff in computer science.

The studies last 3 years (6 semesters). The winter semester starts on October 1st and ends on January 15th, while the summer semester starts on February 15th and ends on May

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31st. Exams are organised in three regular sessions: January 20 - February 15, June 6 - June 30, and September 7 - September 30.

The study program has the following objectives:

- To provide students with a strong foundation in computer science and principles of software engineering.
- To ensure a deep understanding of programming languages, algorithms, data structures, and software development methodologies.
- To develop practical skills in designing, developing, testing, and debugging.
- To enable students to work with skills using various software tools, frameworks, and technologies employed in the software industry.
- To cultivate critical thinking and problem-solving skills in the context of software design challenges.
- To encourage innovative and creative approaches to addressing complex issues in software development.
- To promote effective collaboration and teamwork, simulating real-world work environments in the software industry.
- To develop interpersonal and communication skills, fostering effective collaboration and interaction within the context of the software development industry.
- To equip students with the ability to adapt to technologies and methodologies in software development in the industry.
- To instil a sense of professional ethics and responsibility in software design practices, preparing students to make ethical and responsible decisions in their professional careers.

The study program has an big number (39!) of expected learning outcomes. By completing this study program, students will gain competencies, listed below, that will enable them to:

1. Demonstrate proficiency in programming languages commonly used in software development, such as Java, Python, C#, or others.
2. Apply the principles of data structures and algorithms to efficiently solve complex problems.
3. Apply mathematical reasoning to problem-solving in computer science.
4. Develop critical thinking and analytical skills.
5. Design, implement, and maintain software systems that meet specified requirements.

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6. Understand and apply architectural models and principles in the design of scalable and maintainable software systems.
7. Understand computer architecture and system organisation.
8. Demonstrate the ability to create modular and reusable software components.
9. Apply knowledge of SDLC methodologies, including Agile, Scrum, or others, to effectively manage software projects.
10. Develop and adhere to coding standards, version control, and testing practices.
11. Analyse and solve complex problems through systematic and logical approaches.
12. Evaluate and select appropriate technologies and tools for specific software design challenge.
13. Design intuitive and user-friendly interfaces that enhance the overall user experience.
14. Apply usability and accessibility principles in software design.
15. Implement HCI principles in the design and evaluation of software interfaces.
16. Understand the principles of database design and management.
17. Work effectively in collaborative software development environments.
18. Communicate technical concepts clearly and concisely to both technical and non-technical stakeholders.
19. Understand effective communication strategies in team environments.
20. Implement and execute effective testing strategies to ensure software quality and reliability.
21. Identify and efficiently correct software defects.
22. Create comprehensive documentation of software design, including architectural diagrams, data models, and user interface prototypes, for real-world projects.
23. Demonstrate an understanding of common security vulnerabilities and apply best practices to ensure software application security.
24. Explore the integration of technology into business processes.
25. Stay informed about technologies in development and industry trends.
26. Engage in continuous professional development to enhance skills and knowledge.
27. Adhere to ethical standards in software development.
28. Explore applications of 3D modelling in computer graphics.
29. Learn principles and techniques of game development.

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30. Demonstrate the ability to plan, execute, and present a software development project
31. Understand the principles and architectures of distributed systems.
32. Demonstrate a commitment to professionalism, accountability, and responsible use of technology.
33. Plan and manage software development projects, including assessing efforts, task planning, and progress tracking.
34. Understand the principles and algorithms of machine learning and artificial intelligence.
35. Apply data mining algorithms to extract models from large datasets.
36. Develop dynamic and interactive web applications
37. Learn the principles of network design, protocols, and programming.
38. Apply and adapt existing frameworks to develop software solutions.
39. Develop skills in mobile application development and cloud-based solutions.

Remark 1. The structure of the SER was only partly in harmony with the structure of the Expert Report. For example, Quality management consists of nine standards (2.1 – 2.9) while the SER contains information only about 2.1 – 2.4. Consequently, the experts had to put much effort in finding appropriate evidences in the website of the university, requesting additional documents and wasting time on discussing formal regulations during interviews.

