



ASIIN Seal & Euro-Inf[®] Label

Accreditation Report

Bachelor's Degree Programs

Computer Science

Information System

Health Information System

Provided by

Almaarefa University

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A About the Accreditation Process

Name of the degree program (in original language)	(Official) English translation of the name	Labels ap- plied for ¹	Previous accredi- tation (issuing agency, validity)	Involved Technical Commit- tees (TC) ²
بكالوريوس علوم الحاسب	Ba Computer Science	Euro-Inf® Label	/	04
بكالوريوس نظم المعلومات	Ba Information System	Euro-Inf® Label	/	07
بكالوريوس في نظم المعلومات الصحية	Ba Health Information System	Euro-Inf® Label	/	04, 07
Date of the contract: 08.07.2020 Submission of the final version of the self-assessment report: 13.02.2021 Date of the onsite visit: 23.-25.03.2021 Online				
Peer panel: Prof. Dr. Bettina Harriehausen-Mühlbauer, University of Applied Sciences Darmstadt Prof. Dr. Susanne Strahringer, Technical University Dresden Prof. Dr. Rainer Herpers, University of Applied Sciences Bonn-Rhein-Sieg Dr. Andreas Koop, BFSTS GmbH Julian Beier, Heidelberg University				
Representative of the ASIIN headquarter: Sophie Schulz				
Responsible decision-making committee: Accreditation Commission				

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; TC 07 - Business Informatics/Information Systems

<p>Criteria used:</p> <p>European Standards and Guidelines as of 10.05.2015</p> <p>ASIIN General Criteria as of 04.12.2014</p> <p>Subject-Specific Criteria of Technical Committee 04 – Informatics/Computer Science as of 29.03.2018</p> <p>Subject-Specific Criteria of Technical Committee 07 – Business Informatics/Information Systems as of 08.12.2017</p>	
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B Characteristics of the Degree Programs

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
بكالوريوس علوم الحاسب	Bachelor of Science in Computer Science	/	6	Full time	/	8 semesters	240 ECTS	Fall semester
بكالوريوس نظم المعلومات	Bachelor of Science in Information System	/	6	Full time	/	8 semesters	240 ECTS	Fall semester
نظم في بكالوريوس الصحية المعلومات	Bachelor of Science in Health Information System	/	6	Full time	/	8 semesters	240 ECTS	Fall semester

For the Bachelor's degree program Computer Science, the institution has presented the following profile on its website:

Computer science grew out of the mathematics and electrical engineering disciplines. It involves the design and development of all types of software from operating systems and phone applications to interactive games and other forms of interactive technology. A Computer Science graduate must have a strong background in mathematics and creative problem solving. Basically, Computer Science students study what makes computers work and how they process data. The strength of Computer Sciences graduates lies in the ability to solve problems of efficiency and overall performance of applications from a machine perspective, and an overall technical orientation to problem-solving. Below are just a few of the many topics a Computer Science student can expect to study:

- Computer programming
- Computer Graphics
- Computer Networks

³ EQF = The European Qualifications Framework for lifelong learning

B Characteristics of the Degree Programs

- Computer algorithms: analysis and design
- Computer Organization and Architecture
- Data Structures
- Data Base System Concepts
- Operating systems
- Software Engineering

The computer science program focuses heavily on the study of programming (such as Java), data structures, and operating systems. As a result, many Computer Science graduates pursue careers in programming and software development. Other job titles may include:

- Systems Analyst
- Programming Engineer
- Database Administrator (DBA)
- Project Manager
- Network Administrator

For the Bachelor's degree program Information System, the institution has presented the following profile on its website:

An information system is a different field altogether, focusing on how data is gathered, stored, and transformed into information. Information System professionals are responsible for setting up information systems at a given organization. They provide technical support and help integrate proven security solutions into complex information systems as well as integrating technology into commerce in what is known now as electronic commerce. This area is often known as Information Systems (IS) or Computer Information Systems (CIS). Instead of learning just how technology works, IS students also learn to ask what type of technology should be used to solve a business problem. An IS student can expect to study the following topics:

- Computer Programming
- IS Analysis and Design
- Database Systems Development
- IS project Management

B Characteristics of the Degree Programs

- IS strategy and Management

An IS student can also expect to take a few business classes as well as upper-level computer science courses. Graduates are expected to achieve competency in problem-solving, systems development, and data communications. As a result, many IS graduates pursue careers as system analysts and desk specialists. Other job titles may include:

- Systems/Databases Analyst
- Systems Designer
- Systems/Applications Developer
- Database Administrator (DBA)
- E-Commerce Systems Analyst

For the Bachelor's degree program Health Information System, the institution has presented the following profile on its website:

The health information systems program is an interdisciplinary profession that is based on computing and public health disciplines. This profession specifically focuses on fundamental and advanced computing technologies that serve in managing and processing health data in a way that assists the health care providers in serving the patients in a safe and efficient way. Such a program prepares students to be instructed into the highest level of certified and licensed health informatics. The program will prepare students to become qualified health information technologists ready to work in general hospital settings.

The scope of preparation and practice of the Health Information System (HIS) program enables the graduate to be able to compete with the graduates of other public and private universities in attaining challenging positions in both government and private healthcare providers' agencies. HIS graduates pursue careers as system analysts and desk specialists. Other job titles may include:

- Health Informatics specialist
- Health Systems/Databases Analyst
- Health Systems Designer
- Health Systems/Applications Developer
- Health Database Administrator (DBA)
- E-Health Systems Analyst

C Peer Report for the ASIIN Seal⁴

1. The Degree Program: Concept, content & implementation

Criterion 1.1 Objectives and learning outcomes of a degree program (intended qualifications profile)

Evidence:

- Self-assessment report
- Discussions during the online visit
- PLO matrices

Preliminary assessment and analysis of the peers:

Almaarefa University is a private Higher Education Institution (HEI) that was founded ten years ago. The Computer Science and Information Systems programs started with the foundation of the university, while the Health Information System program was only introduced in 2017. Almaarefa University comprises one shared campus where male and female students mostly learn together.

