



هيئة جودة التعليم والتدريب  
Education & Training Quality Authority  
Kingdom of Bahrain - مملكة البحرين

# Directorate of Higher Education Reviews Programme Review Report

University of Bahrain (UoB)  
College of Information Technology  
Bachelor of Science in Information Systems

Kingdom of Bahrain

Site Visit Date: 7-9 December 2020

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## Acronyms

ABET	Accreditation Board of Engineering and Technology
ACM	Association for Computing Machinery
AIS	Association for Information Systems
APR	Academic Programme Review
BQA	Education & Training Quality Authority
CAC	Curriculum and Accreditation Committee
CGPA	Cumulative Grade Point Average
CILO	Course Intended Learning Outcome
COBIT	Control Objectives for Information and Related Technologies
CSB	Civil Service Bureau
DAC	Department Accreditation Committee
DGSSR	Deanship of Graduate Studies and Scientific Research
DHR	Directorate of Higher Education Reviews
HEC	Higher Education Council
HEI	Higher Education Institution
HoD	Head of Department
IEEE	Institute of Electrical and Electronic Engineering
IS	Information Systems
IT	Information Technology
LMS	Learning Management System
NQF	National Qualifications Framework
PCAP	Postgraduate Certificate in Academic Practice
PD	Professional Development
PEO	Programme Educational Objective
PC	Personal Computer
PI	Performance Indicator

PIAC	Programme Industrial Advisory Committee
PILO	Programme Intended Learning Outcome
PSAC	Programme Students' Advisory Committee
QAAC	Quality Assurance & Accreditation Centre
QAAEC	Quality Assurance & Accreditation Executive Committee
QAC	Quality Assurance Committee
SER	Self-Evaluation Report
SIS	Student Information System
UILO	University Intended Learning Outcome
UoB	University of Bahrain
UTEL	Unit of Teaching Excellence and Leadership

# I. Introduction

In keeping with its mandate, the Education & Training Quality Authority (BQA), through the Directorate of Higher Education Reviews (DHR), carries out two types of reviews that are complementary. These are: Institutional Reviews, where the whole institution is assessed; and the Academic Programme Reviews (APRs), where the quality of teaching, learning and academic standards are assessed in academic programmes within various colleges according to specific standards and indicators as reflected in its Framework.

Following the revision of the APR Framework at the end of Cycle 1 in accordance with the BQA procedure, the revised APR Framework (Cycle 2) was endorsed as per the Council of Ministers' Resolution No.17 of 2019. Thereof, in the academic year (2019-2020), the DHR commenced its second cycle of programme reviews.

The Cycle 2 APR Review Framework is based on four main Standards and 21 Indicators, which form the basis of the APR Reports of the Higher Education Institutions (HEIs).

The **four** standards that are used to determine whether or not a programme meets international standards are as follows:

*Standard 1: The Learning Programme*

*Standard 2: Efficiency of the Programme*

*Standard 3: Academic Standards of Students and Graduates*

*Standard 4: Effectiveness of Quality Management and Assurance*

The Review Panel (hereinafter referred to as 'the Panel') decides whether each indicator, within a standard, is 'addressed', 'partially addressed' or 'not addressed'. From these judgments on the indicators, the Panel additionally determines whether each of the four standards is 'Satisfied' or 'Not Satisfied', thus leading to the Programme's overall judgment, as shown in Table 1 below.

**Table 1: Criteria for Judgements**

<b>Criteria</b>	<b>Judgement</b>
All four Standards are satisfied	Confidence
Two or three Standards are satisfied, including Standard 1	Limited Confidence
One or no Standard is satisfied	No Confidence
All cases where Standard 1 is not satisfied	

The APR Review Report begins with providing the profile of the Programme under review, followed by a brief outline of the judgment received for each indicator, standard, and the overall judgement.

The main section of the report is an analysis of the status of the programme, at the time of its actual review, in relation to the review standards, indicators and their underlying expectations.

The report ends with a Conclusion and a list of Appreciations and Recommendations.

## II. The Programme's Profile

Institution Name*	University of Bahrain (UoB)
College/ Department*	College of Information Technology (IT) Department of Information Systems (IS)
Programme/ Qualification Title*	Bachelor of Science in Information Systems (BSc in IS)
Qualification Approval Number	University Decision 294/2017
NQF Level	8
Validity Period on NQF	Pending
Number of Units*	132 credit hours
NQF Credit	553 NQF Credit
Programme Aims*	<ol style="list-style-type: none"> <li>1. Graduates will apply their knowledge and skills to succeed in an information systems career.</li> <li>2. Graduates will communicate and work ethically, responsibly, and effectively in multi-disciplinary teams while fully participating in the profession and society.</li> <li>3. Graduates will pursue and successfully complete advanced studies and embark on entrepreneurship and lifelong learning for personal and professional growth.</li> </ol>
Programme Intended Learning Outcomes*	<ol style="list-style-type: none"> <li>1. Analyse a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions.</li> <li>2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the programme's discipline.</li> <li>3. Communicate effectively in a variety of professional contexts.</li> <li>4. Recognize professional and entrepreneurship responsibilities and make informed judgments in computing practice based on legal and ethical principles.</li> <li>5. Function effectively as a member or leader of a team engaged in activities appropriate to the programme's discipline.</li> <li>6. Support the delivery, use, and management of information systems within an information systems environment.</li> </ol>

\* Mandatory fields

### III. Judgment Summary

## The Programme's Judgment: Confidence

Standard/ Indicator	Title	Judgement
<b>Standard 1</b>	<b>The Learning Programme</b>	<b>Satisfied</b>
Indicator 1.1	The Academic Planning Framework	Addressed
Indicator 1.2	Graduate Attributes & Intended Learning Outcomes	Partially Addressed
Indicator 1.3	The Curriculum Content	Addressed
Indicator 1.4	Teaching and Learning	Addressed
Indicator 1.5	Assessment Arrangements	Addressed
<b>Standard 2</b>	<b>Efficiency of the Programme</b>	<b>Satisfied</b>
Indicator 2.1	Admitted Students	Addressed
Indicator 2.2	Academic Staff	Addressed
Indicator 2.3	Physical and Material Resources	Addressed
Indicator 2.4	Management Information Systems	Addressed
Indicator 2.5	Student Support	Partially Addressed
<b>Standard 3</b>	<b>Standard 3: Academic Standards of Students and Graduates</b>	<b>Satisfied</b>
Indicator 3.1	Efficiency of the Assessment	Addressed
Indicator 3.2	Academic Integrity	Partially Addressed
Indicator 3.3	Internal and External Moderation of Assessment	Partially Addressed
Indicator 3.4	Work-based Learning	Addressed
Indicator 3.5	Capstone Project or Thesis/Dissertation Component	Addressed