Remark 2. The content of the SER was not always substantive. Just three examples from the first section (*Mission, objectives and administration*):

- Standard 1.2 is about ***academic and professional advice*** that was used in defining the intended learning outcomes. It was in fact not described in the SER.
- Standard 1.3 is about ***didactic and research concept*** the study program is based on. Again, neither didactic nor research concept was presented.
- Standard 1.4 is about ***formal policies, guidelines and regulations***. None was mentioned in the corresponding subsection of the SER.

Therefore, the interviews had, perhaps, more questions than usual. However, because they were partially conducted through an interpreter, there was less time for discussions.

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2. PROGRAM EVALUATION

2.1. Mission, objectives and administration

1.1. Since software design belongs to a core competency of the Faculty of Computer Science, the study program is in full compliance with the mission of the Faculty.

1.2. The intended learning outcomes are consistent with the National Qualifications Framework and the Framework for Qualifications of the European Higher Education Area. During their development, the consortium partners of the United States Agency for International Development financed project "Private Sector Partnerships for Higher Education Strengthening - USAID" were consulted, as well as relevant university regulations like *Code of Ethics* and the Anti-Plagiarism System were considered. The study program was also discussed at the Industrial Board meeting.

1.3. The SER does not describe any overarching didactic and research concept. Teaching and learning methods are described in the syllabi in the most formal way, using almost identical wording (for example, "The course is a combination of lectures, discussions, numerical and laboratory exercises, while the assignments are presented by the laboratory course teacher"). However, the interviewed academic staff explained that they use a practical approach and peer training for sharing experience.

1.4. The main document stating the structure and administration is the detailed (74 pages, 239 articles) *Statute of the University "Ukshin Hoti" Prizren*, which is publicly available. However, this document is not machine readable and therefore its contents are not searchable. All major policies, guidelines and regulations are in English and are freely available on the UPZ website: *Statute of the University*, *Quality Assurance Regulation*, *Regulation for Scientific Research*, *Student Handbook*, *Code of Ethics*, *Regulation on Mobility of Students*, *Annual budget reports*, *Strategic Plan of FCS for 2024-2027*, *Accreditation Decisions at the FCS*, etc.

1.5. The principles of ethical conduct of students are presented in the *Code of Ethics for Students of University "Ukshin Hoti" Prizren*. This detailed document (10 pages) has separate sections dedicated to the principles and standards of student behavior, students' obligations and rights, unethical behaviors and violations of students. A separate document – *Code of Ethics for the Personnel of University "Ukshin Hoti" Prizren* – is for staff. The Statute of the UPZ states that students are obliged to respect the regulations of the ethic code (Article 144) and that the academic staff are obliged to

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respect "the ethic codex" (Article 181). The Ethics Council and a separate Ethics Commission for Scientific Research of UPZ are formed.

1.6. SER did not provide any information about reviewing the policies, regulations, terms of reference and statements of responsibility relating to the management and delivery of the study program. However, the majority of documents published on the university's website are from 2022 or 2023.

Compliance level: substantially compliant.

ET recommendations:

1. *Formulate an explicit overarching didactic and research concept of the study program.*

2.2. Quality management

2.1. The SER provides a comprehensive overview of the quality system at the university and Faculty level. The main bodies at the Faculty level are: Dean, Faculty Council, Quality Assurance Committee, Quality Assurance Officer. The quality system has several instruments, including, for example, the *Feasibility Plan*, in the development of which the majority of academic staff teaching in the study program took part.

2.2. The main quality processes take place at the university level, and the main document (*Quality Assurance Regulation*) defines the policies, mechanisms, standards, instruments and procedures for quality assurance and evaluation of work at the university. The University has adopted a Quality Assurance Cycle consisting of six stages: from the initiation of the evaluation cycle to the implementation of monitoring outcomes. Evaluation is carried out at the Faculty level and at the level of study programs.