For all three study programs, the university presents a detailed description of general program goals in the self-assessment report (SAR). The peers approve that for each program a detailed presentation of learning outcomes and graduates' attributes is given in the SAR in combination with learning outcome matrices matching the described learning outcomes with the respective modules of the programs.

At the end of their studies, graduates of the Computer Science program should have a broad overview of basic computer science knowledge and should have acquired basic knowledge in networks, computer security, algorithms, databases, distributed systems, and computer graphics. Graduates shall be fluent in at least one programming language, be able to design, implement, and evaluate a computer-based system, process, component, or program, and demonstrate their ability to use current techniques, skills, and tools necessary for computing practice.

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.

Graduates of the Information Systems program should have a fundamental understanding of the principles and methods of information technology in relation to business. In this regard, they should have gained basic knowledge in programming, database administration, network management, project management, enterprise information management, E-commerce, and information systems strategic planning. Graduates shall be fluent in at least one programming language, be able to design, implement, and evaluate a computer-based system, process, component, or program, and demonstrate their ability to use current techniques, skills, and tools necessary for computing practice.

Graduates of the Health Information System program shall be able to demonstrate an understanding of how digital data, information and knowledge are generated and managed for clinical care, biomedical research, public health, and health policy and planning. Graduates are expected to communicate intelligently about the uses of core health and biomedical informatics concepts, tools, and methods. Moreover, they should be capable of critically evaluating approaches to information systems and information technology in contemporary healthcare.

In addition to the professional skills, the graduates of all three programs shall be capable to work effectively in diverse teams, communicate and collaborate with individuals and in groups, and possess an awareness of the social and ethical implications of their actions. After a successful conclusion of their studies, students will be able to continue their education in a Master's program or to work professionally in the respective field.

The peers agree that all three programs adequately reflect EQF level 6 for Bachelor's programs. The objectives and learning outcomes of the degree programs are described in a brief and concise way. They are well-anchored, binding and easily accessible to all stakeholders. However, the peers note that the educational objectives and program learning outcomes of the computer science program and those of the information systems program are more or less identical. Since the contents, main skills acquired, and future professional fields clearly differ between the two programs, their objectives and learning outcomes must be differentiated as well, clearly reflecting the subject-specific and professional classification of the qualifications gained in the degree programs. The peers learn that the program coordinators are well aware of this issue and noticed the similarities themselves, in particular during the national accreditation process. They understand that the objectives and outcomes must be modified in order to make the difference between the two programs clear to all stakeholders and, in particular, to potential students.

Criterion 1.2 Name of the degree program

Evidence:

- Self-assessment report
- Discussions during the online visit

Preliminary assessment and analysis of the peers:

The expert panel considers the names of the study programs to be adequately reflecting the respective aims, learning outcomes, and curricula. As a side note, they point out that the name of the Information System and Health Information System programs should use the plural form, i.e., Systems, as both include many different systems instead of just one.

Criterion 1.3 Curriculum

Evidence:

- Self-assessment report
- PLO matrices
- Discussions during the online visit

Preliminary assessment and analysis of the peers:

The curricula of all study programs under consideration are reviewed by the panel in order to identify whether the described learning objectives can be achieved by the available modules. Course descriptions as well as matrices matching the general learning objectives and the module contents were provided for a detailed analysis. The discussions during the online visit reveal that the current curricula are in a constant revision process and that several modifications have already been made in recent years.

All three programs comprise four years of studies in total. The first year is a so-called preparatory year that all students have to take before the beginning of their specific Bachelor's program. The integration of this preparation period is a legal requirement by the Saudi ministry of education that all universities in the Kingdom have to follow. In these two semesters, students are generally prepared for academic life and complete general courses in which they acquire basic knowledge in natural sciences, math, English as well as Arabic and Islamic culture. Only after this year do the real academic programs start. The second, third and fourth year of the studies thus comprise all the technical and program-specific modules. A detailed overview of the curricula can be found in the appendix of this document.

All in all, the peers have a very good impression of the curricula of all three programs. By thoroughly analyzing the module descriptions and following the discussions during the

online visit, the peers state that the three programs are coherent, well-structured and cover the essential topics in the respective field. The individual courses/modules build upon and complement each other in a meaningful, appropriate way. The peers welcome that all three programs touch upon cutting-edge topics and include the relevant ethical and societal issues in different courses. The peers regret the fact that there are no electives included in the curricula. With regards to the Information System program, the peers discuss in detail whether, how, and where the relevant aspects of business process modeling are included in the curriculum, as they miss a specific, individual course focusing explicitly on this issue and, moreover, cannot see in what other courses this might be covered. Some of the staff members ensure that aspects of business process modeling are definitely integrated in some of the business modules. However, they are not able to explain exactly where and to what extent it is discussed. As business processes modeling with languages such as the BPMN constitutes a core element within information systems and business informatics, the peers strongly recommend integrating it in the curriculum of the program, either as a new, individual module or by incorporating it, where possible, in existing modules and clearly referring to it in the module descriptions. With regards to the Health Information System program, the peers discuss with the program coordinators the extent to which topics of industry and international standards (besides the medical coding), i.e. HL7, DICOM, CDISC and ICD-10/ICD-11 and a wider use of medical open source software are covered in the curriculum, as they could not find any information in the course descriptions. The discussions reveal that these issues are not so much integrated in the courses so far. However, since the international standards are of great importance to those who would like to work in the field later, in particular when it comes to working with and developing medical and clinical software, the peers encourage the program coordinators to further include the relevant aspects of international standards in the curriculum.