Indicator 3.6	Achievements of the Graduates	Addressed
<b>Standard 4</b>	<b>Effectiveness of Quality Management and Assurance</b>	<b>Satisfied</b>
Indicator 4.1	Quality Assurance Management	Partially Addressed
Indicator 4.2	Programme Management and Leadership	Addressed
Indicator 4.3	Annual and Periodic Review of the Programme	Addressed
:Indicator 4.4	Benchmarking and Surveys	Partially Addressed
:Indicator 4.5	Relevance to Labour market and Societal Needs	Addressed

## IV. Standards and Indicators

### Standard 1

#### The Learning Programme

*The programme demonstrates fitness for purpose in terms of mission, relevance, curriculum, pedagogy, intended learning outcomes and assessment.*

#### Indicator 1.1: The Academic Planning Framework

*There is a clear academic planning framework for the programme, reflected in clear aims which relate to the mission and strategic goals of the institution and the college.*

##### **Judgment: Addressed**

- The Bachelor of Science in Information Systems (BSc. in IS) programme offered by the College of Information Technology (IT) is guided by the University of Bahrain (UoB) planning framework that guides departments in offering programmes that are in line with the institution's mission and strategic goals, and that are relevant for the Bahraini labour market. The Regulations for Offering/Developing Academic Programmes and Courses at UoB are very detailed and complete. The same applies to the Quality Manual and the guide titled 'Assuring Learning'. They ensure that programmes are compliant with local standards, namely the National Qualifications Framework (NQF) as well as international standards, such as the Accreditation Board of Engineering and Technology (ABET), the Association for Computing Machinery (ACM) and the Association for Information Systems (AIS). The academic planning framework is supported by an extensive committee structure.
- The departmental committee structure is intended to ensure quality of the programme and identify issues that might jeopardize compliance with local and international standards, and the quality of graduates. However, the Panel notes that the annual programme self-evaluation reports do not explicitly identify risks to the programme. No information on potential risks, their analysis or mitigation plans are presented in the Self-Evaluation Report (SER) or supporting evidence. Any risk mitigation plans are related to IT-related risks, not programme risks. The Panel recommends, therefore, that the College should develop and maintain a formal plan for the identification of risks to the BSc in IS programme, as well as an analysis of these risks and their mitigation.
- After submitting the Qualification Placement Application Form to the NQF in 2016, the BSc in IS programme was successfully placed at NQF Level Eight. Extensive mappings of

University Intended Learning Outcomes (UILOs), Programme Educational Objectives (PEOs), Programme Intended Learning Outcomes (PILOs) and Course Intended Learning Outcomes (CILOs) took place as part of this process and in adherence to NQF requirements.

- As for the BSc in IS programme's qualification title, the Panel finds it to be concise and consistent with international naming practices worldwide. The correct title is used across all documentation (including certificates) that was made available to the Panel and also on the university website.
- The BSc in IS programme's aims (called PEOs) were revised in 2016 based on feedback submitted by different stakeholders. This revision placed a greater focus on entrepreneurship and although no explicit reference to research was made, preparation of students for advanced studies in which they will be expected to conduct research, was included in the PEOs. The Panel, thus, finds that the PEOs of the IS programme contribute to the achievement of the College and University missions.

### **Indicator 1.2: Graduate Attributes & Intended Learning Outcomes**

*Graduate attributes are clearly stated in terms of intended learning outcomes for the programme and for each course and these are appropriate for the level of the degree and meet the NQF requirements.*

#### **Judgment: *Partially Addressed***

- UoB has a set of six UILOs that describe generic graduate attributes that are to be achieved by graduates of all programmes offered by the Institution. These address communication, technological competence, critical thinking/analysis/knowledge/skills, information literacy, responsibility/integrity and life-long learning and are directly mapped to the PILOs.
- The PILOs of the BSc in IS are based on ABET criteria. As part of ABET's change from PILOs 'a-k' to '1-6', the PILOs of the programme were also changed. The mappings of CILOs to the new PILOs were revised accordingly. The use of ABET's PILOs provides confidence that the PILOs are clear and appropriate for the degree aims and its level.
- Although the PILOs follow ABET criteria, they are abstract and challenging to measure. UoB, therefore, defined Performance Indicators (PIs) for the PILOs, which are easier to measure. If the PIs of a PILO are achieved, the PILO is assumed to be met. All PILOs conform to NQF requirements, as was mentioned in Indicator 1.1.
- The Panel finds that the CILOs in the programme are well-defined and measurable and are consistent with Bloom's Taxonomy requirements. The mappings of courses to NQF levels are also acceptable, as confirmed in the successful NQF Level Eight placement.

However, the Panel notes that CILOs have not yet been benchmarked and that some CILOs involve errors that need to be rectified (e.g., not every senior project of the course 'ITIS 499' requires students to apply statistical knowledge to data). The Panel, therefore, recommends that the College should expand its programme's course-level benchmarking to include CILOs and should utilize the benchmarking results in the revision of the programme's CILOs, to rectify some existing errors in them.

- CILOs in the BSc in IS programme are mapped to PILOs (mapping to old PILOs, mapping to new PILOs). However, the Panel recommends that the College should review the mappings of CILOs to PILOs to improve consistency and avoid mismatches that were noticed by the Panel (e.g., one document shows that the course 'IT IS 345' contributes to PILOs 1-3; whereas, another document shows that the same course contributes to PILOs 1-6).

### **Indicator 1.3: The Curriculum Content**

*The curriculum is organised to provide academic progression of learning complexity guided by the NQF levels and credits, and it illustrates a balance between knowledge and skills, as well as theory and practice, and meets the norms and standards of the particular academic discipline.*

#### **Judgment: Addressed**

- Upon examination of the BSc in IS study plan, the Panel found it to be well-articulated, and consisting of core and general study elective courses, a senior project, and work experience (internship). The total number of credit hours of the programme is 132 credits distributed over courses that meet requirements set by the University, College, Department of IS, and the NQF. The student workload per semester is manageable with five to six courses each consisting of three credits. In addition, prerequisites exist to ensure that advanced courses build on concepts discussed in lower-level courses. Overall, the Panel considers the study plan as demonstrating appropriate year-on-year and course-by-course progression, with clear prerequisite requirements and a suitable workload.
- The BSc in IS programme is reviewed annually. The Curriculum and Accreditation Committee (CAC) provides important input into the review process. Other sources of input are the curriculum guidelines of the ACM and the Institute of Electrical and Electronic Engineering (IEEE), and other stakeholders (faculty, students, employers, and alumni). Different benchmarking activities have been carried out by the IS Department. Examples of changes to the study plan are reported in the SER. However, the Panel noticed that benchmarking is limited to course titles. The Panel recommends, therefore, that the College should carry out more detailed benchmarking exercises with peer institutions, that also include comparing additional curriculum components (e.g., course content, practical aspects, and CILOs as was mentioned in Indicator 1.2).