2.3. Quality issues belong to the scope of the *Vice-Rector for International Cooperation and Quality Enhancement*. Practical quality assurance activities are coordinated by the *Quality Assurance Office*. Processes are unified at the university level. The evaluations cover nine areas: 1) teaching and learning, 2) research, 3) graduates assessment, 4) employers assessment, 5) services for students, 6) management of the academic unit, 7) study programs, 8) academic staff and external collaborators, 9) textbooks, library, and information sources. The procedure for developing and approving a study program

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is defined in the *Guide for the Review of Study Programs at the University "Ukshin Hoti" Prizren*. Annual evaluation reports are published on the University website.

2.4. Regular evaluations are carried out at the end of each semester. Questionnaires are considered as the main tools for quality assurance. Students and graduates assess separate courses as, but they have limited possibility to evaluate the entire study program. Faculty members are evaluated against 5 criteria, but, as it was reported in the interview phase, the exact scoring system and expectations, for example in terms of contribution to the University and to the society, are not fully clear to the staff.

2.5. The SER did not provide clear information about satisfaction of standards 2.5-2.9. However, the fact that the number of applications to the study program has monotonically decreased (from 152 in 2018 to 110 in 2022), and that the proportion of admitted students was extremely high (96% of applicants in 2021), leads to the conclusion that the quality assurance processes do not ensure continuing improvement of performance. Moreover, the low quality of the SER can be explained by the fact that no one was assigned personal responsibility for the quality of the SER, and persons from the QA Office of the University have been insufficiently involved in the preparation of the SER. Also, a permanent program committee or council is not formed, which would include representatives of all major stakeholders (professors, students, graduates, employers, professional unions etc). It is appropriate to note here that a similar comment was contained in the Expert Report on accreditation for 2019.

2.6. The following questionnaires have been implemented: 1) Questionnaire for teacher and assistant evaluation, 2) Questionnaire for inter-collegial evaluation, 3) Questionnaire for inter-collegial evaluation, 4) Questionnaire for inter-collegial evaluation, 5) Questionnaire for inter-collegial evaluation, 6) Questionnaire for inter-collegial evaluation, 7) Employers questionnaire (Industrial Advisory Boards), 8) Drop-out monitoring questionnaire, 9) Teacher self-evaluation questionnaire, 10) Teacher/assistant professional development plan, 11) Student tracking, 12) Form for intercollegiate observation in the lecture, 13) General evaluation (programmes, administrative services, faculty, library, infrastructure, management bodies), 14) Evaluation report on contribution to the University and contribution to society, 15) Evaluation report for scientific publications and conference attendance, 16) Evaluation report by the Dean. Summary reports of assessment are on the university website freely available.

2.7. The university's Quality Assurance Cycle consists of 7 stages, including Data collection, Data analysis, Report generation, Drafting of recommendations and Implementation of recommendations. The evaluation results are processed by the Quality Assurance

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Office; reports with recommendations are submitted to the Central Quality Assurance Committee for implementation. Although formally this is a new study program, due to the strong similarities with the previous BSc study program, the vast majority of recommendations for 2019 are also adequate for the professional bachelor's study program. Unfortunately, only about half of them have been realized. During the interviews, students, graduates and employers expressed several ideas for improving the study program. This indicates that the Faculty actually lacks an effective feedback system in the quality assurance system.

2.8. The main relevant documents (*Quality Assurance Regulation* and *Guidelines for the evaluation of academic staff, course evaluation, and the use of evaluation results at the "Ukshin Hoti" University Prizren*) specify evaluation periods for different types of evaluations.