In all three programs, students have to complete a practical training of 50 working days in year 4. The aim of the practical training is to provide the students with a sound foundation of theoretical and practical hands-on knowledge and practical experience in the field of their studies before actually starting a real job. During the practical phase, students shall get the chance to apply the knowledge and skills they have learned throughout their studies in order to solve real-life problems, integrate themselves in the real-world work environment, observe ethical behavior through their work, and understand various realistic constraints that may occur in their future professional career. While the peers are generally in favor of integrating such practical components in bachelor's programs, as they believe that the students will gain valuable experience for their upcoming professional life, they note that no credit points are allocated for the practical training, although the workload during this period will be particularly high due to the fact that the students have to write a progress

report next to working full-time and eventually have to present this to their peers. The program coordinators argue that the practical training is not credited because it takes place outside of the campus. This is, however, not acceptable for the peers as the practical training constitutes a compulsory component of each study program that all students have to complete. Despite the fact that it takes place off-campus, it is an integral part of the studies, combining theoretical knowledge and practical application, that is of great importance for the students' development and academic success. Moreover, completing the practical training means a great deal of work and effort for all students (and the supervisors as well) which is why the peers are convinced that it must be fully integrated in the curriculum, thus being credited and in this way being equally weighted with all other modules.

The second major issue detected by the peers is the lack of a final or capstone project equivalent to a Bachelor thesis in all three programs. According to the ASIIN criteria and the opinion of the peers, each student should document his/her ability to work independently for some time on a research project, analyze scientific literature and present the results of this work in written form. At the time of the online visit, the programs include a final graduation project consisting of two parts, graduation project I and graduation project II, each of them comprising 7 ECTS. During the two projects, the students work in teams of at least three. The peers learn that during the two projects, a system is to be developed for a specific problem. The development lifecycle is split into two subprojects with the first project covering problem definition, requirements elicitation, system analysis and design, and the second project covering implementation, testing, and documentation. The teams regularly meet with their supervisor in order to discuss the findings. At the end of the second project, all teams have to write a report and eventually present their work to their counterparts and all team supervisors. There are two other, smaller presentations, one in the initial phase and another one halfway. Throughout the project, the students normally divide the work according to their own preferences but do the final parts, i.e., the report as well as the presentation together. The grading includes the three presentations as well as weekly assignments that students have to complete and that serve as individual components of the final report, whereby each student receives his/her own grade. Even though such a team project is generally considered very positive and valuable by the peers, they come to the conclusion that it is not comparable to a Bachelor thesis or capstone project equivalent to EQF level 6 with its current structure and learning outcomes. The aim of the final capstone project should primarily be the promotion of students' independent research instead of systems development and soft skills that students acquire through solving the initial problem and the intense teamwork. The peers would very much appreciate it if the program coordinators found a way of maintaining the group project on the one hand and manage to integrate a research-oriented capstone project or thesis at the same time.

The latter will be a central element in order to fully meet the European standard and ASIIN criteria.

Criterion 1.4 Admission requirements

Evidence:

- Self-assessment report
- Admission requirements Almaarefa University
- Discussions during the online visit

Preliminary assessment and analysis of the peers:

Admission regulations are based on national legislation as well as university rules. For admission to Almaarefa University, applicants need to have a secondary school certificate and pass the respective entrance exams. The applicants will be accepted in the three programs if they achieve at least 80 % in the secondary school certificate (GPA), 60 % in the General Aptitude Test (GAT) and a score of 950 in the Scholastic Assessment Test (SAT). Almaarefa University also imposes requirements on the English language proficiency of students, as the programs are taught fully in English except for the Arabic and Islamic courses. Obtaining the required English language skills requires a score of at least 30 in the Oxford test or its equivalents from other standard examinations (TOEFL IBT: 35, IELTS (academic): 3, STEP: 55). In order to be accepted, the applicants must also meet some behavioral requirements.

The peers agree that the admission policy is generally transparent and acceptable. They were initially very skeptical regarding the English language requirements, as a score of 35 in TOEFL IBT, for example, is very low, comparable to level A1 of the European framework. They discuss this issue in detail with both the program coordinators and the students and learn that it is rather difficult to find students/applicants who would meet higher English language standards before starting their studies. Thus, in order not to lose any students only because of insufficient language skills, they decided to keep the scores low. So far, the university has had exclusively positive experiences as it normally manages to improve the language skills accordingly and standardize the different levels of students' English skills. The students inform the peers that all applicants have to take an English test during the admission process. Applicants who do not pass this test will still be accepted but will have to study English for one year, i.e. during the preparatory year, before they are admitted to start their actual studies. In this case, students study four hours of English per day. The peers welcome that this way the university ensures that all students will have acquired the necessary and solid language skills in order to be able to complete their studies in English. However, the peers would very much appreciate if the university included this common

standard in the official admission requirements. It should also be clearly regulated what happens if the English skills are still insufficient after this year.

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

Objectives and learning outcomes

The peers acknowledge the university has revised the learning outcomes of the Information Systems program. However, while the wording has been slightly adjusted, the differentiation between the Information Systems and the Computer Science programs remains rather unclear. Moreover, the peers note that the revised learning outcomes no longer fit the specified job descriptions. These would have to be adjusted accordingly. Although a difference between the learning outcomes of the two programs is now visible, it is not well illustrated and the consequences of the revision have not been taken into account.

Name of the degree program

In its statement, the university points out that the names of the programs are correctly written in the student's transcripts and that there was a typo error in the Self-Assessment Report (SAR). The correct names of the programs are: Information Systems, Health Information Systems.

Electives (criterion 1.3)

The peers welcome that the program coordinators are planning to integrate more electives into the curricula and thankfully note the list of proposed elective courses for the upcoming year. They also take into account that one specific elective (Entrepreneurship) has already been added to the curricula. The peers propose to maintain the recommendation on electives until the proposed electives are actually offered to the students and to promote a long-term integration of electives within the curricula.

Practical training

The university explains that credits are not allocated for the practical training phase as this is uncommon in Saudi Arabia/at other Saudi universities as well. The university provides students with a certificate to acknowledge their achievements in the practical training. Moreover, they plan to add a COOP training comprising 9 ECTS in the upcoming review of the curriculum. The peers welcome the plans of integrating a credited COOP training. However, they stress that it is inevitable to credit the practical training in the current curricula as well.