- The BSc in IS programme strives for a balance between theory and practice, and between knowledge and skills. The Panel notes that this is demonstrated by the mapping of PILOs to four outcome domains (Knowledge & Understanding, Subject-Specific Skills, Thinking Skills, and General & Transferable Skills), and by including in each course two hours per week of practical work (e.g., laboratory or tutorial), during which students develop various skills and apply their theoretical knowledge to address real-life problems.
- The Panel notes that there is a variety of courses in the programme covering different IS-related topics, which helps in ensuring that the breadth of the curriculum is achieved. As for the depth of the topics covered, this is generally satisfactory with room for improvement in some courses, as already stated in some of the IS department's annual self-evaluation reports; however, appropriate curriculum changes have taken place to meet current labour market needs.
- In collaboration with the members of the CAC, textbooks are selected in the programme by the course coordinators. Local and international benchmarking also help identify relevant textbooks. While the SER indicates that courses use recent textbooks, the Panel notes that this does not seem to be the case for all courses. For instance, the course Object Oriented Systems 'ITIS312' uses a textbook from 2005. The Panel, therefore, recommends that the College should review the list of textbooks used in the programme, to ensure all courses use recent textbooks.

#### **Indicator 1.4: Teaching and Learning**

*The principles and methods used for teaching in the programme support the attainment of programme aims and intended learning outcomes.*

##### **Judgment: Addressed**

- UoB has a Teaching and Learning Policy that focuses on a range of teaching and assessment tools suitable for the subject matter being taught, and emphasizes continuous improvement. However, the Panel notes that this policy is at a very high level and does not go into details, with the core part of the policy (excluding definitions) amounting to only 1.5 pages. As a result, the Panel recommends that the College should take steps toward having the University expand its Teaching and Learning Policy to provide more information that directly could be used by academics.
- The course syllabus template used in the programme requires the inclusion of teaching methods in each course syllabus. These indicate a mix of different teaching and learning techniques according to the types and levels of the courses, and include, for example, interactive teaching, problem-solving learning, practical learning, and collaborative learning. In addition, each teaching technique is linked to a set of CILOs allowing students to demonstrate the attainment of these outcomes in a particular course. The IS senior exit

survey analysis report confirms that students are exposed to different teaching and learning techniques with a satisfaction rate of 92%; nevertheless, the Panel noticed that students also reported that they could benefit from a greater focus on practical learning. The Panel additionally notes that the teaching and learning methods are not stated in the programme specification, even though required by this indicator and, therefore, recommends that the College should ensure that the teaching and learning methods are explicitly stated in the programme specification.

- UoB generally uses Blackboard as its Learning Management System (LMS). However, since the start of the Covid-19 pandemic, teaching has also been taking place *via* Microsoft Teams. Nevertheless, overall, the use of e-learning in the programme is limited in the sense that the LMS is used mainly for communication and as a content repository where teaching material is posted instead of a platform where e-learning supporting the attainment of ILOs takes place. Additionally, the Teaching and Learning Policy only refers to integrating technology in the learning experience, with no reference to e-learning. The Panel, as a result, recommends that the College should ensure that the use of e-learning be formally included in relevant policies and applied more effectively.
- In line with the UoB Teaching and Learning Policy, the students go through a positive learning experience during their course of study in the programme, including exposure to professional practice/application. The Panel was informed that the mandatory Industrial Placement course (Internship in Information Systems – ‘ITIS 483’), between year three and year four of the programme, provides students with the experience of professional practice. In addition, the course Governance and Management of Enterprise IT – ‘ITIS 362’ includes material important for the professional Control Objectives for Information and Related Technologies (COBIT) certificate, which makes this course a good example of the balance between practical and theoretical learning.
- The Panel learned from students during interviews that many courses contain projects, thus encouraging them to be involved in self-learning and independent research. Simultaneously, they are encouraged through their classes to engage in various curricular and extracurricular activities that help support their lifelong learning skills and motivate them to create and innovate. The Panel notes that the course Entrepreneurship and Digital Innovation – ‘ITIS 321’, in particular, further strengthens students’ innovation and creativity skills, additional to almost all the IS courses that have practical and project components in them.

### **Indicator 1.5: Assessment Arrangements**

*Suitable assessment arrangements, which include policies and procedures for assessing students’ achievements, are in place and are known to all relevant stakeholders.*

**Judgment: Addressed**

- The UoB and its academic units (colleges and departments) use an assessment framework that includes important regulations. In addition, the College of IT has additional policies and guidelines that provide additional details on assessments and their grading. However, the Panel notes that the IT College's 'Assessment, Grading, and Exam Moderation Guidelines' documents still seem to be draft versions and have had this status since 2013. The Panel recommends, thus, that the College should ensure that all policies relevant to assessment be updated and within a reasonable timeframe.
- Policies and procedures are posted on the University of Bahrain's website, to be accessed by all stakeholders. Additionally, the Panel learned in interviews that college-and-department internal policies are distributed within the units through the work of committees.
- Different assessment types are used throughout the curriculum and each course specification includes details, such as the assessment types, weights, and dates. Also, examinations contain details on marking criteria. In addition, formative and summative assessments are used to assess and further develop student skills. However, very limited evidence was provided for meaningful formative assessment. Nevertheless, with respect to feedback on assessments, 94% of students stated in a recent exit survey that they received prompt and continuous feedback. In the same survey, 82% of students confirmed that their grades were posted in a timely manner and that they were given enough time to seek feedback and clarification. Despite the different ratings of related questions, the Panel finds that the overall result shows the efforts of academics to provide timely feedback.
- The IS Department follows a moderation policy that covers the steps for ensuring proper management of examinations. When it comes to fairness and rigor, which is usually a concern with multiple-section courses, the same examinations are used across all sections and the same instructor marks the same question across all sections, to ensure that the same grading range is applied to all sections and a common answer key is used. Releasing the final grades to students is subject to approval by the moderation committee. However, the Panel learned in meetings with academics that the understanding of moderation is limited. For instance, post-moderation is typically taking place in the programme after the grades have been released. Furthermore, not all academics seem to be aware of the moderation process, which is an indication that this process is not conducted in a systematic way.
- The university's Regulations of Study and Examinations and the Regulation of Professional Conduct Violations, the Anti-Plagiarism Policy, and the Guide to Student Rights and Duties provide the necessary guidance for addressing students' cases of academic misconduct and appeals. Upon the release of grades, students have the right to appeal their grades and ask for a re-grading/re-marking and verification of their grade if needed. As for academic misconduct, efforts are made by the College to prevent

plagiarism. For instance, plagiarism-detection tools such as Turnitin and SafeAssign have been adopted in the programme and examinations are proctored by a team of invigilators. In case of possible misconduct, the Student Misconduct Committee looks into the case and makes a recommendation for the dismissal of the case or for an appropriate penalty that also considers possible prior offenses.