2.9. Current versions of quality assurance documents stem from years 2020-2022.

Compliance level: substantially compliant

ET recommendations:

1. *Appoint **one** academic staff member of the Faculty as the responsible head/curator of the study program, who has full responsibility for the quality of the study program.*
2. *Determine the authority and responsibilities of the curator explicitly in the University regulations.*
3. *Form a permanent council of the study program, which includes representatives of employers, partners, students, graduates and key academic staff, including other heads of the study program. The task of the council will be to develop recommendations for further improvements of the study program based on surveys of all stakeholders, international development trends of the academic area and the needs of society.*
4. *Define more clearly and specifically the exact scoring system and expectations towards the academic staff for each criterion of their evaluation (table 2.1.3.1 in the SER).*
5. *Define a feedback mechanism that gives sufficient feedback to all stakeholders, especially to students about what happened to the information collected from them through the survey and what actions the management took in relation to the potential criticisms observed there.*

2.3. Academic staff

3.1. UPZ as a public university follows strictly all regulations concerning employment.

3.2. UPZ as a public university follows strictly all regulations concerning the occupation of teaching positions.

3.3. According to the standard, academic staff should not cover, within an academic year, more than two teaching positions (one full-time, one part-time). The university has set an even stronger requirement: Article 166 of the *Statute* states that "Staff members with full-time contracts shall not hold any other part-time or full-time employment contracts inside or outside the University".

3.4. About 82% of the academic staff are FT teachers and they cover about 95% of the classes of the study program.

3.5. There are 9 full-time and 2 part-time teachers (altogether 10 full-time equivalent) on the study program. Six full time teachers have a PhD (Samedin Krrabaj, Naim Baftiu, Ercan Canhasi, Arsim Susuri, Malush Mjaku, Zirije Hasani). As there will be 250-300 active students on the study program, the student/teacher ratio is acceptable. On the other hand, as the majority of teachers are teaching also on other study programs, the student/teacher ratio is less favorable.

3.6. The university has established a special unit – Center for Teaching Excellence – to support the academic staff in their professional development. The center has bi-annual development plan. Nevertheless, the staff claimed that they would like to have more support from the university in their professional development, including providing bigger research budget and opportunities for sabbaticals. Since the ratio of students to teaching staff is relatively high (approximately 50 students per full-time teaching staff on average), their teaching load is also high and there is not enough time for research and professional development. Relaunching the software design study program requires a significant increase in the number of teaching staff. The need for more teaching staff was also mentioned by students and alumni, especially for the purpose of improving the individual supervision of students.

3.7. Engagement in the academic community and community service belong to the criteria for assessment of the academic staff. Number of hours of consultation between professors and students is set as one of the indicators in the *Development Plan* of the

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Faculty. On the other hand, the obligations in work contracts of academic staff are formulated in extremely general terms, and are identical for assistants and associate professors. For example, according to the work contract, an academic staff does not have any obligation to conduct research or contribute to the providing community services.

3.8. Assessment of academic staff is conducted twice a year, at the end of each semester, by students, by colleagues and by the Dean. For the total performance evaluation, also scientific publications, participation on conferences and contribution to the university and society are also taken into account. Academic staff prepare an annual Work Plan and a self-evaluation report. However, no regular development discussions are conducted with the immediate superior.

3.9. The FCS Strategy has a subsection *Quality assurance in teaching and learning*. The main goal is to increase the number of students graduating in three years. Implementation of various teaching techniques and improvement of physical study environment are among the mechanisms mentioned.

3.10. The average age of teachers, according to submitted CV-s is about 40 years; only one employee is approaching retirement age.

Compliance level: substantially compliant

ET recommendations:

1. *Introduce mandatory annual individual development discussions of the academic and non-academic staff by their superiors, based on the annual staff self-evaluation reports. The main purpose of development discussions will be to identify problems that are hindering the employee's professional growth and plan measures to solve them.*
2. *Develop and implement employment contract forms for academic employees, which would stipulate the detailed rights and obligations of both the university and the employee.*
3. *To reduce the student/teacher ratio, hire more academic staff, preferably full-time.*
4. *Allocate more resources to the professional development of academic staff.*

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2.4. Educational process content

