ASIIN Seal & Euro-Inf®

Accreditation Report

Bachelor's Degree Programme
Computer Science
Management Information Systems

Provided by
University of American College Skopje

Version: 12 December 2025

Table of Content

A About the Accreditation Process

Name of the degree programme (in original language)	(Official) English translation of the name	Labels applied for [1]	Previous accreditation (issuing agency, validity)	Involved Technical Committees (TC)[2]
Компјутерски науки	Computer Science	ASIIN, Euro-Inf® Label	Ministry of Education and Science of Republic of N.Macedonia 08-480/6 27.10.2023	04
Менаџмент на информациски системи	Management Information Systems	ASIIN, Euro-Inf® Label	1) Ministry of Education and Science of Republic of N.Macedonia 08-773/7 01.11.2023 2) ACBSP 2020	07
Date of the contract: 20.12.2024 **Submission of the final version of the self-assessment report:** 25.04.2025 **Date of the onsite visit:** 19. & 20.06.2025 **at:** School of Computer Science and Information Technology - University American College Skopje				
Expert panel: Prof. Dr. Peter Braun, Technical University of Applied Sciences Würzburg-Schweinfurt Prof. Dr. Milad Mirbabaie, University of Bamberg				

[1] ASIIN Seal for degree programmes; Euro-Inf®: Label European Label for Informatics

[2] TC: Technical Committee for the following subject areas: TC 04 - Informatics/Computer Science; Economics; TC 07 - Business Informatics/Information Systems.

Igor Kalendar, Engineering Manager & Product Owner at Heart for Health ICT Kristina Kalamukoska, Student at Ss. Cyril and Methodius University - Skopje	
Representative of the ASIIN headquarter: David Witt	
Responsible decision-making committee: Accreditation Commission for Degree Programmes	
Criteria used: European Standards and Guidelines as of May 15, 2015 ASIIN General Criteria, as of March 28, 2023 Subject-Specific Criteria of Technical Committee 04 – Informatics/Computer Science as of March 29, 2018 Subject-Specific Criteria of Technical Committee 07 – Business Informatics/Information Systems as of December 8, 2017	

B Characteristics of the Degree Programmes

a) Name	Final degree (original/English translation)	b) Areas of Specialization	c) Corresponding level of the EQF[3]	d) Mode of Study	e) Double/Joint Degree	f) Duration	g) Credit points/unit	h) Intake rhythm & First time of offer
Computer Science	B.Sc.		6	Full time / part time	-/-	6 Semester	180 ECTS	Fall / 2023
Management Information Systems	B.Sc.		6	Full time / part time	-/-	6 Semester	180 ECTS	Fall / 2023

For the Bachelor's degree programme Computer Science, the institution has presented the following profile in the elaborat:

"The Computer Science study program is aligned with the other programs at the School of Computer Science and Information Technology at UACS, and with the programs from the other units at UACS. The range of elective subjects enables the comprehensive development of students and the development of their specific interests.

The study program in Computer Science provides a standard university study curriculum from the first cycle of studies in the broader field of computer science. The basics of architecture and organization of computer systems, operating systems, and a comprehensive number of computer programming subjects including algorithms and data structures are covered. Furthermore, the program enables the study of the areas of databases and computer networks, as well as subjects that cover all phases of software development, ie software engineering. These courses are supported by courses that enable the acquisition of the basic mathematical apparatus as well as courses that, apart from the Macedonian language, enable the students to get acquainted with the tools and principles of creating digital content as well as getting to know the basic concepts of business environments. Through the elective courses, students have the opportunity to complete their knowledge

[3] EQF = The European Qualifications Framework for lifelong learning

at this level with courses from advanced and contemporary areas of computer science such as cloud computing, application of artificial intelligence, etc. […]

The study program in Computer Science is harmonized, with an appropriate combination of subjects, which include both theoretical and practical disciplines, and enables the creation of professionals with a completed first cycle of studies in a wide range of areas related to and based on computer science and information technologies."

For the Bachelor's degree programme Management Information System, the institution has presented the following profile in the elaborat:

„The purpose of the re-accreditation of the program in Management of Information Systems, as a three-year program of pre-graduate academic studies, is to enable the realization of a study program focused on the acquisition of knowledge and understanding of the role that information systems and technology have in the management of modern businesses.

In this academic area, there are a range of skills, abilities and knowledge from both information technologies and business that are necessary for future graduates in this program to be able to design, implement and manage management information systems as a basic support for business activities.

Modern businesses increasingly rely on information technology to provide management and monitoring of their operations, as well as efforts to increase and expand productivity and provide competitive advantage. Management information systems are essential for modern businesses and organizations, and the need for professionals with the necessary technical and business knowledge is increasing.

The program offers subjects in the field of the functioning of businesses and organizations such as accounting, finance, marketing, operations management and related. On the other hand, students acquire computer science knowledge necessary to understand information systems such as databases, programming and data analysis. Finally, all aspects of information systems are covered, such as coverage (from organizational, enterprise to global), through information systems for the basic functional components of organizational and business environments (sales management, customer relations, marketing, business intelligence, etc.) -business and the like) and specific aspects such as security, the role of information systems in innovation and new business models, communication and cooperation at the local and global level and the like.

Students, apart from the basic established scientific and professional aspects of the field, will be encouraged to think freely, creatively and critically

Professionally, graduates of this program will have a wide variety of jobs and roles as participants in the creation and administration of information systems, business analysts, project managers, and specialists in data analysis and business intelligence.“

C Expert Report for the ASIIN Seal[4]

1. The Degree Programme: Concept, Content & Implementation

Criterion 1.1 Objectives and Learning Outcomes of a Degree Programme (Intended Qualifications Profile)

Evidence:

- Diploma Supplements for each degree programme
- Module Descriptions for each degree programme
- Elaborat for each degree programme
- National Qualifications Framework for the Republic of North Macedonia
- Objective-Module-Matrices
- Self-Assessment Report
- Audit-discussions

Preliminary assessment and analysis of the experts:
The experts base their assessment of the learning outcomes on the information provided in the module descriptions, the so-called programmes' elaborat, the programmes' websites and in the Self-Assessment Report of the two degree programmes under review. For each degree programme, UACS has defined programme objectives and learning outcomes, intended basic and field-specific competencies and exemplary qualification profiles. However, the experts note that the university should publish more specific information about the individual degree programmes on its websites. Currently, the websites mainly contain a brochure with general information and an overview of the respective curriculum, but there is no in detail description of the respective programme objectives and learning outcomes. Therefore, the experts state that the university should make the qualification objectives accessible for all relevant stakeholders and ensure that the stakeholders can refer to them.

[4] This part of the report applies also for the assessment for the European subject-specific labels. After the conclusion of the procedure, the stated requirements and/or recommendations and the deadlines are equally valid for the ASIIN seal as well as for the sought subject-specific label.

The experts refer to the Subject-Specific Criteria (SSC) of the Technical Committees Informatics/Computer Science (SSC 04) and Business Informatics/Information Systems (SSC 07) and use the objective-module-matrices and module descriptions for each programme as a basis for judging whether the intended learning outcomes correspond with the competences as outlined by the respective SSC.

The experts note that the relationship between programme objectives and learning outcomes has been established in a comprehensible and logical manner. The development of these objectives and outcomes for both study programmes under review involves both internal and external stakeholders so that the curricula can be adapted and modified according to the needs of the industry and the graduates on a regular basis. However, during the audit, the experts note that the university could be better at gathering external feedback. They learn that the UACS has a business council comprising a total of 40 companies. This committee meets at least once a year. However, this committee is primarily used to provide information about events and workshops, exchange information about internships, define topics for final theses and, in some cases, recruit external lecturers. The experts view this as a positive approach. However, they learn that this committee is not currently used to discuss the objectives and content of the individual programmes. Although there is regular exchange with industry thanks to good relations and joint projects and internships, for example, the experts believe that this should be developed more systematically for the further development of the programmes. Therefore, the experts recommend to systematically include feedback from industry regarding the further development of the programmes.