## Standard 2

### Efficiency of the Programme

*The programme is efficient in terms of the admitted students, the use of available resources - staffing, infrastructure and student support.*

#### Indicator 2.1: Admitted Students

*There are clear admission requirements, which are appropriate for the level and type of the programme, ensuring equal opportunities for both genders, and the profile of admitted students matches the programme aims and available resources.*

#### **Judgment: Addressed**

- UoB has clear, published admission policies and criteria that ensure a transparent, fair, non-discriminatory, and consistent admission process for all academic programmes. These policies are published on the university website, which is updated on a regular basis. In addition, the admissions criteria of the BSc in IS are also published as a policy in the IT College Booklet. The policy specifies the rules for direct entry into the bachelor programme, as well as entry into the Orientation Programme, which focuses on English language, ICT and mathematics.
- The Panel finds the admission requirements appropriate for the programme and consistent with local and international standards. These requirements include, for instance, a secondary school certificate or its equivalent, with a minimum Cumulative Grade Point Average (CGPA) of 70%, and language competency required according to the language of instruction. In addition, each student has to pass a personal interview. Students are allowed direct entry into the programme and are exempted from the Orientation Programme if they achieve higher scores (e.g., high-school CGPA of 90% or higher).
- Students who do not meet the requirements for direct admission to the BSc in IS programme are required to complete a one-or-two semester Orientation Programme. This programme prepares students in English (26 hours), ICT (3 hours) and pre-college mathematics (3 hours). About 2/3 of all incoming students enroll in this orientation programme. However, it was not clear to the Panel if special tracking of the success of these students is carried out during their course of study and, thus, the Panel urges the College to address this issue (see next bullet point).

- The university's Regulations of Study and Examinations Policy defines the conditions for student transfer between colleges/departments as well as from other institutions. All transfer students are subject to satisfying specific conditions. For instance, the original university needs to be recognized by the Higher Education Council in the Kingdom of Bahrain. The Policy also specifies the fundamental conditions for transfer credit of incoming students. A significant number of students transfer into the BSc in IS programme either from another UoB programme or from another institution. The Panel notes that a considerable number of transfer students have a low CGPA. In interviews, the Panel was informed that no special tracking of the success of these students is carried out despite their low CGPA. The Panel recommends that the College should consider looking at the success rate of transfer students, as well as of students who enter *via* the Orientation Programme, to determine if adjustments may need to be done to their admission process.
- The admissions criteria of the UoB are reviewed every year. This review is done by the Committee for Admission and the Supreme Admission Committee, which are chaired by the Dean of Admission and Registration and the Vice President for Academic Programmes, respectively. Usually, the Deanship of Admission and Registration benchmarks the admission criteria against international standards and norms. If needed, modifications are implemented.

## **Indicator 2.2: Academic Staff**

*There are clear procedures for the recruitment, induction, appraisal, promotion, and professional development of academic staff, which ensure that staff members are fit-for-purpose and that help in staff retention.*

### **Judgment: Addressed**

- The hiring, induction, appraisal, promotion, and other faculty-related matters in the BSc in IT programme are well-articulated and follow the university's academic and administrative bylaws on recruitments. After announcing the vacant position on the UoB website and possibly other media, the IS department's Appointment Committee shortlists and interviews candidates ensuring transparency, fairness, and consistency of faculty hiring. The college's 2017-2022 strategic recruitment plan helps identify the need for faculty based on student intake as well as on current faculty number and rank. Once hired, the new faculty members take part in an induction that provides information on important policies, services provided by UoB and quality assurance procedures, among other things. New faculty members without prior teaching experience in Bahrain receive additional training that helps them adjust to the new environment. Interviews with faculty confirmed the value of these induction sessions at the university and college level. UoB also applies annual faculty appraisals, which are integrated with the Civil Service Bureau (CSB) system and which utilize clear rubrics that support consistency of implementation across the Institution. Appraisal results are shared with the faculty members on an individual basis

and then discussed with the Head of Department (HoD), to help identify faculty members' Professional Development (PD) needs. Finally, UoB has set academic promotion regulations, which are clear and well-disseminated. Promotion applications are handled by promotion committees at the department, college, and university levels before being considered for approval by the University Council. Although interviews with faculty revealed a good understanding of the promotion regulations, the Panel notes a very low number of promotions and urges the College to address this issue (see bullet # 3 below).

- Research at UoB's academic units and centres is well-regulated through a research policy stating the types of research and publications accepted, and the available funding, among other things. This research policy is accompanied by the Research Charter of the Deanship of Graduate Studies and Scientific Research (DGSSR), which helps ensure the quality and integrity of the scientific research carried out in the programmes. Whereas, the Scientific Research Council and the University Council ensure, in addition, the alignment of faculty's scientific research with the research plan of the College and the University.
- As per the SER, the average teaching load per faculty member is 15 weekly contact hours per semester along with a student-faculty ratio of 23:1. The majority of faculty members have an extra teaching load and engage in other activities such as serving on department, college, and university committees. The Panel argues that the current workload for teaching and service makes it difficult for the University to encourage high-quality, competitive research, while backing this up with the low research productivity given the current staff of the College as well as the low number of promotions, as mentioned earlier. The Panel also finds the sample of publications included in the evidence very limited, especially considering the dynamic nature of the IS field where many new developments happen in a short time span. As a result, the Panel recommends that the College should review the current faculty workload to ensure a greater research output in the programme and a higher number of academic promotions. The Panel, however, notes the college's attempts to encourage greater female involvement in the IS field and the different types of support it provides female faculty members with in line with Bahraini labour law and regulations.
- At the end of the academic year 2019-2020, the IS Department consisted of 29 faculty members (one Full Professor, three Associate Professors, 21 Assistant Professors, two Teaching and Research Assistants, one Senior Lecturer, and one Lecturer). Of the total number of faculty members in the Department, 25 hold a Ph.D. in IS and related disciplines, whereas four hold master's degrees in the information field. The Panel is satisfied with the faculty's range of academic qualifications and professional experience, despite noting the low number of Full Professors (3.4%), which can partly be attributed to the low number of academic promotions as was explained above.
- The Unit of Teaching Excellence and Leadership (UTEL) provides continuous training for academics, and numerous junior faculty (fresh graduates) have completed the

Postgraduate Certificate in Academic Practice (PCAP) which is offered in collaboration with an institution in the UK. The Panel notes with appreciation the efforts that UoB puts into professionally developing faculty's academic practice. However, the Panel encourages participation in more international PD events that would provide faculty members with greater exposure to the latest IS trends and would help enrich their academic and research skills and expertise.

- Annual faculty appraisals are taken into consideration to identify faculty who need to be retained as well as those who need to be terminated, and all in compliance with both UoB and CSB regulations. Based on the SER and what was reported during interviews, the College of IT has enjoyed a low turnover rate. However, despite being requested, the Panel did not receive specifics on the retention rates of academic staff in the BSc in IS programme. The Panel recommends that the College should maintain records of the staff retention rate both at the programme and college levels.