4.1. The scope of the study program is relatively broad and covers several topics of software design. The study program is unique in Kosovo and the graduates are widely needed. However, the general conception of the study program is not explained. The SER does not mention most reputable institution (ACM) that has issued curricula recommendations for undergraduate and graduate programs (https://www.acm.org/education/curricula-recommendations). There are a number of aspects that were not directly discussed in the SER or that came up during the interviews:

4.1.1. It is written in the SER (p 35) that the study plan has been harmonized with the study plans of seven universities (Munich Univ. of Technology, TU Vienna, Univ. of Kingston, Imperial College London etc). The principles of harmonization remained unclear. Moreover, the comparison is not adequate, since the corresponding study programs in these universities are bachelor of science, not professional study programs. Even the IU University of Applied Sciences which belongs to the seven universities, offers a Bachelor of Science study program in Software Development. This is probably why the total size of projects and Internship is significantly smaller in the study program than it usually is in professional bachelor study programs (see, for example, SW Technology Engineering of VIA University College in Aarhus https://en.via.dk/programmes/bachelor/software-technology-engineering/course-catalogue).

4.1.2. The size of every course is 6 credits, and includes 2 hours of lectures and 2 hours of exercises each week, regardless of course type (theoretical or practical). The proportion of exercise hours should be significantly higher for subjects that focus primarily on skill development (for example, software engineering, or *English Language*). The students and graduates who met with the experts also felt that the proportion of exercises could have been greater. As the former BSc study program is replaced by a professional study program, the proportion of exercises should be even greater.

4.1.3. The entire study program seems to be focused primarily on developing knowledge rather than skills – topics discussed on lectures and exercises are often identical. This means that the exercises are limited to the topics

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discussed in lecture. In the example of software development, students are solving small exercises, but are not developing entire computer programs, from problem analysis to testing a working prototype. Even the *Project* elective course is more about general project management rather than team-based development of full-featured software. The experts were told that such a subject is *Project* (*professional internship*). However, according to the syllabus, it is a subject with a conventional structure, divided into lectures and exercises. In fact, the full-featured software development process should follow the actual software development process, which consists of iterations/sprints.

4.1.4. The subject title does not always adequately reflect the content of the subject. A few examples: 1) the name *Framework* says nothing about the content of the course; the course is dedicated to only one specific framework – the *Spring Framework*, 2) a more adequate name of the *Project* course would be *Project Management*; 3) The *Software Engineering and Project Management* course does not have a clear focus: the first half is devoted to software engineering and the second half to some aspects of general project management, without any clear connection between these parts.

4.1.5. Although the expected learning outcomes cover also necessary soft skills, their development is not sufficiently reflected in the syllabi. For example, teamwork skills are covered in the learning outcome No 17 ("Work effectively in collaborative software development environments") and are listed in the Alignment Table (Annex 2.4.1.4), which must be developed across 16 courses. On the other hand, teamwork is mentioned only in three syllabi. A similar question arises regarding some other learning outcomes. For example, if agile software development methodologies are predominantly used in companies - and the importance of developing the skills to use them was also mentioned by employers - students could name only one agile methodology (*Scrum*) while meeting with experts.

4.2. The study program complies with the *National Qualifications Framework* and the *Framework for Qualifications of the European Higher Education Area*. A thorough correspondence between the learning outcomes of the entire study program and the learning outcomes of the courses is carried out.

4.3. The general principle of using a top-down approach to course content is appropriate (meaning that studies begin with general courses, followed by more specific courses). There are 39 learning outcomes listed. They are sometimes unusually specific. For

example, one of the outcomes is "Identify and efficiently correct software defects". On the other hand, the experts were unable to find a single course description that explicitly contained such a learning outcome of fixing software defects. Some minor issues also relate to the ordering of topics. For example, graphs are introduced on the first semester in the *Problem Solving* course, while these are defined in the second semester in the *Discrete Mathematics* course.

4.4. The syllabi contain all the necessary components and are presented in electronic form. They could be in some aspects more specific. For example, teaching methods in almost all courses are described as follows: "The course is a combination of lectures, discussions, numerical and laboratory exercises, while the assignments are presented by the laboratory course teacher".