For the Bachelor degree programme in Computer Science, UACS presents the programme's objectives and lists the corresponding learning outcomes in its Self-Assessment report, respectively the so called Elaborate as follows:

Computer Science - Undergraduate program 180 ECTS Objectives and Learning Outcomes (Elaborate CS Section 3b)	
Descriptor Type	**DESCRIPTION**
KNOWLEDGE AND UNDERSTANDING	Possesses knowledge and understanding of the basic areas of computer systems and sciences, architecture and operating systems, as well as computer system programming in all phases of creating software products and relevant modern technologies. It also has an understanding of basic related areas such as databases, computer networks as well as advanced computing techniques through optional study of the basics of data science, artificial intelligence, etc.
APPLICATION OF KNOWLEDGE AND UNDERSTANDING	Can apply acquired knowledge especially for programming and participate in professional development of software and information systems in different environments such as mobile and hybrid applications, web and cloud applications and based on advanced solutions and standards appropriate to the field of study.
JUDGEMENT ABILITY	Able to assess and evaluate appropriate real-world problems related to computer science in order to analyze and specify appropriate software solutions in various development and programming environments. Can evaluate and participate in the evaluation of computer systems and software solutions and appropriate working environments of informatics and its applications.
COMMUNICATION SKILLS	Has abilities for professional written and oral communication about problems, solutions and projects in the field of Computer Sciences as well as correctly documenting the appropriate stages of application development at a level appropriate for the degree of education.
STUDY SKILLS	Able to use appropriate professional literature in the field of computer sciences, to identify new sources of information and knowledge, and to organize and undertake activities for acquiring the same in an independent and professional manner.

For the Bachelor degree programme in Management Information Systems, UACS sums up the programme's objectives and lists the corresponding learning outcomes in its Self-Assessment report, respectively the so called Elaborate as follows:

Management Information Systems - Undergraduate program 180 ECTS Objectives and Learning Outcomes (Elaborate MIS Section 3b)	
Descriptor type	**Description**
KNOWLEDGE AND UNDERSTANDING	Possesses knowledge and understanding of the placement of Information Systems in organizations, of the mutual relations between organizational placement and information systems, especially for Management of Information Systems. Knows and understands the processes of analysis of needs and functionalities, their specification, design and projecting, appropriate implementation and programming as well as project management and maintenance.
APPLICATION OF KNOWLEDGE AND UNDERSTANDING	Has an understanding in areas of the wider environment of information systems such as databases, computer networks, computer architectures, operating systems and has the opportunity to acquire knowledge and understanding in other related areas through optional subjects.
JUDGEMENT ABILITY	Can apply the acquired knowledge especially for participation in designing, implementing and maintaining information systems in different environments according to pre-identified needs, functionalities and required degree of integration.
COMMUNICATION SKILLS	Is able to assess and evaluate appropriate real organizational environments and prerequisites in order to analyze and specify appropriate software solutions for the implementation of Information Systems Management. Can assess and participate in the assessment of solutions in the field of Information Systems Management, and their particular ethical, infrastructural, user and security aspects.
STUDY SKILLS	Has skills for professional written and oral communication about problems, solutions and projects in the field of Information Systems Management as wellas proper documentation of related phases and areas directly related to them at a level appropriate for the degree of education.

In the experts' opinion, the intended qualification profiles of both programmes under review are generally clear, plausible and allow students to take up an occupation, which corresponds to their qualifications. They learn that the graduates of UACS are much sought after in the labour market. The representatives of industry emphasize the high quality of the graduates of the programmes under review. They mention that graduates from both programmes have high technical knowledge and also very good soft skills like, for example, communication skills which is highly valued by industry. Furthermore, students as well as

graduates also state that they are satisfied with and well aware of their good job perspectives.

With regard to the Bachelor's degree in Computer Science, the experts also see consistency between the content, objectives and title, and rate it as a well-designed study programme. However, in the experts' opinion, the programmes are very similar – for example, the first year of study is the same in each case – which, in particular, means that, in the experts' opinion, the Bachelor's degree in Management Information Systems is not sufficiently differentiated and does not necessarily correspond to what the experts would consider a Bachelor's degree in Information Systems / Business Informatics. The Bachelor's degree programme Management Information Systems has a very strong focus on technical issues and, in the experts' opinion, lacks objectives and content that reflect the business side and the field of business informatics / information systems in the stricter sense. In the experts' opinion, the university must decide in which direction it wants to take the programme in the future: whether to strengthen the technical or the business side and adapt the content and objectives accordingly. The programme coordinators understand the experts' comments and admit that the programme currently still focuses heavily on technical issues. However, they are already considering incorporating more content related to data analytics and business analytics into the programme and defining “business analyst” as a potential graduate profile. In the experts' opinion, this would make sense as one step and place a stronger focus on information systems. However, for the moment, the experts state that UACS must ensure that the name of the degree programme, its intended learning outcomes and its content correspond with each other.

In addition, the experts note that the learning outcomes of both programmes could be further strengthened in terms of ethics, sustainability, application of AI technology, and digitalization. The experts recommend incorporating these points into the general learning outcomes.

In summary, the experts confirm that both degree programmes under review adequately reflect EQF 6 level (Bachelor’s programmes). This can also be confirmed based on the module descriptions and discussions. The learning outcomes of the Bachelor Computer Science are consistent with the ASIIN Subject-Specific Criteria of the Technical Committee 04. They aim at the acquisition of specific competences and are well-anchored and binding. However, in the experts’ opinion, the learning outcomes, the related content (see also criterion 1.3) and the title of the Bachelor Management Information Systems do not match each other perfectly. Therefore, the experts state that at the moment, this programme also does not completely match ASIIN Subject-Specific Criteria of the Technical Committee 07 as it is lacking objectives and content regarding business informatics and business fundamentals. Furthermore, the university should make the qualification objectives accessible for all

relevant stakeholders and ensure that the stakeholders can refer to them. In addition, the experts recommend to systematically include feedback from industry regarding the further development of the programmes.

Criterion 1.2 Name of the Degree Programme

Evidence:

- Elaborates of each degree programme
- Diploma Supplements for each degree programme
- Self-Assessment Report
- Discussions during the audit

Preliminary assessment and analysis of the experts:
The experts confirm that the English translation and the original name of the Bachelor's degree programme Computer Science correspond with the intended aims and learning outcomes as well as the content.

Regarding the Bachelor's degree programme Management Information Systems, the experts confirm that the English translation and the original name of the programme match each other. However, they are of the opinion that the name of the degree programme, its intended learning outcomes and its content do not perfectly correspond with each other. The experts believe that the content focuses too heavily on technical aspects, while there is too little content from the areas of Business Informatics and Business Fundamentals. In addition, in the experts' opinion, the learning outcomes do not differ sufficiently from those of the computer science program (see also criteria 1.1 & 1.3). Therefore, the experts concluded that UACS must ensure that the name of the degree programme, its intended learning outcomes and its content correspond with each other.

Criterion 1.3 Curriculum

Evidence:

- Diploma Supplements for each degree programme
- Module Descriptions for each degree programme
- Curricula overviews for each degree programme
- Elaborat for each degree programme
- National Qualifications Framework for the Republic of North Macedonia
- Objective-Module-Matrices
- Self-Assessment Report
- Audit-discussions

Preliminary assessment and analysis of the experts:

Content ant structure of the programmes

The curricula of both programmes under review are reviewed by the experts in order to identify whether the described learning objectives (see chapter 1.1) can be achieved by the available modules. Course descriptions as well as overviews and the objective-module-matrices matching the different learning objectives and the various module contents were provided for a thorough analysis.

The curricula of both programmes under review are designed for six semesters and offered as full-time study programmes. To complete each of the programmes, students must complete at least 180 ECTS credits. In its Self-Assessment Report, UACS describes the structure of both programmes as follows: "The curriculum content begins with fundamental courses aiming to offer common ground of knowledge in mathematics, theory of computation and algorithmics and structural programming and gradually builds up towards well shaped equilibrium between fundamental theoretical knowledge and technology exposure. The number of electives increases through the upper years allowing personalization of the specializations in the framework of overall competences structure keeping the ratio between knowledge, skills and abilities development. [The] Capstone project allowing the students to conclude the education with an exercise putting together the acquired knowledge, internship experience and ability to learn and act in previously not seen real-world type of problems and to produce an artefact according to the established standards in the field. […] The modules are organized with a well distributed proportion of theoretical and practical knowledge leading to building up towards the defined objectives. Out of the total of 180 ECTS allocated for the study program 30% of the credits are allocated to elective courses" (for detailed course overviews of both programmes, see Appendix).