### **Indicator 2.3: Physical and Material Resources**

*Physical and material resources are adequate in number, space, style and equipment; these include classrooms, teaching halls, laboratories and other study spaces; Information Technology facilities, library and learning resources.*

#### **Judgment: Addressed**

- The classes and laboratories of the IS Department are appropriate for the current student population. Based on the SER, the Department is housed on three floors. There are eight dedicated classrooms, each accommodating around 45 students and equipped with instructor Personal Computers (PCs) connected to the university network, overhead projectors, and white boards. The Department also has 13 laboratories, located on different floors of the building. Most computers are based on Microsoft Windows; however, one laboratory is equipped with Mac computers to allow students to be exposed to different operating systems. The Department also shares physical spaces with the other two departments in the College. This includes a large auditorium that can be used for teaching large sections of students and for hosting conferences, as well as general computing resources. In interviews, the Panel learned that the programme's facilities and IT laboratories are adequate.
- According to the IS senior survey analysis report, 90% of respondents were satisfied with the resources (laboratory facilities, computer facilities, and computer software) that the IS Department manages and makes available for students. Interviews with students confirmed to the Panel that IT resources (including WiFi) are adequate for their learning needs.

- UoB has a central library and five specialised libraries. The Science and IT Library supports the BSc in IS programme by having an adequate number of resources, such as printed books (5037), electronic journals (1104), electronic books (19,316), and electronic databases (45). In addition to the formal study areas in the library, there are adequate informal study spaces including those for special needs students. Finally, according to the IS senior exit survey analysis report, 98% of respondents were satisfied with the library resources.
- The IT Centre staff of UoB and the department technicians manage and maintain the IT facilities serving the programme. However, maintenance of equipment on warranty is done by the vendors. Additionally, there is a formal online help desk mechanism to manage specific requests for maintenance. The department technical team has the mandate of regularly checking and reporting the state of computing facilities and recommending replacement or upgrading. Other maintenance is carried out by the maintenance team based on requests. During interviews, the Panel learned that the IT resources are adequate, although it was noticed that some PCs are older than five years, which is not in line with the UoB policy on PC replacement. The Panel, thus, recommends that the College should consistently implement the university policy on PC replacement, while also taking into consideration multiple factors other than PC duration in years alone, in order to ensure the fitness of purpose of PCs utilized in the programme.
- Based on the Occupational Health and Safety (OHS) programme at UoB, the IS Department performs regular maintenance of the premises, facilities, and equipment on campus. Moreover, the IT College has Security and Safety Procedures that guide the health and safety of its facilities, and a Laboratory Safety Booklet specifically for students. This is in addition to UoB's well-equipped healthcare clinic that ensures the health and safety of students and staff on campus. All this is complemented with other safety arrangements around campus, which the Panel finds satisfactory.

## **Indicator 2.4: Management Information Systems**

*There are functioning management information and tracking systems that support the decision-making processes and evaluate the utilisation of laboratories, e-learning and e-resources, along with policies and procedures that ensure security of learners' records and accuracy of results.*

### **Judgment: Addressed**

- UoB uses a Student Information System (SIS) to manage information about academic programmes and students. The system provides a range of student data including personal and academic data, registered courses, attendance, and transcripts. Based on the role of the individual, the SIS provides different levels of access to the information stored in the SIS. The system also allows students to provide feedback on courses, submit grade appeals, and request academic advising. Overall, the Panel notes that the SIS is a

sophisticated decision-making tool at UoB but simultaneously suggests that additional facilities such as improved cohort analysis would be worthwhile (See Indicator 3.6).

- The SIS provides features that enable HoDs and other management teams at the College to access varied types of information on, for example, the available resources, student registration, and expected number of students who would graduate in a semester, which assist in different types of decision-making processes. To mention only a few, the data/reports generated from the SIS help senior management decide on the specific set of courses/sections to be offered; allocating and scheduling faculty load and student timetables; how to create class-laboratory combinations; and how to determine maximum capacity size for each class. Blackboard also allows the tracking of online activities and its reports, along with the reports that are generated about the use of MS Teams by students, help inform the decision-making processes in the College. However, the Panel notes that there is tracking of the utilization of some facilities in the programme but no tracking of the utilization of laboratories, which is something that the Panel recommends the College to implement.
- UoB has policies and procedures in place to check the accuracy of results and security/access authentication for learners' records. In its virtual site visit meetings, the Panel confirmed that there is regular backup and recovery of data based on a risk management plan. The Panel further confirmed in interviews that the process of tabulation is automated by the SIS and the accuracy of the student results are cross-verified at various levels by the course instructor, course coordinator, HoD, and two members of the moderation committee.
- The Panel confirms from submitted evidence and interviews with the college administrative and academic staff, that there is a clear and multi-level monitoring mechanism in place to ensure, with the help of the SIS, accuracy of the awarded student certificates and transcripts and their issuance in a timely manner.

## **Indicator 2.5: Student Support**

*There is appropriate student support available in terms of guidance, and care for students including students with special needs, newly admitted and transferred students, and students at risk of academic failure.*

### **Judgment: *Partially Addressed***

- UoB strives to provide a positive and enriching learning environment to all students. Different types of support are provided to students in terms of library, laboratories, e-learning and e-resources, guidance, and care. The Psychological Guidance Division and Healthcare Clinic provide counselling and healthcare support. The laboratory technicians provide support including inductions. The library provides information literacy and

orientation programmes. From interviews with various groups of stakeholders, the Panel confirms that appropriate student support is being provided to students of the BSc in IS programme.

- The Career Counselling Office organises the annual Career Day to help students meet employers. Additionally, the required internship is a good experience for students prior to their graduation and provides great exposure to career opportunities and challenges of the field of work. Nevertheless, the senior exit survey shows that 70% of students had low satisfaction with the benefits gained from the Career Counselling Office for preparing them for the job market. In addition, the Panel learned in interviews that there is lack of awareness among students regarding the services of this office. As a result, the Panel recommends that the College should raise students' awareness about the career counselling services available at UoB and encourage them to make the utmost use of them.
- At the start of the academic year, an induction event for newly admitted students takes place with well-prepared activities. These activities are organized by the Deanship of Student Affairs through the Department of Advice and Guidance. Students are introduced to academic and social services, facilities such as the library and IT services, events, and student activities provided and organized by the same Deanship. The University also provides students with a handbook detailing the services available to them. On its part, the College of IT also takes part in the induction activities that departments including the IS one organize. Interviews with students confirmed their satisfaction with the induction processes available at both the university and college level.
- Once in the programme, every student is assigned an academic advisor and is encouraged to meet them during their office hours. The Dean of the College sends emails to all advisors reminding them about the importance of academic advising and of how to support students on probation. The advisors themselves have online access to student data and can communicate and advise students on their choice of courses, number of courses to be taken, courses to be repeated for CGPA enhancement, and other similar matters. According to the SER, all students are obliged see their advisor at least once a semester. However, the Panel learned in interviews that this does not happen on a consistent basis. Also, the senior exit survey results show that less than 50% of the students had made use of the advisory services, although of that group a high percentage of students expressed satisfaction with the services received. Additionally, the Panel expressed concerns about the high number of dismissed students (i.e., 115 in 2017-2018 and 91 in 2018-2019). Based on all the above, the Panel recommends that the College should formally examine the reasons behind students' dismissal and should also evaluate the effectiveness of the academic advising system and explore strategies to create targeted mechanisms to especially address students on poor academic standing.
- The university ensures equal opportunities to all students regardless of gender and provides support to special needs students through the Disability Division in the Students

Services and Development Department. In terms of gender equality, the Panel learned in interviews that special efforts are made to attract female students to the programme. Whereas, with respect to support of special needs students, the University provides special transportation arrangements for students with mobility challenges and, in general, the campus is equipped with ramps and elevators to make facilities more accessible. In addition, the Students Services and Development Department provides a range of support services and recreational activities for students with disabilities, such as the visually impaired.