4.5. The language in which the study program will be offered is Albanian.

4.6. Student centricity was named one of the main principles of the university. Students positively assessed the teaching staff and teaching methodology. This allows us to conclude that the student-teacher relationship is a partnership.

4.7. Although the syllabi have a separate section *Teaching methods*, the description of teaching methods is identical – and quite formal – in all syllabi, except for the *Project* (*professional internship*). The corresponding section of the SER focuses on assessment and says nothing about teaching strategies. The previous section of the SER states that certain principles are followed in teaching, without providing any evidences or concrete descriptions.

4.8. Grades are formed on the basis of a certain point system, according to which the result of each activity is evaluated with points and at the end of the semester the points are added. The syllabi describe the distribution of assessment components, which is confusing in some cases. For example, in the case of *Introduction to Web Languages and Technologies*: Attendance – 5%, Homework + Project – 45%, Midterm 1 – 25%, Midterm 2 – 25%, Exam – 50% which makes 150% in total. The assessment criteria are not described in the syllabi. However, students did not complain about the assessment mechanisms.

4.9. Teaching efficiency is extremely low. For example, in 2018-2022, the total number of graduates was 164, while in 2015-2019, the total number of admitted students was 697. Thus, the number of graduates was approximately only a quarter of the number of those who started studying. Two main reasons for this were given: 1) high student employment and 2) high emigration rate.

4.10. No case of inadequate or inconsistent assessment was reported.

4.11. The study program contains two courses *Project (professional internship)*. These courses are more like traditional courses with weekly lectures and exercises. Therefore, the study program does not contain a mandatory traditional internship, where students are fully involved in the real work processes of a company.

4.12. The University of Prizren "Ukshin Hoti" has concluded agreements on professional practice placement with several institutions. Selected students can spend 3 to 6 months in these institutions to complete some practical assignments and receive a monthly salary of 80 euros.

Compliance level: substantially compliant

ET recommendations:

1. Revise the study program taking into account the following recommendations:
   1.1. Introduce at least one mandatory project-based course in which students in groups will go through the full software development cycle using an agile development methodology (preferably *Scrum*).
   1.2. Provide an adequate division of weekly hours between lectures and exercises in subjects, or, if possible, abandon such formal division (i.e. allow flexibility in the number of lecture and exercise hours).
   1.3. Introduce a mandatory internship.
2. Revise the learning outcomes of the study program, significantly reducing their number and following the "top-down" principle (the learning outcomes of the study program are more general, and more specific of courses).
3. Harmonize the learning outcomes of the courses with the learning outcomes of the study program.
4. Find out the reasons for the low graduation rate of students and plan measures to increase it.

2.5. Students

5.1. The admission criteria for new students are according to the clauses set in the *Statute of the University "Ukshin Hoti" Prizren*, and in accordance to the legal regulations established by MEST and KAA. The university publishes detailed descriptions of admission: requirements for candidates, methods of selection, deadlines, schedule of entrance exams, etc.

5.2. To enroll in this program, applicants must have completed secondary education and successfully pass the admission exam. Higher education certificates of students from other countries will be recognized by the specific regulation.

5.3. One student group consists of a maximum of 60 students per lecture, while for laboratory work and exercises there are usually up to 20 students, but in some cases there may be more than 20.

5.4. The communication of the student evaluation results is made no later than 7 days from the date of the exam, according to the official schedule. Students get support and feedback throughout the semester.

5.5. The final results achieved throughout the entire process of studies are certified in a transcript of the records. Students get support and feedback throughout the semester.

5.6. The exam in the same subject can be repeated up to 4 times (the 4th to a commission). Students with valid reasons are given the opportunity to retake the test.

5.7. At the end of each semester, the Faculty prepares a semester report in which, among others, the percentage of student success rate is reported.

5.8. The university has implemented an anti-plagiarism system. Procedures related to academic misconduct, including plagiarism and other forms of copying, are outlined in the *Code of Ethics*. The highest administrative bodies that must ensure compliance with the regulations are: the Ethics Council, the Ethics Council in Scientific Research and the Disciplinary Commission.