During the on-site discussions, the experts argue with the programme coordinators about the elective courses. In detail, the experts were wondering, why there are already elective courses within in the first year of studies. In their opinion, the first study year might be too early for electives and could be used for other subject-specific mandatory courses which could then also be used to further differentiate both programmes from each other. The programme coordinators then explain that, according to national law, at least 10% of ECTS credits per year must be allocated to electives. Following the audit, the university also submits the relevant law as evidence. In addition, the university describes its approach to electives as follows: „Both Computer Science and Management Information Systems follow the structure of Electives distributed as one course of 6 ECTS credits in the first, third and fourth semester and two courses, each of 6 ECTS in second fifth and sixth semesters. The electives in the first year allow strengthening of students' skills for work with a computer (Computer Applications, Introduction to Multimedia) supplementary support for English language (English for specific purposes) or writing skills (Academic writing) and World language (German or Italian), they also offer a window to Computer Ethics and Responsibility and Business oriented courses (Introduction to Management and Business Module). The electives of the second and third year besides further professional courses in areas of relevant to the main course of study offer a choice in knowledge and skills in soft-skills areas like courses in Global Understanding and Intercultural Communication, Entrepreneurship and further Business Module as well as Macedonian language for foreign students." The experts agree with this explanation and approach and highlight the wide range of elective subjects available for both programmes as a positive feature. During the on-site discussion, the students as well emphasize that they value the high number and variety of electives.

For both programmes under review, the experts want to know how students are prepared for writing their final thesis and whether there are any relevant courses for this. They learn that this is largely done within the framework of projects in other courses and that there is also an "Academic Writing" course, which is, however, only an elective. The experts believe that it would make sense to include a compulsory module on scientific work in both curricula in order to raise the level, especially formatting- and methodology-wise, of the projects and theses (see criterion 2).

As already mentioned (see criterion 1.1), the experts are not convinced that the title, content and learning outcomes of the Bachelor's degree Management Information Systems are in line with each other. At present, they see too little content and corresponding learning outcomes in the areas of "business fundamentals" and "business informatics" to meet the expectations of the title. As already described, there is currently a strong focus on technical content, which also means that the learning outcomes differ too little from those of the Bachelor's degree in Computer Science. Therefore, the experts agree that the Bachelor

Management Information Systems does not cover the typical content of Information System programmes and is especially missing business-related contents as well as content on business informatics in a stricter sense. In the experts' opinion, for example, courses as "operating systems" or "virtualisation" shouldn't be mandatory courses in such a programme. These courses for example could be replaced with fully business-oriented courses.

During the discussions, the programme coordinators admit that they have focused primarily on the technical side and use courses that would also be used in the Bachelor of Computer Science programme. However, they mention that another faculty at UACS also offers courses in economics/business and that they will contact the relevant faculty in order to be able to offer more content from this area in the future. The experts would support this approach.

Thus, the experts note that the university must decide what direction the programme should take. If it is to remain an Information Systems/Business Informatics programme, then the proportion of business-related courses and information system courses must both be increased (at least 15% of curriculum must be related to Business Fundamentals & at least 25% for Information Systems).

Overall, the experts are satisfied with the curriculum of the Bachelor's degree programme Computer Science. They see that the programme is well structured and that the modules build on each other in a reasonable way, enabling the students to effectively reach the learning outcomes. Regarding the Bachelor's degree programme Management Information Systems, the experts conclude that a coherent and functional curriculum has been developed. However, it does not correspond to the content associated with the title. The university must therefore consider the orientation of the programme and then ensure that the title, content and learning outcomes are in line with each other.

Internships:

As there was some brief uncertainty about the structure of the internship during the audit, the university subsequently submitted an additional description. In this, it explains the approach of the internship as follows: "As Traditionally UACS requires a minimum of 90 days of student practice – a total amount during the three-year study program in companies or organizations formalized under 'Internship'. The Internship activity is weighted by correspondent ECTS value in the study curricula accredited by the National body for high education accreditation. For the programs of Computer Science and Management Information Systems there are two points of validation of an internship: After the first year of study noted in the curriculum with 4 ECTS and before graduation with 2 ECTS values. In practice

this means that during the first and second year of studies a student should confirm realization of a 60-day internship (which will be than noted as completed 4 ECTS value internship) and as a requirement to proceed with public defense of the final Capstone project – a student should show that an internship of 30 days has been accomplished.

There are three ways in which a student gets in contact with an enterprise or organization in order to realize the internship:

1) Companies from the UACS Business Council are announcing internship opportunities to the UACS Career Centre after which their offer is posted on UACS website in the section Jobs and Internships;
2) Periodically or by a student request for internship, the Career Centre sends the list of companies members of the Business Council (particularly the cluster of IT companies) and the student engages in a communication with the company and
3) If a student proposes a company or organization for realizing the internship which contact was not previously communicated by the Career Centre, the Centre considers the proposal and after approval drafts an internship contract and proceeds with formalizing the internship.

Each internship is administrated by Internship initiation document ('Upatnica' in Macedonian, Internship confirmation document (Report on accomplished internship) and a contract for internship (standardized in the cases of companies members of Business Council, or specific in the cases of internships under 3.). The internship obligation is not linked or related to the realization of Capstone projects. Capstone project is an individual peace of work accomplished during the last semester of studies under mentorship of UACS professor, and possibly co-mentored by external collaborator."

Overall, the experts are convinced by the approach of integrating internships into both curricula. The experts note that the university has a large network of companies through which students are provided with the relevant contacts, positions and topics, and that there is clearly regulated support from both the university and the companies. The students also confirm this and report generally positive experiences during their internships. The experts are therefore convinced that the internship is profitably integrated into the programmes. However, they note that the university should review the credit allocation to reflect the actual workload (see criterion 1.5).

Mobility

As stated in the Self-Assessment report, "[the] structural design of the degree programs at UACS includes clearly defined "mobility windows," particularly in the second and third

years of study. These windows allow students to participate in exchange programs, internships, or study abroad opportunities without disrupting their academic progression. The ECTS credit system and alignment with the Bologna Process facilitate the recognition of academic work completed at partner institutions. […] The UACS Office of International Programs is pivotal in facilitating student mobility. It administers and oversees all study abroad programs, ensuring compliance with UACS policies, Macedonian Ministry of Education, and accrediting agencies standards." UACS offers it students direct exchange programmes where students pay tuition at UACS while studying abroad at partner institutions, tuition-based exchange programmes, where students pay tuition at the host university and are responsible for associated fees, and Erasmus+ mobility programmes. In addition, there are also "joint multimedia classes [enabling] participation in innovative and collaborative learning environments without additional tuition costs", short summer courses and "Non-University Partner Exchanges." The university provides the following numbers regarding (outgoing) mobility in its Self-Assessment report:

Mobilities	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024
Students	18	8	22	14	10
Staff	2	5	3	2	3
Teaching Staff	2	1	2	2	2

The experts acknowledge that the university is making great efforts to further promote the internationalisation of the institution and to offer students and staff a wide range of opportunities. The experts would like to highlight the positive efforts of the International Office and the excellent support provided for existing programmes and exchanges. The experts also note that the students on site have a high level of English, so they are well prepared to study abroad. In the on-site discussions, the students only indicate that they would like to receive (even) more information about the existing mobility opportunities, especially with regard to possible destinations and different durations. Therefore, the experts recommended to provide the students with more information regarding the existing mobility opportunities.

Periodic Review of the Curriculum

UACS states in its Self-Assessment report that "[due] to the national regulations for Curriculum accreditation the reviews of the curriculum are limited only to improvements of the module content and delivery modalities. During validity of the national accreditation there

is no possibility to amend the accredited curriculum in any way. The structure, the elective modules, the titles and the general description of the modules (forms P3 in the accreditation) are fixed at the moment of accreditation. If any change is to be made a completely new procedure for curriculum accreditation should be undertaken. Thus, the review of the curriculum and the success of realization is reduced to module content improvements, technology considerations for software related modules, and the examination modalities. An example of such adjustments is the measures that were taken after apparition of ChatGPT type of tools and systems. Namely, we have adopted a UACS wide policy considering the AI based generative tools that was communicated to all staff with an obligation to update each module syllabus with the named statement. Further on, on SCSIT level we have recommended adjustments of the module evaluation components in a way that no task (narrative, analytical or programming) planned for individual (and home) work is to be accepted without supplementary evaluation steps (like oral presentation and defence and similar). We have also suggested that the percentage repartition of the evaluation components is modified accordingly to reflect the availability of such generative tools. This was realized with immediate response and validity from the first upcoming semester in the academic 2024."