- Through the use of the SIS, students at risk of academic failure are identified and then contacted by their academic advisor for meetings and advice. The Panel was provided with a sample of advice given to at-risk students regarding the repeating of courses. Advisors' advice is recorded in the SIS and can be accessed by students at any time. However, it was not clear to the Panel what types of remedial support are provided to academically at-risk students and, therefore, the Panel advises that these be documented.
- UoB has a number of mechanisms in place for eliciting student feedback about the effectiveness of the support services it provides students with. For example, surveys and in particular the Senior Exit Survey, are an effective mechanism used to collect such feedback and enact improvements accordingly. The Programme's Student Advisory Committee (PSAC) is also another source of feedback, to which management's decisions/changes made based on student feedback are supposedly also reported. However, although meetings are being held by the College to look at student feedback about support services, no evidence of subsequent changes on the basis of this feedback was provided. The Panel, therefore, suggests that a more rigorous follow-up process for the implementation of student suggestions related to support services be implemented.

## Standard 3

### Academic Standards of Students and Graduates

*The students and graduates of the programme meet academic standards that are compatible with equivalent programmes in Bahrain, regionally and internationally.*

#### Indicator 3.1: Efficiency of the Assessment

*The assessment is effective and aligned with learning outcomes, to ensure attainment of the graduate attributes and academic standards of the programme.*

##### **Judgment: Addressed**

- UoB's Regulations of Study and Examinations specify policies for assessments. Samples of course material as well as interviews with faculty confirm that different assessment methods (e.g., midterms, assignments, projects, and quizzes) are used to evaluate students' skills from analytical and critical perspectives. The samples of examinations made available to the Panel indicate varying levels of complexity of assessments according to the level of courses. In addition, group assignments are given, for example, to elicit a system's technical requirements or to implement a database application. To ensure appropriate academic standards, examinations are subject to moderation according to a specific schedule as well as to proctoring. Weights of assessment items (e.g., quizzes, projects, and finals) depend on the university's and college council's regulations which require that 40% of the final grade is allocated to final examinations. In conclusion, the Panel finds that the assessment methods in the programme are overall appropriate in terms of their validity, reliability, level of complexity, and standards.
- With respect to the alignment of the assessments, each course syllabus includes the alignment of assessments (e.g., tests, laboratory experiments, and projects) to CILOs, which are aligned to the PILOs that are themselves aligned to the UILOs in which the graduate attributes are embedded (see Indicator 1.2).
- One way of measuring the achievement of PILOs in the BSc in IS programme is through the mapping of CILOs achievement. In the programme a well-developed spreadsheet is used to directly measure the achievement of CILOs and PILOs through the achievements of students in assessments. Once faculty members enter CILOs and their mapping to PILOs, as well as student grades for assessments and examination questions into the spreadsheet, the achievement of CILOs and PILOs is automatically calculated. The Panel appreciates the effort that has been invested into this ILOs Achievement spreadsheet template. As for PIs, these are assessed according to a two-year schedule, based on the use

of both direct methods (e.g., questions in assignments) and indirect methods (e.g., survey results). The faculty members prepare reports on the achievement of CILOs, PILOs, and PIs. However, the Panel finds the content of the reports provided as somewhat limited mainly to checkmarks without substantial analysis and conclusions; thus, raising questions about the usefulness of these reports. The Panel recommends, therefore, that the College should ensure that evaluation reports on ILOs achievement be completed more diligently, in order to benefit more from their contents in course and programme improvement.

- As for monitoring the implementation and improvement of the assessment process, the IS Department's Accreditation Committee (DAC) ensures consistency, level adequacy, and quality of assessments by reviewing course portfolios submitted by the faculty. From review of relevant documentation, the Panel is satisfied with the completeness of course portfolios in the programme.

### **Indicator 3.2: Academic Integrity**

*Academic integrity is ensured through the consistent implementation of relevant policies and procedures that deter plagiarism and other forms of academic misconduct (e.g. cheating, forging of results, and commissioning others to do the work).*

#### **Judgment: *Partially Addressed***

- Policies and procedures related to academic integrity and scientific research ethics at UoB apply for both students and faculty. The Deanship of Student Affairs is responsible for policies and procedures related to student academic integrity in terms of types of misconduct cases, consequences, and penalties. These policies and procedures are complemented by UoB's Regulations of Study and Examinations. Whereas, the Bylaw of Faculty Members, issued in the Board of Trustees Decision No. (1) of 2006, describes the academic disciplinary system of the University as well as the disciplinary measures as they apply to faculty. Finally, policies, procedures, and regulations regarding academic integrity are included in the Research Charter and in booklets and are distributed to all students, including freshman and new faculty, during the respective induction programmes.
- UoB relies on plagiarism software (Turnitin and SafeAssign) to detect similarity in assignments and, thus, cases of academic misconduct. Plagiarism is assumed if similarity exceeds 25%. However, the Panel learned in interviews that processes are not applied consistently and that only a small number of assignments is submitted through the plagiarism software. In addition, the Panel learned from academics that an assignment that does not exceed the acceptable 25% similarity level is considered free of plagiarism. Based on this, the Panel recommends that the College should reinforce its practices regarding academic integrity by requiring that all written assignments be checked for

plagiarism. In addition, the Panel recommends that the College should review its practice of defining an 'acceptable' similarity index, as plagiarism cannot solely be determined by exceeding a certain similarity percentage. The Panel also notes that the reference in course outlines to the definition of plagiarism and the university's plagiarism policy and penalties has not yet happened, as originally planned by the IS Department. The Panel, therefore, recommends that the College should expedite the inclusion of the university's accepted definition of plagiarism, its policy and penalties in all course outlines.

- The evidence submitted to the Panel describes some cases of plagiarism amongst students within the IS Department and the Panel finds the actions taken in these cases as appropriate. The Panel was also informed that records of academic misconduct and plagiarism are kept centrally at the college level. This, according to the Panel, is helpful for identifying repeated cases of plagiarism.