5.9. All rights and obligations of students in learning, attendance of lectures, evaluation, etc. are determined in the *Statute of the University* and in the *Student Handbook*. These documents are freely available on the Internet. However, the *Statute* is not in a computer readable format, making searching inconvenient and time-consuming. Periodically, the meetings regarding the rights and obligations are provided to students.

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5.10. Students' international mobility is carried out in accordance with the *Student Mobility Regulations at the University "Ukshin Hoti" Prizren*. Another document – *Regulation of the Transfer of Studies at "Ukshin Hoti" University in Prizren* – describes the criteria and procedures for changing departments, changing the study program and taking courses from other department of the University. Students' transfer from another university to UPZ is explained on the university website. Taking courses from other institutions is also possible, some students have used this opportunity. The recognition of the study outcome from the mobility and support from the academic side is well established.

5.11. Academic staff are required to be available to students for a few hours on a regular schedule. Additional consultation hours with academic staff may be arranged. Consultations can be organized in individual or group form.

Compliance level: fully compliant.

ET recommendations:

1. *Convert and publish the Statute of UPZ in machine-readable form*.

2.6. Research

6.1. The main document, which stipulates the principles of organizing work and scientific research activities, the rights and obligations of competent bodies of the University and participants in scientific research, participation in scientific congresses and conferences, workshops, seminars and symposia, as part of the University 's scientific research is the *Regulation for Scientific Research*. The development of scientific research is one of the strategic priorities of the Faculty. Objectives and potential areas of research are described in the *Strategic Plan 2024-2027* of the Faculty of Computer Science.

6.2. Expectations for teaching staff involvement in research and scholarly activities are specified in the *Statute of the University* and in the *Quality Assurance Regulation*. Performance in relation to these expectations is considered in the self-assessment report. Scientific publications and participation in conferences account for 30% of the evaluation of the academic staff. Although research requirements for teachers in professional study programs are relatively low, expectations of companies towards academic staff, on the other hand, are relatively high. Representatives of employers who met with the experts expressed the wish that university teachers would be more

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interested in the problems of companies and contribute to solving them. The Career Office has been described as the meeting point of the university with industry. However, the office is understaffed and lacks the capacity to facilitate extensive and trustworthy university-industry collaborations.

6.3. What is considered under research is determined indirectly, through the indicators for measuring the key performance indicator "Development of Scientific Research". According to the *Strategic Plan*, "Big Data and Data Analysis" and "Cyber Security and Internet of Things" are identified as the main areas of research. The establishment of research groups in these areas is a strategic priority in the Action Plan. Note that this was one of the recommendations already in the 2019 accreditation report. Another relatively underdeveloped area of activity is cooperation with companies.

6.4. Research of the academic staff is in general conducted on the topics of the study program, with some minor deviations.

6.5. The research of a vast majority of academic staff is internationally visible (for example, in *Google Scholar*). All full-time academic staff are registered in Google Scholar and have research publications.

6.6. Research is basically validated by scientific publications and participation on scientific conferences.

6.7. According to Google Scholar, the vast majority of teaching staff has produced in average at least one scientific publication per year.

6.8. Full-time academic staff within the Faculty publish papers on behalf of the UPZ.

6.9. The experts were explained that since teachers offer courses in their areas of competence, specific questions that belong to the scope of their research areas are also discussed.

6.10. Aspects of Intellectual property form a paragraph in the *Code of Ethics*. However, the university has not established procedures for commercializing ideas developed by staff and students.

6.11. Increasing student participation in research-scientific work is declared as one of the strategic objectives of the university. The number of publications co-authored by academic staff/students is one of the KPIs of FKZ. It is also planned that students will be involved in cooperation projects with local industry.