The experts note that national regulations limit the university's ability to adapt its programmes within an accreditation period. However, they acknowledge that the actual content of individual lectures is regularly reviewed and adapted to the latest developments within this period. This is consistent with the module descriptions provided and the feedback from students and lecturers. In addition, the experts note that internal and external stakeholders are involved in further development, and that the opinions of students and individual lecturers are also taken into account. However, as already stated in 1.1, the experts also note that industry should be more involved in the further development of the programmes. Therefore, the experts recommend to systematically include feedback from industry regarding the further development of the programmes, especially regarding learning objectives and content. Apart from that, the experts confirm that there are sufficient measures implemented to regularly review the programmes.

Criterion 1.4 Admission Requirements

Evidence:

- Self-Assessment Report
- Decision on Determining the Number of Students, Conditions, and Criteria for Ranking and Selection – UACS 2025/2026
- BYLAW: On integrated study rules for the first cycle of studies at the University American College Skopje – Skopje
- Webpage UACS
- Discussions during the audit

Preliminary assessment and analysis of the experts:
Regarding both Bachelor's degree programmes under review, UACS as defined binding admission criteria in its By-laws. As stated in the SAR, "[general] admission policies for undergraduate students are based on a set of objective criteria, in accordance with the Law on Higher Education in North Macedonia developed by the General Secretary Office, approved by the Rector's Board and University Senate". All information is published on the university's website as well as in programme brochures.

UACS defines the following specific admission criteria for both programmes under review also applying for foreign students:

- "Candidates who have passed the state or international matriculation are eligible to enroll in the first cycle of studies.
- The right to enroll in the first cycle of studies is also granted to candidates with a four-year secondary education degree according to the regulations that were in force before the introduction of the state matriculation exam (before the academic year 2007/2008), as well as candidates who completed their four-year secondary education in the academic year 2020/2021.
- Foreign citizens are enrolled in studies under the same conditions as the citizens of the Republic of North Macedonia and who, with the application, attach a decision on nostrification for completed secondary education, i.e., proof that a procedure for such nostrification has been initiated at the competent institutions.
- The University can also enroll candidates in higher years who are transfers from other higher education institutions, candidates who have completed university or higher education, students attending the Erasmus+ mobility program, as well as other student mobility programs, but within the framework of the total quota for student enrollment.

- If there are more candidates than envisaged in the call, their selection is made by ranking them according to their average grade score accomplished during their secondary education."

Students during the on-site discussions testify that they are informed in detail about the requirements and the necessary steps to apply for admission into the degree programmes under review.

Regarding the Bachelor in Computer Science, UACS has an intake capacity per cohort of max. 70 students, which is also reached in the recent years. For the Bachelor Management Information Systems, UACS defines a max. intake capacity of 30 students. However, since the semester 2023/24, only an average of seven students per cohort enrol in this programme.

In the experts' opinion, this is also due to the insufficient differentiation of the profile from the computer science program, which is also reflected in the content. Furthermore, during the various audit discussions, the experts learn that "information systems" is not (yet) particularly well known as a subject in North Macedonia; this applies both to industry, which does not yet have a corresponding demand for graduates in this field, and to students, who have only limited knowledge and awareness of this subject area.

In summary, the experts see evidence that UACS keeps track of its students' progress and achievements. In this way, an instrument is in place to monitor the performance records of students with various enrolment backgrounds. In their assessment, the experts find the admission rules to be binding, transparent, and based on UACS's written regulations. They confirm that the admission requirements support the students in achieving the intended learning outcomes. Regarding the credit transfer for students, adequate policies are in place.

Criterion 1.5 Workload and Credits

Evidence:

- Module descriptions
- Elaborates of both degree programmes
- Self-Assessment Report
- Discussions during the audit

Preliminary assessment and analysis of the experts:

For all its programmes, UACS applies the European Credit Transfer and Accumulation System (ECTS) as a workload-based credit point system. The workload includes all kind of

student activities within a module/course as contact hours distributed by lectures, auditory practical hours, laboratory work and self-study time. In both degree programmes under review, graduates must reach a total of 180 ECTS credits. UACS defines that "6 ECTS credits corresponds to 150 total hours" which means that one ECTS credit is equivalent to 25 total hours of work.

Regarding the assessment of the individual workload for each course, UACS states in its Self-Assessment Report that "[during] semester academic advising meetings between student representatives and academic advisors per year, the workload and the repartition of the load in hours is considered and upon identification of disproportions adjustments are planned both in communication with the lecturer during current semester, or as considerations for the next planning."

During the audit discussions, the experts want to know from the students how they assess the workload and whether they find the credits assigned per course to be appropriate. The students state that they are generally satisfied with the workload and its distribution over the semesters and that the credit allocations for the individual courses are also generally appropriate. This also corresponds with the general impression gained by the experts after reviewing the module descriptions. However, the experts note that there is no systematic workload assessment, for example, as part of course evaluations. Although there is regular communication between teachers and students, during which the workload is also discussed, the UACS does not systematically survey this. The experts acknowledge that the workload distribution and credit allocation appear to be mostly appropriate, but that a systematic workload survey needs to be carried out. In the experts' opinion, course evaluations would be the most suitable tool for this; a question could be added to the survey that also asks about the workload of the individual course. Furthermore, UACS should also reassess the workload and the assigned ECTS credits of the internship and the graduation project / final theses. In both cases, experts believe that too few credits are awarded in relation to the actual working hours. For example, a total of six ECTS credits are awarded for a total of 90 days of internship, whereby six credits are equivalent to 150 hours.

In summary, the experts can recognise from the workload information in the module descriptions and the audit discussions that the overall workload is appropriate and generally corresponds with the assigned ECTS credits. During the audit, the students emphasise that they consider the workload manageable and that it is possible to finish the degree programmes within the expected periods. However, the experts note that there are no systematic workload assessment and verification. Therefore, the experts are in favour of a corresponding requirement that UACS must verify the students' workload and ECTS credits assigned.

Criterion 1.6 Didactic and Teaching Methodology

Evidence:

- Module descriptions
- Elaborates of both degree programmes
- Self-Assessment Report
- Discussions during the audit

Preliminary assessment and analysis of the experts:

Various teaching and learning methods (including lectures, computer training and classroom and lab exercises, individual and group assignments, seminars and projects, etc.) have been implemented. Structured activities include tutorials, homework, assignments (reading or problem exercises) and practical activities. Group project assignments are given in some courses to develop students' skills in teamwork, communication, and leadership. The assignments and exercises should help students to develop their abilities with respect to critical thinking, written/oral communication, data acquisition, problem solving, and presentations. For full-time enrolled students, attendance in class is mandatory.

As UACS describes in its Self-Assessment Report, that it "uses the Learning Management System (LMS) Moodle with a dedicated personalized version for its own students and staff. Administered by UACS's IT Department, the Moodle platform represents a very important didactical support system widely used in each module of the program. Starting by the obligatory presence of the Syllabus, the Moodle page for each module contains a complete resource bank for the course, weekly presentations and supplementary material for each covered topic, links to supplementary reading and other resources and similar. The SCSIT staff uses largely the tools and facilities offered by the LMS especially for weekly short quizzes for in-class evaluation, short answers for interactive part of face to face teaching time, delivery boxes for assignments and similar."

Furthermore, UACS supports students in conducting independent scientific work. In its SAR, UACS describes that "[students] are supported and encouraged to undertake research activities outside the module's strict content and objectives, but in line with the area where the module belongs. We have examples of a student team authoring national conference student papers. The participation in the Conference and the presentation of the papers was financially supported by UACS."

During the audit, the experts want to know from the students how they feel about compulsory attendance and whether they would like to see (more) online teaching. The students say that they are generally positive about compulsory attendance and do not see it as a problem. However, they would find it very helpful if it were possible to participate in a

course online (in exceptional cases as illness) or if individual lectures were also accessible online. Students have mixed opinions about hybrid courses, but some would at least like to have access to recordings of lectures if they are unable to attend in person, for example due to illness. The experts understand the university's approach that teaching should take place in person and that these are not distance learning courses. However, they also recognize that the university (due to COVID-19) has sufficient experience with online and hybrid teaching and the creation of videos, so that it would be worth considering making content available to students remotely. Therefore, the experts recommend enabling students to participate in classes when they are not able to be on-site, e.g. through hybrid sessions or recorded classes.