Final project

The program coordinators are convinced that the two projects (project I and II) are equivalent to EQF level 6. The two phases of the project are not only designed to develop the students' soft skills, but also their scientific skills by giving them opportunities to conduct independent research activities. However, the peers stress that the two projects remain group projects and that it remains unclear how the individual performance of each student/group member can and will be evaluated, as the evaluation sheets provided in the project handbook do not differentiate between the students in a group. Therefore, the university must clearly demonstrate how the individual assessment of the students is ensured, i.e. how one can identify their individual contribution. Otherwise, the projects must be re-structured so that that they eventually represent individual projects.

The peers conclude that criterion 1 is *partly* fulfilled.

2. The Degree Program: Structures, methods and implementation

Criterion 2.1 Structure and modules

Evidence:

- Self-assessment report
- Module descriptions
- PLO matrices
- Discussions during the online visit

Preliminary assessment and analysis of the peers:

All study programs under review are divided into modules which comprise a sum of teaching and learning. In general, the panel found the structure of the modules to be adequate and manageable. The modules are divided into lecture and lab units, as well as time for self-study and exam preparation. In most modules, practical work is included while the students gain additional professional practice during the compulsory practical training in year 4. The peers consider it laudable that so much professional training is included in order to give the students the best opportunities to establish contact with possible employers already during the final stage of their studies.

The peers regret that none of the programs contain electives that allow for a certain specialization based on the personal interest of each student. They learn from the students that there is one special topic course in level 7, where the students can choose their topic of interest. However, as far as the peers understand, this is not comparable to a set of

electives where the students actually choose several courses in order to deepen their knowledge in specific subject areas. The students confirm that they would prefer to have electives in the latter half of their studies instead of completing the general courses in the preparatory year. The peers are well aware that the structure of the preparatory year cannot be changed as this is a mandatory element equal to all students at all Saudi universities introduced by the government. However, the peers highly recommend restructuring the curricula so that at least a minimum number of electives can be integrated, enabling at least some extent of specialization. They consider this to be of great importance as all three are very broad programs with no (or very little) room for individual profiling.

Concerning the aspect of internationalization and student mobility, the peers notice that this is still an aspect under development or at least of little significance. The peers regret that although the university has several agreements for student exchange with partner universities in attractive countries such as Australia, New Zealand, or the United States, the demand and interest of students is very low. The program coordinators emphasize that the university highly encourages students to go abroad and, in particular, to complete the practical training at an international company abroad. The peers learn that so far no students have gone abroad in order to study at a partner university for one or two semesters. However, the students confirm that it would theoretically be possible and that it is mostly due to personal reasons and because it is too big of an organizational effort that they are not interested in exchange. One of the students present during the discussion reports about her practical training that she completed at a company in South Korea. The peers are convinced that in principal a stay abroad is always possible. However, they do believe that the university is not yet fully aware of the benefits of student mobility and therefore recommend to further extend its international partnerships on the one hand, and further promote international exchange among its students on the other.

Criterion 2.2 Work load and credits
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Evidence:

- Self-assessment report
- Module descriptions
- Discussions during the online visit

Preliminary assessment and analysis of the peers:

All modules are assigned with credit points between 5 and 6 ECTS, except for the final project I and II, which comprise 7 credits each. The credits are more or less equally distributed over eight semesters with the exception of year 4 that shows a slightly higher workload compared to the other years. Saudi credit hours do not count the actual workload of the

students but only estimate the time spent in classes, in laboratories, and during self-study. However, the module descriptions presented to the peers clearly indicated for each course the expected workload in time hours for every week. Thus, a transfer of the workload into the ECTS System is easily possible and reveals that the workload is more or less evenly distributed and usually meets the reality. The students confirm that the calculation of the workload was transparent to them and that the workload indicated in the module descriptions is realistic. Hence, there had not yet been any reason to complain about the amount of workload.

The only problem outlined by the peers refers to the practical training semester. Currently, the students have to spend 400 working hours in internships handing in written reports, documenting their work and progress and meeting their supervisor every week, without receiving any credits for it, only because it takes place off-campus. The peers emphasize that the non-crediting of the practical training does not comply with the European standards, as neither the real student workload nor the expectancy of time invested are taken into account this way. In this particular case, not even the module descriptions offer more information about the actual workload. Consequently, according to the peers, it is inevitable to outline in the module descriptions how many working hours each student will spend and to allocate an adequate amount of credits to this module. This is crucial as the practical training makes up a crucial part of the curriculum on the one hand, and as practical experience is of major importance for future employers on the other.

Criterion 2.3 Teaching methodology

Evidence:

- Self-assessment report
- Module descriptions
- Discussions during the online visit

Preliminary assessment and analysis of the peers:

It has already been outlined that teaching in all three programs includes theoretical foundations as well as practical work, which is welcomed by the peers. In general, teaching includes lectures, classroom exercises, tutorials, group exercises, laboratory work, group work, projects as well as alternative forms of teaching such as flipped classroom. As a result of the ongoing Covid-19 crisis, the university was forced to rearrange its teaching methods and to temporarily rely entirely on digital teaching and learning. According to staff members and students, this worked very well, and most of them believe that some of the measures, i.e., the most successful ones, introduced in order to focus on online learning during the pandemic will be maintained and further extended in the future. In conclusion,

the peers clearly see that the teaching methods applied in the degree programs are diverse, up-to-date, and oriented towards the best learning approach of the students.