### **Indicator 3.3: Internal and External Moderation of Assessment**

*There are mechanisms in place to measure the effectiveness of the programme's internal and external moderation systems for setting assessment instruments and grading students' achievements.*

**Judgment: Partially Addressed**

- The importance of moderation is confirmed in the University Policy for Moderation of Assessment Regulations. This policy is implemented at the level of the IS Department through (i) the Exam and Grade Moderation Committee and (ii) the multiple stages that internal pre-moderation and internal post-moderation go through. Moderation forms are available to guide the moderators in their assigned tasks. The internal moderators are appointed by the Moderation Committee and are approved by the HoD, and they are expected to be familiar with the content of the courses they moderate or should have previously taught the courses. At the end of the examination period and upon receipt of the moderation forms, the Moderation Committee analyses the semester's moderation activities and develops an improvement plan accordingly, including all analysis results in a report that is submitted to the HoD and the Quality Assurance Committee (QAC).
- Once the department's Exam and Grade Moderation Committee submits its findings to the HoD and the QAC, the suggestions for improvement made because of the moderation process are directly incorporated into the department's annual self-evaluation report. The Panel notes that 2018-2019 and 2019-2020 assessment internal moderation reports do not indicate any major violation issues of quality assurance requirements in the assessments.
- In the Panel's opinion, the internal moderation process is generally well-defined. However, looking at the evidence provided, the Panel notes that moderator feedback is mainly limited to minor issues, such as the lack of mappings of examination questions to CILOs, or inappropriate durations of assessments, with there being no evidence provided

on the internal moderation process being formally evaluated or reviewed, as should be according to the Panel (See recommendation in the last bullet point of this indicator).

- With respect to external moderation, this takes place according to the college's course rolling plan, following a specific procedure in line with the Moderation of Assessment Regulations. Feedback from external moderators is collected by the course coordinators and the Moderation Committee of the programme. The Panel learned in interviews that the external moderation process is ad-hoc rather than planned. Visiting researchers or external examiners for Master programmes offered in the Department are often used as external moderators. Also, the external moderation process is more an external programme review than moderation. However, the Panel learned that the Institution is aware of this and is in the process of rectifying it. A draft policy for external moderation is also under review by the Quality Assurance & Accreditation Executive Committee (QAAEC). The Panel, therefore, recommends that the College should work on expediting the approval of the external moderation policy.
- At the end of the examination period and upon receipt of the moderation forms, the Moderation Committee analyses the semester's moderation activities and develops an improvement plan accordingly, including all analysis results in a report that is submitted to the HoD and the QAC. The 2018-2019 and 2019-2020 assessment external moderation reports do not indicate any major violation issues of quality assurance requirements in the assessments. Thus, no improvement action plans were developed. However, due to the issues with external moderation that were highlighted in Indicator 1.5, the Panel recommends that the College should develop mechanisms to ensure that pre- and post-moderation are more rigorously implemented and that post-moderation takes place before the release of grades.
- Like the internal moderation process, the Panel finds the external moderation lacking a formal mechanism through which it is evaluated or reviewed for effectiveness. Consequently, the Panel recommends that the College should develop a mechanism through which the effectiveness of the internal and external moderation processes is evaluated on a regular basis.

### **Indicator 3.4: Work-based Learning**

*Where assessed work-based learning takes place, there is a policy and procedures to manage the process and its assessment, to assure that the learning experience is appropriate in terms of content and level for meeting the intended learning outcomes.*

#### **Judgment: Addressed**

- One of the programme requirements of the BSc in IS is the completion of a two-months' work-based learning experience or internship (course 'ITIS483'). This is stipulated in the

Regulations of Study and Examinations. The internship is a one-credit hour course in which students can register after completing a total of 85 credits. The Panel found that policies and procedures for managing the internship are clear and detailed; they also help ensure an equivalent experience for all students.

- Guidelines for roles and responsibilities of each stakeholder involved in the internship (e.g., student, academic supervisor, field supervisor, internship provider) are provided in the 'Industrial Training Guidelines' document and are posted for the students on Blackboard. These guidelines cover different aspects, such as duration of the internship, student attendance, assessment, and grades. Regulations also allow for the completion of internships abroad, giving students the opportunity to be exposed to a different type of experience. Additionally, in the most recent revision of the internship guidelines, the special situation of the COVID-19 pandemic was considered by allowing online internships.
- Policies and guidelines as well as different evaluation methods used to measure to what degree the students attain the work-based course ILOs, provide evidence that the internship contributes to the achievement of the PILOs. Various evaluation forms (e.g., supervisor assessment, internship report, establishment assessment, and faculty visit report) are used as well as different feedback from supervisors, students, and faculty supervisors are collected to establish the achievement of the PILOs.
- The assessment of the student achievements in the internship relies on two inputs: industrial training programme report that the student submits, and evaluation by the on-site supervisor. While a suitable assessment mechanism is in place in terms of content and level, the Panel learned in interviews that there is only one departmental internship supervisor for the programme. This supervisor has to supervise approximately 40 interns during the summer break, normally including visiting them in their workplace and meeting with their on-site supervisors. The Panel expresses concerns that visiting all interns is time-consuming and advises that the College should engage more faculty in internship supervision, thus, giving all IS faculty the opportunity to meet up with potential employers and better understand the new trends in the IS field.
- In addition to relying on directly measuring the internship PILOs' achievement, the programme evaluates the effectiveness of the work-based learning experience indirectly through feedback collected *via* several surveys and evaluation forms distributed to the relevant stakeholders (e.g., student interns, academic internship supervisor, workplace supervisor). From interviews with alumni, employers, and industrial internship supervisors as well as provided documentation, the Panel was informed about (i) the overall readiness of students for internship, (ii) the positive perception of employers about UoB students compared to other universities' students, and (iii) the importance of soft skills like delivering presentations and reporting that students should be equipped with. The Panel learned in interviews that internship providers would prefer the BSc in IS

students to have better soft skills. According to data collected from 42 respondents about work destinations of the 2019 IS graduates, 79% were employed and 74% of them were employed in the private sector versus 21% in the public sector. The Panel acknowledges that these figures demonstrate the effectiveness of the internship. Moreover, in Summer 2019, out of 52 respondents, 27% received job offers during their internship and 29% of those who received job offers accepted them. Overall, therefore, the Panel confirms the effectiveness of the internship and encourages the IS Department to address the concerns of internship providers regarding the enhancement of soft skills.

### **Indicator 3.5: Capstone Project or Thesis/Dissertation Component**

*Where there is a capstone project or thesis/dissertation component, there are clear policies and procedures for supervision and evaluation which state the responsibilities and duties of both the supervisor and students, and there is a mechanism to monitor the related implementations and improvements.*

#### **Judgment: Addressed**

- The Senior Project course 'ITIS 499' is a culminating experience for students in the BSc in IS programme, during which students apply the concepts learned and skills gained in previous semesters to a group project of moderate scale. The mapping of the CILOs of the Senior Project course to PILOs demonstrates how the project contributes to the achievement of the programme outcomes. Students who completed a minimum of 85 credits as well as the course 'ENGL 219' are eligible to register for the Senior Project course. Samples of projects submitted to the Panel show the process of reviewing project proposals and the variety of topics addressed in the projects (e.g., blockchain, cloud computing, and gamification). According to the Senior Exit Survey, 92% of the respondents agree that their senior project prepared them for their professional life and was one of the most beneficial parts of the programme. However, the Panel found that the number of pages in some senior projects (e.g., 243 pages for the project entitled 'UoB Smart Campus: Using IoT and Mobile Application' and 161 pages for the project entitled 'Mobile Application-Social Media (Make a Wish) Application') is excessive and that students should be encouraged to describe and cover their projects more concisely.
- The Panel notes that there is a comprehensive senior project booklet, which is distributed to all students and faculty members, that clearly delineates the roles and responsibilities of each stakeholder in the senior project course. Stakeholders include the Senior Project Committee, supervisors, and students.
- The senior project booklet emphasizes the importance of monitoring and reviewing the progress of students in the senior project course. The Panel confirms the continuous monitoring of student progress based on the documentation submitted for review and also notes the different workshops/seminars that are planned throughout the senior

project course for the benefit of students. Participating in these workshops/seminars counts towards the student's final grade in the capstone course. Interviews with students and other relevant stakeholders indicated that there is general satisfaction with the capstone project supervision process and the related support provided during it.