In summary, the expert group considers the teaching methods and instruments to be suitable to support the students in achieving the intended learning outcomes. In addition, they confirm that the study concept of both programmes under review comprises a variety of teaching and learning forms as well as practical parts that are adapted to the respective subject culture and study format. It actively involves students in the design of teaching and learning processes. Moreover, they consider the support given to students to carry out independent research to be extraordinarily positive.

Final assessment of the experts after the comment of the Higher Education Institution regarding criterion 1:

The experts consider criterion 1 not to be fulfilled.

2. Exams: System, Concept and Organisation

Criterion 2 Exams: System, Concept and Organisation

Evidence:

- Module descriptions
- BYLAW: On integrated study rules for the first cycle of studies at the University American College Skopje – Skopje
- Elaborates of both degree programmes
- Exemplary exams, projects, and theses
- Self-Assessment Report
- Discussions during the audit

Preliminary assessment and analysis of the experts:

In its Self-Assessment Report, UACS describes the examination system and its approach as follows: "The system of examination follows the best practices of the American and European experiences in high-educational institutions. A strong emphasis is given on in-course evaluations like Attendance (obligatory) and Participation 10-15%, one Midterm examination (30-40% depending on the module) one Final (Second Term Exam 30-40%) and the rest is repatriated among various quizzes, assignments and other evaluation components. For each module they are specified and delivered to the students before the beginning of the semester and available during semester in the correspondent Moodle page of the module.

The overall grade achieved by the end of the semester is expressed in percentages and a minimum of 60% is required for a passing grade. The percentages are transformed in letter and coefficient grades according to the following:

- A: 96-100% and coefficient of 4.00
- A-: 90 - 95% and coefficient of 3.67
- B+: 87-89% and coefficient of 3.33
- B: 83-86% and coefficient of 3.00
- B-: 80 - 82% and coefficient of 2.67
- C+: 77-79% and coefficient of 2.33
- C: 73-76% and coefficient of 2.00
- C-: 70-72% and coefficient of 1.67
- D+: 67-69% and coefficient of 1.33
- D: 63-66% and coefficient of 1.00
- D-: 60-62% and coefficient of 0.67
- F: 0-59% and coefficient of 0.00

Although all grades starting from D- and above are considered as passing grades, there is a second requirement for graduation which is a GPA equal or greater than 1.67. On a semester basis the administration issues a warning to the students whose GPA is below the required one - so they know that they should improve their GPA or retake certain modules for attending the required level of GPA.

The Midterm and Final exams are held in a specific Exam - week during which students do not have other lectures, and which is determined by the Academic Calendar of the institution at the end of June for the next academic year and published on the web site of UACS.

Students that have not earned passing grade in a specific module are offered another examination term - now on the whole material of the course during the Make Up examination session held each February and June for the Fall and Spring semester modules respectively. Specific evaluation methods are clearly communicated with the students during the semester for the type of examination during the Make Up session. Often it includes 80% test or written examination and 20% project based work (from 2023 onwards with obligatory oral presentation / defence). At the end of the Academic year a supplementary Make Up session can be organized after analysis of the passing rate and the retention especially regarding prerequisite courses that follow in the curriculum."

The students confirm that these regulations are effective and properly managed, and experts agree that provisions for disability compensation, illness, and other exceptional circumstances are clearly established.

In both programmes under review, there is a final thesis in the last semester of study which is defined as a capstone project. In its Self-Assessment Report, UCAS explains that the idea behind introducing a capstone project "was to obtain a relevant, up to date, carefully balanced for end of undergraduate studies and still valid for entry level IT industry beginner pieces of work accompanied with a software artifact and a correspondent documentation." The experts view it positively that students are given the opportunity to write their final thesis in industry and see that this is also used regularly.

During the on-site visit, the experts had access to a selection of exams and final projects. They confirm that these represent an adequate level of knowledge as required by EQF-Level 6. The forms of exams are oriented in-line with the envisaged learning outcomes of the respective courses, and the workload is allocated in an acceptable way. Regarding the final thesis, respectively capstone projects, the experts conclude that their technical aspects and content are in line with EQF-6 level and address up-to-date topics. However, they recognize that the theses differ in the quality of the document regarding formatting, citations, and overall structure. Here, the experts would like to see more consistency and a uniform standard corresponding to a final thesis at EQF level 6. In the experts' opinion, this

could also argue in favour of introducing a dedicated course in academic writing (see also criterion 1.3). Above all, however, the experts recommend that the university provide students with a uniform template for writing their graduation work.

The experts conclude that the criteria regarding the examinations system, concept, and organization are fulfilled and that the examinations are suitable to verify whether the intended learning outcomes are achieved or not. However, they recommend to provide the students with a template for the graduation work.

Final assessment of the experts after the comment of the Higher Education Institution regarding criterion 2:

The experts consider criterion 2 to be fulfilled.

3. Resources

Criterion 3.1 Staff and Development

Evidence:

- Self-Assessment Report
- Staff handbook
- Employment Policy of the UACS
- Discussions during the audit

Preliminary assessment and analysis of the experts:

HR Resources

In both programmes under review, the main part of teaching is conducted by full-time lecturers from the School of Computer Science and Information Technology (SCSIT) of UACS. Furthermore, for modules in the are of business as well as for language modules, the programmes also rely on full-time lecturers from other schools of the UACS. In addition, "22 part-time external experts from the industry engaged in the teaching. Two visiting professors from foreign universities are also included in the teaching. There are also five external collaborators who are not involved in teaching but are only co-mentors to students in the preparation of their Capstone project (i.e., diploma thesis). […] All part-time engaged lecturers without academic titles have additional module conveyors from the full-time staff. The module conveyors are responsible for the quality of the module syllabus, evaluation components and grading. They have regular meetings with the team responsible for the module delivery as well as with the academic coordinator for the academic year in which

the module is offered. All experts from the practice are subject to submission of their candidature and CV to a Commission created by the SCSIT and which proposes their acceptance in position of experts from practice for teaching of a particular module. The process is approved by the Teaching and Scientific Council one semester before the semester of teaching. […] Before the beginning of each semester, UACS organizes Socialization and Training Seminar for the induction of the new faculty. The Seminar is considered as a precondition for starting the teaching process, and its aim is to prepare the new faculty members for the teaching process at UACS, to help them get familiar with the UACS culture, important information about the UACS Bylaws, learn the way of grading and evaluating, how to use the Moodle platform, and to exchange ideas and experiences with the other participants as well."

During the audit, the experts discuss the workload of the teaching staff with them. Teachers report that they teach between ten and twelve hours per semester on average, whereby they are normally not supposed to teach more than two courses per semester. The teachers report that, according to state law, they must also regularly produce a certain amount of research output and citations in order to be promoted, for example. According to the teachers, they still find time for this, but it would of course be desirable to reduce the teaching load somewhat in order to have more time for research. This especially applies to the application phase of a research project. As the teaching staff states during the audit, it is indeed possible to reduce teaching hours for the next semester if they are involved in a research project in this upcoming semester. However, during the application stage, it is not possible for teachers to reduce their teaching load. The teachers would wish that this would also be possible in this early stage of a project, as applying already takes a lot of time and the acceptance rate may be increased if teachers would already have more time for this. However, in general, the teachers are satisfied with the support from the university in terms of funding and administrative support and also mention that they can take part in international research projects or teach abroad within Erasmus projects. The experts support the teaching staff's wish for more research time, even though they understand that this is always linked to limited financial and human resources.

In summary, the experts emphasise the highly committed and motivated staff and the satisfaction of the students. They conclude that UACS has defined adequate measures for staff selection and that both programmes under review can be carried out effectively with the existing staff. However, they recommend enabling teaching staff to spend more time on research.

HR Development

UACS encourages the training of its academic staff to improve their didactic abilities and teaching methods. As stated in the Self-Assessment Report, UACS provides "opportunities for lecturers to enhance their subject-specific and didactic skills, through workshops, conferences, and training programs. Pair experienced lecturers with newer ones to provide guidance and support." The experts discuss the various opportunities available for personal skill development with the teaching staff members. The teachers express their general satisfaction with the internal qualification programme and willingness to improve their skills. However, the teachers would like to see the range of courses on offer expanded, especially with regard to courses on didactics and language courses. The teachers would particularly like to be able to take courses that lead to a certificate at the end; especially certificates that demonstrate language proficiency would be in high demand among teachers. The experts understand this and support this idea. Therefore, the experts recommend to provide the teaching staff with the opportunity to take part in further education regarding didactics, and language skills.