Criterion 2.4 Support and assistance

Evidence:

- Self-assessment report
- Academic advising handbook
- Discussions during the online visit

Preliminary assessment and analysis of the peers:

The peers have a very good impression of the offers related to support and assistance for the students at Almaarefa University and the department. The students confirm that the teaching staff is always available to any questions and supports them in any possible way. In addition, student representatives participate in different academic committees – the most important one being the central student council – and consequently feel well taken care of. Special support to students is given through the intense, individual supervision of each student, as each student has his/her own personal supervisor whom they can contact for any kind of assistance. Each department has a center of student affairs which comprises a unit specifically for consultation services. Here, services of all types are available to the students. This not only concerns advisory services but also offers the students a wide range of extracurricular activities, campus activities, or student activities clubs. The student affairs centers of every department are closely connected with the central university-level center of student affairs, which ensures a constant exchange between all of them.

The peers learn that students with disabilities are taken special care of. All facilities at Almaarefa University are barrier-free. At the time of the online visit, there is one student enrolled at the department who is in a wheelchair. According to the program coordinators, he is very well integrated and enjoys special support in different ways in order to ensure his best possible learning success despite the physical constraint.

The peers are also pleased to hear that students receive adequate support when it comes to the preparation of the practical training phase. The university has many agreements with industry partners in different fields and therefore offers the students a wide range of companies they can complete their field training at. Many students find their partner company on their own, but whenever there are problems with finding a placement, the university will support the students and make use of its own connections.

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

Electives

See criterion 1.

Student mobility

The peers acknowledge that the university is working hard toward expanding its international partnership on a yearly basis and to encourage students to benefit from these agreements. In order to further promote student mobility, the peers propose to maintain their respective recommendation.

Practical training

See criterion 1.

The peers conclude that criterion 2 is *partly* fulfilled.

3. Exams: System, concept and organization

Criterion 3 Exams: System, concept and organization
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Evidence:

- Self-assessment report
- Examination rules
- Discussions during the online visit

Preliminary assessment and analysis of the peers:

Each course-content in the reviewed study programs is reflected in exams, which are distributed in three examination periods/types during the semester: each course has a mid-term exam and a final examination while students have to pass a number of smaller tests or quizzes during the semester. The consequently, comparatively high amount of exams during one semester is not considered problematic but helpful by the students since it allows for a continuous evaluation of each student's individual achievement and ensures an ongoing motivation. The students consider the information about examinations in the courses to be excellent; all information required is given in advance in the module descriptions or online, and all course requirements including deadline or exam dates are conveyed at the beginning of the course. If there are any conflicts of dates during the examination period, an individual solution is always found. The only thing students do not know about

is the process of taking resits. However, this is due to the fact that students hardly ever fail an exam. If they did, they would at least know where to go and whom to consult for advice.

A few weeks before the online visit, the peers were provided with a selection of exams and final projects to check. They confirm that these generally represent an adequate level of knowledge as required by the EQF-level 6. However, as has been outlined already, the programs still lack a final project of a size and academic depth equivalent to a Bachelor thesis or comparable capstone project. As the peers learn during the discussions, the aim of the final project is to provide students with the necessary competencies in the field of communication, presentation, and teamwork on the one hand and practical systems analysis and development skills on the other hand. Although the peers generally welcome this kind of a group project and the values it conveys to the students, they emphasize that a final project comparable to a Bachelor thesis is not aimed at the extension of soft skills but instead should clearly focus on the scientific skills and independent research of each student. In order to close this final gap to international examination standards, the integration of a thesis or real capstone project comparable to the European standard will be inevitable.

In conclusion, the peers note that all relevant examination regulations are in place and well communicated in a transparent way. The forms of exams are oriented toward the envisaged learning outcomes of the respective courses, and the workload is distributed in an acceptable way.

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

Final project

See criterion 1.

The peers conclude that criterion 3 is *partly* fulfilled.

4. Resources

Criterion 4.1 Staff

Evidence:

- Self-assessment report
- Staff handbook
- Department faculty handbook
- Discussions during the online visit

Preliminary assessment and analysis of the peers:

At the time of the online visit, the Computer and Information Systems Department employs nine full-time staff members as well as four part-time staff members, most of them coming from other countries in the Arab region. Although 13 staff members in total appear to be rather low at first glance, the peers are convinced that the number of staff assigned to the programs is sufficient to sustain them properly. The number of staff members depends largely on the number of students, which, at the time of the online visit, is rather low compared to other Saudi HEIs. If the number of students increases, the number of teaching staff shall be equally increased in order to guarantee a good student-teacher ratio. The peers learn that the recruitment of staff members is based on ambitious quality criteria, as the quality of the staff members is of high importance at Almaarefa University. For example, all applicants must have gained several levels of experience at renowned universities and must prove adequate professional/industrial experience.

Regarding the Computer Science and Information System programs, the peers have the impression that the staff members are well qualified so that they ensure a high standard of teaching within the programs. However, they note that the staff members do not necessarily teach within their main field of expertise. For example, classic computer scientists are highly involved in traditional information systems courses and vice versa. The peers, therefore, encourage the university to deploy its staff resources more selectively and based on their personal experience.

With regards to the Health Information System program, the peers note that, at the time of the online visit, it is unclear which instructor (of the department) teaches or has the required expertise to teach the program-specific courses. This is also due to the fact that many courses within this program lack a responsible teacher in the module handbook. In this context, the peers discuss in detail the educational and scientific background of the staff members presented in the staff handbook. In two cases of faculty members it remains unclear which specific HIS or health informatics background is given, in all other cases the peers could not recognize any clear Health Informatics specific qualification after having thoroughly studied the staff handbook. More precisely, there are only two staff members identified (at all) who show any health informatics related academic record, while they both only hold Master's degrees recently obtained at KSAU in this year (2021). The peers learn that a proportion of modules/course units within this program is taught by staff members imported from other medical departments of the university. However, it remains unclear which faculty members from the department teach the HIS program-specific courses that focus directly on health information systems and thus require a solid expertise in health informatics. The peers stress that domain-specific qualifications of a minimum amount of teaching staff within the department are essential for the success of any study

program, in particular for such an interdisciplinary program that combines two disciplines, i.e. the medical and the informatics component. Therefore, the peers emphasize that the university must be able to demonstrate that a sufficient number of staff members has an extensive expertise in health informatics and/or health information systems and that those will eventually be teaching the program-specific courses. For reasons of transparency, the so called "imported lecturers" from other departments of the university should also be included in the staff handbook.