Compliance level: substantially compliant

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ET recommendations:

1. *Decide on the research priorities inside the two main areas of research ("Big Data and Data Analysis" and "Cyber Security and Internet of Things") and form research groups accordingly. Doing this, agree the work division with other institutions in Kosovo (for example, with AAB College in cyber security) and take into account the recommendations of international professional organizations (for example, Gartner).*
2. *Develop and implement a strategy for cooperation with the industrial sector*.

2.7. Infrastructure and resources

7.1. The faculty has developed a thorough *Feasibility Plan*, that contains study program profile and macro-environment analysis, maps employment opportunities of the graduates, presents a positioning analysis (SWOT analysis) of the study program, and other important aspects. Moreover, the Faculty has many year experience of running a similar study program. At the same time, relatively little attention has been paid to creating an environment that supports students' extracurricular academic activities.

7.2. The abovementioned *Feasibility Plan* has a section *Cost and benefits of the study program* which calculates both expected income and costs (including variable cost). However, the fact that the Faculty does not have its own full budget (part of the expenses is covered centrally by the university) allows only approximately to calculate the income and expenses of the study program.

7.3. As a public institution of higher education, the financial sustainability of the University is guaranteed by the Mid-Term Expenditure Framework for the next three years. The University is the owner of the space it uses. According to the SER, the Faculty of CS has 9 classrooms including the Amphitheatre, divided into 2 floors with an area of about 1762 m^2. The Amphitheatre has 280 seats, the other classrooms up to 80 seats.

7.4. Considering the number of students (about 500 active students on all study programs of the FCS), the number and size of the lecture halls, classrooms and laboratories is adequate. However, there is an area where students expressed a wish that it could be better – more and better equipped labs. The start of admission for the "Software Design" study program causes a significant increase in the number of students, so the number of study rooms must be increased accordingly. The situation is likely to improve

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in the coming years, as there is an agreement that the Innovation and Training Park will additionally provide a building for the needs of the FCS.

7.5. Students have free access to a sufficient amount of study materials, most of which are written in Romanian and partly also written by the teaching staff of the Faculty. Although some of the textbooks are older than 10 years, it does not really matter as there is plenty of suitable study material available online. Moreover, the University, as a member of the *Association of Electronic Libraries of Kosovo*, also has access to online databases.

7.6. The Facility possesses electrical stairs, elevators, emergency exits as well as the entire infrastructure which is needed for students with special needs.

Compliance level: substantially compliant

ET recommendations:

1. *Strengthen efforts for setting up specialized labs for conducting exercises and individual work of students.*
2. *Furnish more space for students to learn and socialize outside of classrooms.*

3. OVERALL EVALUATION AND RECOMMENDATION OF THE ET

Since self-assessment reports submitted by universities and colleges are of extremely low quality in the case of several consecutive assessments of educational programs, it would be advisable to develop guidelines for the preparation of self-assessment reports with examples, to increase the requirements for the quality of self-assessment and to ensure that the submitted self-assessment reports correspond to them.

Although the study program was proposed for evaluation as an applied higher education study program, it largely coincides with the Software Design BSc which was evaluated in 2019 (out of 78 subjects in the 2019 study program, three were left out and eight new courses added to the 2024 study program). Therefore, the recommendations made by experts in 2019 are also relevant for the study program under the evaluation.

The following proposal is based on the assumption that, along with the launch of the study program, the resources allocated to the Faculty will increase – the number of academic staff, funds to support scientific research, as well as to upgrade existing and create new laboratories.

In conclusion, the Expert Team considers that the bachelor's professional study program *Software Design* offered by the University of Prizren "Ukshin Hoti" is *Substantially compliant* with the standards included in the KAA Accreditation manual and, therefore, recommends *to accredit* the study program for a duration of *3 years* with a number of *180* students to be enrolled in the program.

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Expert Team

Chair

	Peeter Normak	**22.04.2024**
(Signature)	(Print Name)	(Date)

Members

	Miklos Hoffmann	**22.04.2024**
(Signature)	(Print Name)	(Date)

	Issabek Muratov	**22.4.2024**
(Signature)	(Print Name)	(Date)

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