Criterion 3.2 Student Support and Student Services

Evidence:

- Self-Assessment Report
- Evaluation/survey results
- Discussions during the audit

Preliminary assessment and analysis of the experts:

During the on-site discussions with programme coordinators, lecturers, and particularly the students, the experts gain a thorough understanding of the available support services for students. As stated in the Self-Assessment Report, UACS provides both subject-specific academic counselling and general non-academic guidance: "Our Student Services include guidance from the Student Coordinator, Academic Advising, and resources like the UACS Tutoring Club and the Psychological Counseling Center. We also offer career support through the UACS Career Center, ensuring students receive the assistance needed to succeed during their studies and prepare for their professional futures. Through these services, we strive to create a welcoming, inclusive, and motivating environment for all students."

In summary, the experts positively note the good and trustful relationship between the students and the teaching staff. Enough resources are available to provide individual assistance, advice and support for all students. The support system helps the students achieve the intended learning outcomes and complete their studies successfully. The students, in general, have access to sufficient information about the programmes and are well-

informed about the services available. Furthermore, the students confirm during the on-site discussions that they feel valued and that any issues can be solved quickly in cooperation with teachers and the university. In the experts' opinion, he comprehensive support and advisory system as well as the good communication between students and the university is one of the strengths of UACS.

Criterion 3.3 Funds and equipment

Evidence:

- Self-Assessment Report
- On-site visit of participating institutes and laboratories
- Discussions during the audit

Preliminary assessment and analysis of the experts:

UACS provides basic funding and facilities for both programmes under review. It has adopted a financial program which "establishes funding priorities, including scientific research, the development of new study programs, and the promotion of international cooperation to expand into new markets and increase revenue." All facilities and equipment are regularly validated and calibrated. This includes evaluating, maintaining and improving the physical facilities and infrastructure of the university, such as teaching and learning facilities, laboratories, equipment, and tools, to meet the needs of education, research, and service.

In its Self-Assessment report, UACS provides the following list of premises at UACS:

N o.	**Type and purpose of space**	**Number**	**Number of seats**	**Surface m ^{2}**
1..	Amphitheatres and lecture halls	1 7	730	1417
2.	Laboratories	5	152	265
3.	Offices for employed teaching staff	20	56	427
4.	Offices and premises for non-teaching staff	10	42	260
5.	Premises for the work of the bodies of the higher education institution	2	14	93
6.	Student assembly work spaces	1	10	20,6

7.	Other common and multipurpose rooms: meeting rooms	2	20	44
8.	Library, reading room	1	16	70
9.	Hygiene and sanitation facilities	7		200
10.	Visitor reception areas	2		63
11.	Hall ways, warehouses, storage rooms , pantries, archives, elevators, stairs and more	18		690
Total				**3549,6 m2**

Furthermore, the university describes in its Self-Assessment report, that "[in] the last two years, UACS has invested in two fully equipped new laboratories with a total of 68 PCs. Additionally, the institution has upgraded its existing computer labs, classrooms, and amphitheatres with advanced technology, including brand-name DELL computers featuring high-performance specifications such as the latest-generation processors, high-capacity RAM, and SSD storage (I3 and I5 CPUs, 16Gb RAM memory and M2 SSD card). The network infrastructure is renewed and now supports 1GBps data transfer. We have installed 3 new servers for traffic control and data security."

The experts had a close look at the equipment used for practical training in the laboratories. The experts value the students' presentation of their practical work in the laboratories. They judge the facilities, including teaching labs, as adequate for teaching and confirm that they are well-equipped and contain everything necessary for the programmes' objectives. The experts find no severe bottlenecks due to missing equipment or infrastructure. The basic technical equipment for teaching students is available in sufficient numbers. In the discussion with the expert group, the students confirm that they are generally satisfied with the available equipment. Moreover, the teaching staff emphasise that from their point of view, the degree programmes receive sufficient funding for all teaching and learning activities. Students and teachers are also satisfied with the library and the literature, most of which is available digitally.

In summary, the expert group assesses that the available funds, the technical equipment, and the infrastructure (laboratories, library, seminar rooms, etc.) are well suited to the requirements for providing both study programmes under review.

Final assessment of the experts after the comment of the Higher Education Institution regarding criterion 3:

The experts consider criterion 3 to be fulfilled.

4. Transparency and Documentation

Criterion 4.1 Module Descriptions

Evidence:

- Module descriptions

Preliminary assessment and analysis of the experts:
The experts observe that the module descriptions of both degree programmes under review mostly contain the necessary information about the persons responsible for each module, the teaching language, the teaching methods, the workload, the credit points, the module objectives and intended learning outcomes, the content, the admission and examinations requirements and regulations, information on the required and recommended prerequisites for joining the module, calculation of the final grade, and the literature. However, they still see some inconsistencies, minor inaccuracies, and missing information.

First, the experts note that there is no module description for the internship module. This must be added for both programmes.

In addition, the experts note that the learning outcomes of the individual modules are not really formulated in an outcome- and competence-oriented manner. Here, the experts recommend using Bloom's taxonomy as a guide for the revision. Furthermore, the respective description of the graduation thesis/capstone project states that although six ECTS credits are assigned, this corresponds to 180 hours, which contradicts the programme's own definition of one ECTS credit equalling 25 hours. According to the programme coordinators, this is an error in the module handbook. In addition, some descriptions lack information on the grading system. Also, the description of the module “Data Structures and Algorithms” mentions the following: “In the second part, chargers, rows and trees are introduced”. According to information provided during the audit, this is also a translation error. Furthermore, the experts note that some of the literature is somewhat outdated and should be updated.

Summing up, the experts are of the opinion that the university has generally provided good and complete module descriptions overall. However, the module descriptions need to be reviewed, especially regarding learning outcomes, typing and translation errors, and

information on the grading system and literature. Also, UACS must provide a module description for the internship.

Criterion 4.2 Diploma and Diploma Supplement

Evidence:

- Exemplary Diploma Supplements
- Exemplary Diploma
- Exemplary Transcripts of Records
- Rulebook for Preparation and Issuance of Documents for Students

Preliminary assessment and analysis of the experts:
The experts confirm that the students of both degree programmes under review are awarded a Diploma and a Diploma Supplement upon graduation. The Diploma consists of a Diploma Certificate and a Transcript of Records. The Transcript of Records lists all the courses that the graduate has completed, the achieved credits, grades, and cumulative GPA. The Diploma Supplement contains all required and necessary information about the degree programmes.

Criterion 4.3 Relevant Rules

Evidence:

- Self-Assessment Report
- All relevant regulations as published on the university's website

Preliminary assessment and analysis of the experts:
The experts confirm that the rights and duties of both UACS and the students are clearly defined and binding. All rules and regulations are published on the university's website and hence available to all stakeholders. In addition, the students receive all relevant course material at the beginning of each semester.

However, the experts note that the university should publish more specific information about the individual degree programmes on its website. The website mainly contains a brochure for each programme with general information and an overview of the curriculum, but there is no description of the respective learning objectives, for example (see criterion 1.1).

Final assessment of the experts after the comment of the Higher Education Institution regarding criterion 4:

The experts consider criterion 4 not to be fulfilled.

5. Quality management: quality assessment and development

Criterion 5 Quality management: quality assessment and development

Evidence:

- Self-Assessment Report
- Policy for Quality Assurance
- Exemplary surveys and questionnaires
- Bylaw for student involvement in the process including the students in the process QA
- Policy for development of new curricula or study programs
- Policy to Ensure Adequate Working Conditions for Faculty Members
- Policy on Internationalization and Its measurement
- HR Policy
- Policy for Students with Disabilities and Special Needs
- Discussions during the audit

Preliminary assessment and analysis of the experts:

UACS aims to continuously assess, evaluate, control, maintain and improve key activities in accordance with the University's mission, vision and strategic goals. In its Self-Assessment report, UACS describes its quality management as follows: “The Policy for Quality Assurance (PQA), which establishes the set of guidelines that direct the University's actions towards quality objectives and specifies the strategies used to accomplish them, serves as the framework for all procedures pertaining to the Quality Assurance system at the university. University’s Quality Assurance Committee (QAC) is a body established by the Senate for Quality Management, with the following scope of activities: monitor and coordinate the implementation of the QA policy; prepare the Statutory QA report; monitor the environment, trends in QA, international and domestic experiences and brief to the Rector’s board and the Senate about the needed adjustments.” Within this framework, the UACS and SCSIT apply a range of measures to support the continuous development of its study programmes. These include regular curriculum reviews informed by feedback from students, faculty, alumni, and employers. However, as already stated, the experts are of the opinion that feedback from industry regarding the further development of the programmes could be included more systematically (see criterion 1.1).