Criterion 4.2 Staff development

Evidence:

- Self-assessment report
- Almaarefa University operational plan for research 2020-2025
- Discussions during the online visit

Preliminary assessment and analysis of the peers:

For all teachers, formal regulations exist on teaching and administrative tasks. The university offers a range of workshops aimed at improving the teaching and didactical skills of its staff members. Those actively engaged in research have the chance to reduce their teaching hours per week. Almaarefa University has a research fund available for all staff members and students. This fund is intended to cover all costs arising through all kinds of research activities such as publication fees, participation in conferences, or sabbatical leave. Staff members can also apply for financial support for their different research projects. The peers generally welcome the opportunities given by the university but regret to hear that the demand for and interest in research activities, in particular, longer research stays, is very low. They learn that this is mostly due to personal reasons/interests (most staff members still focus more on education rather than research) as well as organizational obstacles and not because the university does not allow such activities. On the contrary, the staff members as well as representatives of the university management emphasize that research activities are highly supported by the university. According to the current research plan of Almaarefa University, all staff members should be encouraged to conduct research and constantly improve their scientific skills. As a consequence of this research plan, citation has tripled and the number of publications has largely increased. The peers strongly welcome the university's increasing focus on research. They are convinced that different measures exist in order to support and encourage staff members to extend their teaching and research skills.

Criterion 4.3 Funds and equipment

Evidence:

- Self-assessment report
- Discussions during the online visit

Preliminary assessment and analysis of the peers:

Although the government of the Kingdom encourages the privatization of universities, the peers learn during the discussions that Almaarefa University depends fully on its own resources as financial support by the government has been very limited over the years. The HEI is thus financed mostly through students' tuition fees.

Due to the ongoing Covid-19 pandemic, the peers are not able to travel to Saudi Arabia and visit Almaarefa University in person. Therefore, the HEI has provided the peers with a professional video showing its campus and all relevant research and teaching facilities and equipment. The peers consider the university's facilities and available equipment in the computer labs to be of highest standards. The newly constructed premises are spacious and offer ample opportunities for the professional and individual development of students and teachers. The students confirm that they are provided with all relevant computer software and are given easy access to all necessary rooms and equipment.

The peers are very impressed by the range of learning tools and resources available to the students. In particular, they appreciate the existence and purpose of the Saudi Digital Library, the largest academic gathering of information sources in the Arab world, with more than 310,000 scientific references covering all academic disciplines and shared by all Saudi universities.

The peers also particularly welcome the fact that Almaarefa University consists of one shared campus where male and female students study together. Although quite a number of courses still take place separately, mostly simply because the rooms are too small to put all students together at the same time, the peers consider this a great and important progress and are very happy to hear that students and teaching staff enjoy studying and teaching together – regardless of gender.

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

Staff involved in the Health Information System program

The peers welcome that the staff handbook has been extensively revised and an assignment of the courses to the lecturers has been added. Overall, it is now clear that every course is led by a responsible teacher who has at least some experience in health informatics. However, the peers note that all HIS-specific courses are taught by part-time staff or

guest lecturers and that the number of HIS-specific staff members remains comparatively low. Consequently, staff members have to cover many courses at the same time. Although the university explains in its statement that the number of HIS-specific staff members will be increased and that there are already some staff members under recruitment (one associate professor already signed the contract), the peers propose to maintain a respective requirement until the number of HIS-specific staff members has in fact been increased in order to ensure an adequate teaching quality.

The peers conclude that criterion 4 is *partly* fulfilled.

5. Transparency and documentation

Evidence:

- Module descriptions per program
- Discussions during the online visit

Preliminary assessment and analysis of the peers:

The peers generally appreciate the module descriptions presented beforehand with the self-assessment report, which are also available and accessible to the students, for example, through the university website and the Moodle platform. The peers had initially realized that some essential module descriptions were missing, i.e., those of the modules that do not belong to the group of computer science (COMP), information systems (INFO), business (BUSN) and health information systems (HIS). The university provided all missing descriptions during the online visit, so that the peers had the possibility to check them thoroughly. The peers eventually find that the module descriptions give full information about the courses, examinations, contents, learning outcomes, and recommended literature.

Criterion 5.2 Diploma and Diploma Supplement

Evidence:

- Self-assessment report
- Discussions during the online visit

Preliminary assessment and analysis of the peers:

With the successful completion of their studies, the students receive a graduation certificate as well as a document showing the student's academic record. However, the peers note that the university does not issue Diploma Supplements. The documents the university provided as so-called Diploma Supplements are actually transcripts of records and therefore do not meet the criteria of the Diploma Supplement required by the European

standard. The peers and the different representatives of the university discuss this in detail, as those responsible at Almaarefa University try to make clear that Diploma Supplements are neither required nor used in Saudi Arabia and the rest of the Arab world. However, the peers emphasize the importance of the Diploma Supplement, not only for the students themselves but in particular for their potential future employers, especially also because quite a few students decide to work abroad after their studies, as the peers learn during the online visit. Therefore, and also due to the fact that the Diploma Supplement is considered an essential document within the European standard, the peers ask the university to issue a Diploma Supplement for each of the three study programs, providing adequate information on the student's qualifications profile and individual performance as well as the classification of the degree program with regard to its applicable education system.

Criterion 5.3 Relevant rules

Evidence:

- Academic regulations and bylaws
- Admission requirements
- Exam rules
- Examination and assessment policy
- Discussions during the online visit

Preliminary assessment and analysis of the peers:

The peers find that regulations for every important aspect of student life and the respective degree programs have been issued by the HEI and are available and easily accessible to all stakeholders. During the discussion with the students, it became clear that all participants knew perfectly well where to find any regulations or whom to contact if any additional information was required.