Faculty development is supported through training opportunities, mentoring, and evaluation procedures involving student feedback, peer observation, and self-reflection. Student support services such as academic advising, tutoring, and career services complement these efforts. Additional mechanisms include external accreditation, and benchmarking against other institutions. The university states that infrastructure and teaching facilities such as laboratories, libraries, and digital learning tools are also regularly reviewed and further developed to support teaching and learning.

The so called “Internal Quality Assessment” (IQA) relies on “systematic data collection and analysis” including feedback from students, and faculty, and analysing so called “performance indicators” such as “student grades, graduation rates, time-to-degree, and employment outcomes.”

Students participate in quality assessment through general surveys, course evaluations, focus groups, and representation in relevant committees. According to the university, their feedback has contributed to changes in curriculum content, learning resources, and student support structures. This is also confirmed by students during the on-site discussions who emphasize that their feedback is valued and asked for. They also give an example of a change that was made due to students’ feedback. Furthermore, students confirm that they are represented in an internal quality circle where students’ feedback is discussed. In general, students have the feeling that the university is very eager to solve any issues quickly. However, during the on-site discussions, the experts want to know if students are also informed about the results of the surveys and course evaluations. The students deny this. They say that these are anonymous surveys and that the faculty keeps the results internal. Although the experts acknowledge that there is a good relationship between students and the university and that the university listens to student feedback, they note that the feedback loop for course evaluations is not closed. Measures should be taken to ensure that students are informed of the relevant results.

In summary, the experts are of the opinion that UACS’s quality management system, guided by internal and external feedback loops, involves students, alumni and industry stakeholders and ensures a comprehensive and continuous approach to programme improvement. However, they point out that UACS must close the feedback loop, especially regarding course evaluations.

Final assessment of the experts after the comment of the Higher Education Institution regarding criterion 5:

The experts consider criterion 5 not to be fulfilled.

D Additional Documents

Following the on-site visit and before receiving a first version of the accreditation report, the university already provides further information. UACS submitted the following additional and reviewed documents:

- Official template for the Transcript of Academic Records
- Exemplary Transcripts of Academic Records for each degree programme
- Reviewed exemplary Diploma Certificates for each degree programme
- Reviewed templates for the Diploma Supplements for each degree programme
- National Regulation regarding the mandatory percentage of electives per study year (Law for Higher Education of the Republic of North Macedonia Article 139)
- Additional information regarding the organization and structure of the internships

Summary: Expert recommendations

Taking into account the additional information given by UACS, the experts summarize their analysis and **final assessment** for the award of the seals as follows:

Degree Programme	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ba Computer Science	With requirements for one year	30.09.2031	Euro-Inf®	30.09.2031
Ba Management Information Systems	With requirements for one year	30.09.2031	Euro-Inf®	30.09.2031

Requirements

For both degree programmes

A 1. (ASIIN 1.1) Make the qualification objectives accessible for all relevant stakeholders and ensure that the stakeholders can refer to them.

A 2. (ASIIN 1.5) Systematically verify the students' workload and the credit assigned.

A 3. (ASIIN 4.1) Review and complete the module descriptions.

A 4. (ASIIN 5) The feedback loop must be closed.

For the Bachelor's degree programme Management Information Systems

A 5. (ASIIN 1.1, 1.2, 1.3) Ensure that the name of the degree programme, its intended learning outcomes and its content correspond with each other.

A 6. (ASIIN 1.3) If it is to remain an Information Systems/Business Informatics programme, then the proportion of business-related courses and information system courses must both be increased.

Recommendations

For all degree programmes

E 1. (ASIIN 1.1) It is recommended to include competencies regarding ethics, sustainability, application of AI technology, and digitalization in the overall learning outcomes.

E 2. (ASIIN 1.1, 1.3, 5) It is recommended to systematically include feedback from industry regarding the further development of the programmes.

E 3. (ASIIN 1.3) It is recommended to introduce a course on scientific work.

E 4. (ASIIN 1.3) It is recommended to provide the students with more information regarding the existing mobility opportunities.

E 5. (ASIIN 1.6) It is recommended to enable students to participate in classes when they are not able to be on-site, e.g. through hybrid sessions or recorded classes.

E 6. (ASIIN 2) It is recommended to provide the students with a template for the graduation work.

E 7. (ASIIN 3.1) It is recommended to provide the teaching staff with the opportunity to take part in further education regarding didactics and language competencies.

E 8. (ASIIN 3.1) It is recommended to enable teaching staff to spend more time on research.

E Comment of the Technical Committees

Technical Committee 04 – Informatics/Computer Science

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee follows the experts' assessment without any changes.

Assessment and analysis for the award of the Euro-Inf® Label:

The Technical Committee deems that the intended learning outcomes of the degree programme do comply with the Subject-Specific Criteria of the Technical Committee 04 – Informatics/Computer Science.

The Technical Committee 04 – Informatics/Computer Science recommends the award of the seals as follows:

Degree Programme	**ASIIN Seal**	**Maximum duration of accreditation**	**Subject-specific label**	**Maximum duration of accreditation**
Ba Computer Science	With requirements for one year	30.09.2031	Euro-Inf®	30.09.2031

Technical Committee 07 – Business Informatics/Information Systems

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee follows the experts' assessment without any changes.

Assessment and analysis for the award of the Euro-Inf® Label:

The Technical Committee deems that the intended learning outcomes of the degree programmes do comply with the Subject-Specific Criteria of the Technical Committee 04 – Informatics/Computer Science.

The Technical Committee 07 – Business Informatics/Information Systems recommends the award of the seals as follows:

Degree Programme	**ASIIN Seal**	**Maximum duration of accreditation**	**Subject-specific label**	**Maximum duration of accreditation**
Ba Management Information Systems	With requirements for one year	30.09.2031	Euro-Inf®	30.09.2031

F Decision of the Accreditation Commission (12.12.2025)

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

The Accreditation Commission discusses the procedure and makes editorial changes to requirements A 3 and A 4 to bring them into line with standard wording. Otherwise, the Accreditation Commission follows the assessment of the experts and the technical committees without any further changes.

Assessment and analysis for the award of the Euro-Inf® Label:

The Accreditation Commission deems that the intended learning outcomes of the degree programmes do comply with the Subject-Specific Criteria of the Technical Committee 04 – Informatics/Computer Science.

The Accreditation Commission decides to award the following seals:

Degree Programme	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ba Computer Science	With requirements for one year	30.09.2031	Euro-Inf®	30.09.2031
Ba Management Information Systems	With requirements for one year	30.09.2031	Euro-Inf®	30.09.2031

Requirements

For both degree programmes

A 1. (ASIIN 1.1) Make the qualification objectives accessible for all relevant stakeholders and ensure that the stakeholders can refer to them.

A 2. (ASIIN 1.5) Systematically verify the students' workload and the credit assigned.

A 3. (ASIIN 4.1) Revise and complete the module descriptions.

A 4. (ASIIN 5) Close the feedback loop in order to ensure that the students are informed about the survey results.

For the Bachelor's degree programme Management Information Systems

A 5. (ASIIN 1.1, 1.2, 1.3) Ensure that the name of the degree programme, its intended learning outcomes and its content correspond with each other.

A 6. (ASIIN 1.3) If it is to remain an Information Systems/Business Informatics programme, then the proportion of business-related courses and information system courses must both be increased.

Recommendations

For all degree programmes

E 1. (ASIIN 1.1) It is recommended to include competencies regarding ethics, sustainability, application of AI technology, and digitalization in the overall learning outcomes.

E 2. (ASIIN 1.1, 1.3, 5) It is recommended to systematically include feedback from industry regarding the further development of the programmes.

E 3. (ASIIN 1.3) It is recommended to introduce a course on scientific work.

E 4. (ASIIN 1.3) It is recommended to provide the students with more information regarding the existing mobility opportunities.

E 5. (ASIIN 1.6) It is recommended to enable students to participate in classes when they are not able to be on-site, e.g. through hybrid sessions or recorded classes.

E 6. (ASIIN 2) It is recommended to provide the students with a template for the graduation work.

E 7. (ASIIN 3.1) It is recommended to provide the teaching staff with the opportunity to take part in further education regarding didactics and language competencies.