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

With its statement, the university provides sample diploma supplements for all three programs that provide adequate information on the student's qualifications profile and individual performance as well as the classification of the degree program with regard to its applicable education system.

The peers conclude that criterion 5 is *completely* fulfilled.

6. Quality management: quality assessment and development

Criterion 6 Quality management: quality assessment and development

Evidence:

- Self-assessment report
- QMS handbook Almaarefa University
- QMS handbook CIS department
- Discussions during the online visit

Preliminary assessment and analysis of the peers:

From the very thorough documentation within the SAR and official documents, it becomes obvious to the peers that with the foundation of Almaarefa University a multifaceted quality management system was established that aims at a constant development and improvement of the procedures, the programs and all individual stakeholders.

Quality management at Almaarefa University takes place at four different layers: Layer 1 comprises the course level, layer 2 the program level, layer 3 the department/faculty level, and layer 4 the university level. At all four levels, different quality management measures are applied on a regular basis, in particular in the form of evaluation surveys through an established electronic survey system. In order to receive feedback, there is a variety of surveys and questionnaires that ensure that all stakeholders are regularly included and questioned. Most importantly, the students answer a survey about each course, their teacher, and the course content every semester, which is then evaluated on a higher level. The results of the surveys are channeled back to the teacher who then reflects on the course and the survey results in a report as well as an action plan for the following semester defining measures that need to be taken. These reports are sent to and analyzed on a central level by the Deanship of Quality Management. When the peers ask about the role of the students within this feedback loop, they learn that students are not directly involved in the process as such, as they are not part of the quality center. The students report that they receive detailed information about any modifications made within the courses/programs resulting from student feedback in the surveys. Moreover, there is a university-level student council that functions as the most important channel of communication between the students and the deans. Although this extent of communication and exchange seems to be sufficient for the students and is also welcomed by the peers, the peers still believe that an exchange in the lower levels (program and course level) is equally important in order to ensure constantly high quality standards. In particular, the peers encourage the university to close all

feedback loops by ensuring that teachers give personal feedback on the evaluations and their results to the students who actually participated in the surveys. Besides this, the peers are pleased to hear that the participation rate in evaluations is increasing and that in the last academic year, roughly 80 % of all students participated in evaluations.

The peers welcome that Almaarefa University also conducts surveys with graduates to assess the overall program afterwards and also their reputation and possibilities on the labor market after the completion of studies. There are also regular surveys with industry partners aimed at adapting the programs according to the requirements of the job market.

While this is the official and institutionalized way for feedback, the peers also gain a good impression of the informal feedback mechanisms that are in place in the programs under review. Both students and teachers confirm that there is a close relationship between them and that teachers can always be contacted if something needs to be addressed, improved, or criticized. If any problems occur, an easy solution favorable to everybody will usually be found. In addition, all students have their own personal supervisor whom they can contact for any kind of assistance. In conclusion, the peers are convinced that the quality management system at Almaarefa University is well functioning and under constant review and permanent improvement.

Final assessment of the peers after the comment of the Higher Education Institution regarding criterion 6:

The peers conclude that criterion is *completely* fulfilled.

D Additional Documents

Not required.

E Comment of the Higher Education Institution (24.05.2021)

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

- Program specifications Ba Information Systems
- Student transcripts for each program
- List of proposed electives
- Updated module descriptions
- Sample of student's poster
- Updated staff handbook
- List of participating faculties in the HIS program
- Updated HIS module handbook
- CVs of teaching staff under recruitment process
- Sample of funded project
- List of recently published research
- Sample diploma supplement per program

F Summary: Peer recommendations (27.05.2021)

Taking into account the additional information and the comments given by Almaarefa University the peers 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	30.09.2026	Euro-Inf®	30.09.2026
Ba Information Systems	With requirements for one year	30.09.2026	Euro-Inf®	30.09.2026
Ba Health Information Systems	With requirements for one year	30.09.2026	Euro-Inf®	30.09.2026

Requirements and recommendations for the applied labels

Requirements

For the Bachelor's degree programs Computer Science and Information Systems

- A 1. (ASIIN 1.1) Draft the educational objectives/learning outcomes so that they describe the academic, subject-specific and professional classification of the qualifications gained in the degree programs.

For all degree programs

- A 2. (ASIIN 1.3; 3) All programs must have a capstone project of adequate academic level comparable to EQF level 6.
- A 3. (ASIIN 1.3; 2.2) The practical training must be awarded with credits that adequately reflect the actual workload.

For the Bachelor's degree program Health Information Systems

- A 4. (ASIIN 4.2) Demonstrate that a sufficient number of staff has an extensive expertise in health informatics and/or health information systems. Ensure that those will eventually be teaching the program-specific courses.

Recommendations

For the Bachelor's degree program Information Systems

- E 1. (ASIIN 1.3) It is recommended to integrate the relevant aspects of business process modelling in the curriculum of the Information Systems program.

For the Bachelor's degree programme Health Information Systems

- E 2. (ASIIN 1.3) It is recommended to further integrate the relevant aspects of industrial and international standards in the curriculum of the Health Information System program.

For all degree programs

- E 3. (ASIIN 1.4) It is recommended to make the compensation of lacking English language skills transparent in the admission requirements and clearly regulate what happens if the English skills still remain insufficient after the compensation measures.
- E 4. (ASIIN 2.1) It is recommended to integrate a minimum number of electives in the curricula of all three programs.
- E 5. (ASIIN 2.1) It is recommended to further promote student mobility and at the same time extent the university's international partnerships.

G Comment of the Technical Committees

Technical Committee 04 – Computer Science/Informatics (09.06.2021)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee discusses the procedure and follows the decision of the peers.