E 8. (ASIIN 3.1) It is recommended to enable teaching staff to spend more time on research.

Appendix: Programme Learning Outcomes and Curricula

According to the elaborate the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor's degree programme Computer Science:

Computer Science - Undergraduate program 180 ECTS Objectives and Learning Outcomes (Elaborate CS Section 3b)	
Descriptor Type	**DESCRIPTION**
KNOWLEDGE AND UNDERSTANDING	Possesses knowledge and understanding of the basic areas of computer systems and sciences, architecture and operating systems, as well as computer system programming in all phases of creating software products and relevant modern technologies. It also has an understanding of basic related areas such as databases, computer networks as well as advanced computing techniques through optional study of the basics of data science, artificial intelligence, etc.
APPLICATION OF KNOWLEDGE AND UNDERSTANDING	Can apply acquired knowledge especially for programming and participate in professional development of software and information systems in different environments such as mobile and hybrid applications, web and cloud applications and based on advanced solutions and standards appropriate to the field of study.
JUDGEMENT ABILITY	Able to assess and evaluate appropriate real-world problems related to computer science in order to analyze and specify appropriate software solutions in various development and programming environments. Can evaluate and participate in the evaluation of computer systems and software solutions and appropriate working environments of informatics and its applications.
COMMUNICATION SKILLS	Has abilities for professional written and oral communication about problems, solutions and projects in the field of Computer Sciences as well as correctly documenting the appropriate stages of application development at a level appropriate for the degree of education.
STUDY SKILLS	Able to use appropriate professional literature in the field of computer sciences, to identify new sources of information and knowledge, and to organize and undertake activities for acquiring the same in an independent and professional manner.

The following **curriculum** is presented:

No.	Course code	Course title	Semester	Weekly load of classes		ECTS
				Lectures	Exercises	
FIRST YEAR						
1	CSCI 1091	Fundamentals of Programming	First	2	2	6
2	MATH 1411	Mathematics	First	2	2	6
3	CSCI 1141	Computer Systems	First	3	1	6
4	CSCI 1011	Introduction to Computing and Algorithms	First	3	1	6
5		***Elective course***	First	3	1	6
6	CSCI 1131	Object Programming	Second	2	2	6
7	MATH 1601	Calculus	Second	2	2	6
8	MACL 1109	Macedonian language*	Second	2	1	2
9		***Elective course***	Second	3	1	6
10		***Elective course***	Second	3	1	6
		Internship				4
Total hours (lectures/exercises) and ECTS for the year				**25**	**14**	**60**

No.	Course code	Course title	Semester	Weekly load of classes		ECTS
				Lectures	Exercises	
SECOND YEAR						
1	CSCI 2431	Programming Languages	Third	2	2	6
2	CSCI 2331	Data Structures and Algorithms	Third	2	2	6
3	CSCI 2501	Computer Networks	Third	2	2	6
4	CSCI 2421	Operating Systems	Third	2	2	6
5		***Elective course***	Third	3	1	6
6	CSCI 2341	Software Engineering	Fourth	2	2	6

7	CSCI 2451	Human Computer Interface Programming	Fourth	2	2	6
8	CSCI 2511	Databases 1	Fourth	2	2	6
9	MATH 2601	Discrete Mathematics and its Applications	Fourth	3	1	6
10		***Elective course***	Fourth	3	1	6
Total hours (lectures/exercises) and ECTS for the year				**23**	**17**	**60**

No.	Course code	Course title	Semester	Weekly load of classes		ECTS
				Lectures	Exercises	
THIRD YEAR						
1	CSCI 3801	Architecture and Design of Software Systems	Fifth	2	2	6
2	CSCI 3701	Internet Programming	Fifth	2	2	6
3	CSCI 3711	Introduction to Virtualization and Container Systems	Fifth	3	1	6
4		***Elective course***	Fifth	3	1	6
5		***Elective course***	Fifth	3	1	6
6	CSCI 3111	Internet Services	Sixth	3	1	6
7	CSCI 3811	Introduction to Artificial Intelligence	Sixth	3	1	6
8		***Elective course***	Sixth	3	1	6
9		***Elective course***	Sixth	3	1	6
10	DIPL 3001	Graduation Thesis/ Capstone Project	Sixth	1	3	4
11		Internship				2
Total hours (lectures/exercises) and ECTS for the year				**26**	**14**	**60**

According to the elaborate the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor's degree programme Management Information Systems:

Management Information Systems - Undergraduate program 180 ECTS Objectives and Learning Outcomes (Elaborate MIS Section 3b)	
Descriptor type	**Description**
KNOWLEDGE AND UNDERSTANDING	Possesses knowledge and understanding of the placement of Information Systems in organizations, of the mutual relations between organizational placement and information systems, especially for Management of Information Systems. Knows and understands the processes of analysis of needs and functionalities, their specification, design and projecting, appropriate implementation and programming as well as project management and maintenance.
APPLICATION OF KNOWLEDGE AND UNDERSTANDING	Has an understanding in areas of the wider environment of information systems such as databases, computer networks, computer architectures, operating systems and has the opportunity to acquire knowledge and understanding in other related areas through optional subjects.
JUDGEMENT ABILITY	Can apply the acquired knowledge especially for participation in designing, implementing and maintaining information systems in different environments according to pre-identified needs, functionalities and required degree of integration.
COMMUNICATION SKILLS	Is able to assess and evaluate appropriate real organizational environments and prerequisites in order to analyze and specify appropriate software solutions for the implementation of Information Systems Management. Can assess and participate in the assessment of solutions in the field of Information Systems Management, and their particular ethical, infrastructural, user and security aspects.
STUDY SKILLS	Has skills for professional written and oral communication about problems, solutions and projects in the field of Information Systems Management as wellas proper documentation of related phases and areas directly related to them at a level appropriate for the degree of education.

The following **curriculum** is presented:

No.	Course code	Course title	Semester	Weekly load of classes		ECTS
				Lectures	Exercises	
FIRST YEAR						
1	CSCI 1091	Fundamentals of Programming	First	2	2	6
2	MATH 1411	Mathematics	First	2	2	6
3	CSCI 1141	Computer Systems	First	3	1	6

4	CSCI 1011	Introduction to Computing and Algorithms	First	3	1	6
5		***Elective course***	First	3	1	6
6	CSCI 1131	Object Programming	Second	2	2	6
7	MATH 1601	Calculus	Second	2	2	6
8	MACL 1109	Macedonian language*	Second	2	2	2
9		***Elective course***	Second	3	1	6
10		***Elective course***	Second	3	1	6
		Internship				4
Total hours (lectures/exercises) and ECTS for the year				**25**	**15**	**60**

No.	Course code	Course title	Semester	Weekly load of classes		ECTS
				Lectures	Exercises	
SECOND YEAR						
1	CSCI 2311	Introduction to Data Science	Third	3	1	6
2	MNGT 2421	E-Business and Innovation	Third	2	2	6
3	CSCI 2551	Introduction to Cybersecurity	Third	2	2	6
4	CSCI 2421	Operating Systems	Third	2	2	6
5		***Elective course***	Third	3	1	6
6	CSCI 2341	Software Engineering	Fourth	2	2	6
7	CSCI 2241	Introduction to Information Systems Project Management	Fourth	3	1	6
8	CSCI 2511	Databases 1	Fourth	2	2	6
9	CSCI 2561	Software requirements analysis	Fourth	3	1	6
10		***Elective course***	Fourth	3	1	6
Total hours (lectures/exercises) and ECTS for the year				**24**	**16**	**60**

No.	Course code	Course title	Semester	Weekly load of classes	ECTS

				Lectures	Exrcises	
THIRD YEAR						
1	CSCI 3401	Data Security	Fifth	2	2	6
2	CSCI 3211	Information Systems	Fifth	3	1	6
3	CSCI 3711	Introduction to Virtualization and Container Systems	Fifth	3	1	6
4		***Elective course***	Fifth	3	1	6
5		***Elective course***	Fifth	3	1	6
6	CSCI 3051	Management of Information systems	Sixth	3	1	6
7	CSCI 3061	Information systems Design	Sixth	3	1	6
8		***Elective course***	Sixth	3	1	6
9		***Elective course***	Sixth	3	1	6
10	DIPL 3001	Graduation Thesis/ Capstone Project	Sixth	1	3	4
11		Internship				2
Total hours (lectures/exercises) and ECTS for the year				**27**	**13**	**60**