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

Degree Program	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ba Computer Science	With requirements for one year	30.09.2026	Euro-Inf®	30.09.2026
Ba Health Information System	With requirements for one year	30.09.2026	Euro-Inf®	30.09.2026

Requirements and recommendations for the applied labels

Requirements

For the Bachelor's degree programs Computer Science and Information Systems

- A 1. (ASIIN 1.1) Draft the educational objectives/learning outcomes so that they describe the academic, subject-specific and professional classification of the qualifications gained in the degree programs.

For all degree programs

- A 2. (ASIIN 1.3; 3) All programs must have a capstone project of adequate academic level comparable to EQF level 6.
- A 3. (ASIIN 1.3; 2.2) The practical training must be awarded with credits that adequately reflect the actual workload.

For the Bachelor's degree program Health Information Systems

- A 4. (ASIIN 4.2) Demonstrate that a sufficient number of staff has an extensive expertise in health informatics and/or health information systems. Ensure that those will eventually be teaching the program-specific courses.

Recommendations

For the Bachelor's degree program Information Systems

- E 1. (ASIIN 1.3) It is recommended to integrate the relevant aspects of business process modelling in the curriculum of the Information Systems program.

For the Bachelor's degree programme Health Information Systems

- E 2. (ASIIN 1.3) It is recommended to further integrate the relevant aspects of industrial and international standards in the curriculum of the Health Information System program.

For all degree programs

- E 3. (ASIIN 1.4) It is recommended to make the compensation of lacking English language skills transparent in the admission requirements and clearly regulate what happens if the English skills still remain insufficient after the compensation measures.
- E 4. (ASIIN 2.1) It is recommended to integrate a minimum number of electives in the curricula of all three programs.
- E 5. (ASIIN 2.1) It is recommended to further promote student mobility and at the same time extent the university's international partnerships.

Technical Committee 07 – Business Informatics/Information Systems (31.05.2021)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee discusses the procedure and follows the decision of the peers.

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 07 – Business Informatics/Information Systems.

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

Degree Program	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ba Information Systems	With requirements for one year	30.09.2026	Euro-Inf®	30.09.2026
Ba Health Information System	With requirements for one year	30.09.2026	Euro-Inf®	30.09.2026

Requirements and recommendations for the applied labels

Requirements

For the Bachelor's degree programs Computer Science and Information Systems

- A 1. (ASIIN 1.1) Draft the educational objectives/learning outcomes so that they describe the academic, subject-specific and professional classification of the qualifications gained in the degree programs.

For all degree programs

- A 2. (ASIIN 1.3; 3) All programs must have a capstone project of adequate academic level comparable to EQF level 6.

- A 3. (ASIIN 1.3; 2.2) The practical training must be awarded with credits that adequately reflect the actual workload.

For the Bachelor's degree program Health Information Systems

- A 4. (ASIIN 4.2) Demonstrate that a sufficient number of staff has an extensive expertise in health informatics and/or health information systems. Ensure that those will eventually be teaching the program-specific courses.

Recommendations

For the Bachelor's degree program Information Systems

- E 1. (ASIIN 1.3) It is recommended to integrate the relevant aspects of business process modelling in the curriculum of the Information Systems program.

For the Bachelor's degree programme Health Information Systems

- E 2. (ASIIN 1.3) It is recommended to further integrate the relevant aspects of industrial and international standards in the curriculum of the Health Information System program.

For all degree programs

- E 3. (ASIIN 1.4) It is recommended to make the compensation of lacking English language skills transparent in the admission requirements and clearly regulate what happens if the English skills still remain insufficient after the compensation measures.
- E 4. (ASIIN 2.1) It is recommended to integrate a minimum number of electives in the curricula of all three programs.
- E 5. (ASIIN 2.1) It is recommended to further promote student mobility and at the same time extent the university's international partnerships.

H Decision of the Accreditation Commission (18.06.2021)

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

The Accreditation Commission discusses the procedure and follows the decision of the peers and the Technical Committees.

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 Committees 04 – Computer Science/Informatics and 07 – Business Informatics/Information Systems.

The Accreditation Commission decides to award the following seals:

Degree Program	ASIIN Seal	Maximum duration of accreditation	Subject-specific label	Maximum duration of accreditation
Ba Computer Science	With requirements for one year	30.09.2026	Euro-Inf®	30.09.2026
Ba Information Systems	With requirements for one year	30.09.2026	Euro-Inf®	30.09.2026
Ba Health Information Systems	With requirements for one year	30.09.2026	Euro-Inf®	30.09.2026

Requirements and recommendations for the applied labels

Requirements

For the Bachelor's degree programs Computer Science and Information Systems

- A 1. (ASIIN 1.1) Draft the educational objectives/learning outcomes so that they describe the academic, subject-specific and professional classification of the qualifications gained in the degree programs.

For all degree programs

- A 2. (ASIIN 1.3; 3) All programs must have a capstone project of adequate academic level comparable to EQF level 6.
- A 3. (ASIIN 1.3; 2.2) The practical training must be awarded with credits that adequately reflect the actual workload.

For the Bachelor's degree program Health Information Systems

- A 4. (ASIIN 4.2) Demonstrate that a sufficient number of staff has an extensive expertise in health informatics and/or health information systems. Ensure that those will eventually be teaching the program-specific courses.

Recommendations

For the Bachelor's degree program Information Systems

- E 1. (ASIIN 1.3) It is recommended to integrate the relevant aspects of business process modelling in the curriculum of the Information Systems program.

For the Bachelor's degree programme Health Information Systems

- E 2. (ASIIN 1.3) It is recommended to further integrate the relevant aspects of industrial and international standards in the curriculum of the Health Information System program.

For all degree programs

- E 3. (ASIIN 1.4) It is recommended to make the compensation of lacking English language skills transparent in the admission requirements and clearly regulate what happens if the English skills still remain insufficient after the compensation measures.
- E 4. (ASIIN 2.1) It is recommended to integrate a minimum number of electives in the curricula of all three programs.
- E 5. (ASIIN 2.1) It is recommended to further promote student mobility and at the same time extent the university's international partnerships.