- The assessment of senior projects according to the Panel is well-defined and involves project supervisors, internal examiners who are faculty members in the IS Department, the Senior Project Committee, and external examiners who are usually members of the Programme Industry Advisory Committee (PIAC). The assessment is broken down into the system/software, report, presentation, group work, seminar attendance, submission on time, and progress report(s). From review of relevant documentation, the Panel advises the IS Department through the Senior Project Committee to develop highly-detailed rubrics to evaluate the senior projects of students.
- The senior project course is continuously evaluated and, if deemed necessary, improved by the Senior Projects Committee. Examples of recent improvements include the development of the senior project handbook and the centralization of the senior project course management under a college committee rather than a departmental committee. The college also plans to develop an automated system for senior project management.

### **Indicator 3.6: Achievements of the Graduates**

*The achievements of the graduates are consonant with those achieved on equivalent programmes as expressed in their assessed work, rates of progression and first destinations.*

#### **Judgment: Addressed**

- From interviews with faculty, students, alumni, employers, and members of the PIAC, as well as from the review of graded students' assignments included in course portfolios, the Panel confirms that the level of students' achievements is appropriate for the BSc in IS programme and is comparable with similar programmes. This confirmation is demonstrated by (i) a well-articulated study plan, (ii) the senior project, (iii) the internship, and (iv) a set of mappings between the CILOs and PILOs, as well as mappings between the PILOs and the PEOs, where both (PILOs and PEOs) include entrepreneurship that involves the creation of new business ideas and innovation.
- The Panel finds that the figures related to students admitted, enrolled, dismissed, transferred, and graduated in the academic years 2016-2017, 2017-2018, and 2018-2019, remain almost the same with an average graduation rate of 67%. However, as was mentioned in Indicator 2.5, the Panel had concerns about the high number of dismissed students in particular.

- The Panel acknowledges that the IS Department tracks student progression in terms of retention rate, graduation rate, and progression rate. From a review of the relevant documentation and the SER, the Panel notes that the data used for tracking graduate destinations is only at a general level (e.g., employment status, gender, employed by gender, and employer by sector) without extra information on, for example, the main areas/fields where the programme graduates are employed. The Panel, therefore, suggests a more detailed analysis of the graduate destinations.
- In addition to evaluating students' during internship, employers have the opportunity of assessing graduates' profiles through surveys including the one conducted in 2019-2020. While the Panel acknowledges the benefits of such surveys; relying on a limited sample of 14 employers only, however, might not be representative of graduate readiness for the job market. The Panel, thus, encourages the IS Department to expand the sample of employer respondents. Nevertheless, the direct feedback that the Panel received from employers about the graduates during the virtual site visit was very favourable. Similarly, the results of the Senior Exit Survey indicated general satisfaction from the side of the graduating students toward the knowledge and skills they acquired through the IS curriculum and the training component (internship) of the programme. As a result, the Panel appreciates the general satisfaction expressed toward the graduates' profile.

## Standard 4

### Effectiveness of Quality Management and Assurance

*The arrangements in place for managing the programme, including quality assurance and continuous improvement, contribute to giving confidence in the programme.*

#### Indicator 4.1: Quality Assurance Management

*There is a clear quality assurance management system, in relation to the programme that ensures the institution's policies, procedures and regulations are applied effectively and consistently.*

#### **Judgment: Partially Addressed**

- Quality Assurance processes are defined in the Quality Manual, Quality Assurance and Enhancement Policy, and Programme Quality Assurance and Enhancement Policy. In its virtual site visit meeting with college administrative and academic staff, the Panel confirmed that there are institutional mechanisms at the university, college and department levels to review the quality assurance policies. Also, there are portals for communicating the policies to all stakeholders (e.g., QAAC webpages and several printed documents in which the policies are published).
- UoB's Programme Quality Assurance and Enhancement Policy provides the framework for programme-level quality assurance management and constitutes an integral component in the quality assurance management system in place. Additionally, there are quality assurance committees at the university and department level (e.g., QAAEC, CAC, and DAC) that oversee the quality assurance of academic programmes and their outcomes. At the college level, there is a Quality Assurance Office that ensures consistent application of all quality assurance practices across the College and which works closely with the department's accreditation committees. The different committees of the College prepare initial annual plans, and at the end of every year submit a progress report accordingly. The Dean of the College has meetings with the chairpersons of the committees to review progress and for coordination. The BSc in IS programme itself also has its own committee responsible for quality assurance and continuous improvement within the programme, the QAAC, which follows a specific operational plan to review the PEOs, PILOs, course portfolios, and survey data. The QAC also produces the programme's annual self-evaluation reports, which are prepared by considering various aspects of the programme and stakeholders' feedback.
- The DAC liaises with the college's Quality Assurance Office and is mandated to ensure compliance, assessment, and accreditation across all programmes in the Department. The meeting minutes submitted among the supporting materials contain evidence of the DAC pursuing this mandate to some extent. Whereas, the CAC at the department level is

mandated with the responsibility of ensuring continuous improvement of the programme. The CAC coordinates with staff members in the programme to facilitate the implementation of quality assurance practices, and consistency is attempted through the implementation of set operational plans. From interviews, the Panel found inconsistencies in the application of policies and procedures relevant to the BSc in IS programme (e.g. plagiarism policy as explained in Indicator 3.2). The Panel recommends that the College should evaluate the mechanisms used to ensure the consistent implementation of quality assurance-related policies and procedures.

- Capacity building and awareness sessions related to quality assurance are held for faculty members by the college Quality Assurance Office. This is in addition to awareness being raised about quality matters during committee meetings. From interviews with the college's administrative and academic staff, the Panel found that there are many committees in the College, and that the responsibility of quality assurance is distributed among these committees with little focus on role based/individual quality assurance responsibility. As a result, the Panel recommends that the College should raise awareness about quality assurance policies and procedures and inculcate a quality culture through which the understanding of individuals' roles is enhanced, in order to ensure widespread effectiveness of quality matters.
- With respect to monitoring, evaluating, and improving the quality assurance management system, a mechanism for this is included in the Quality Manual. The QAAEC is expected to review quality assurance policies and procedures at the university level; while, the CAC is expected to review compliance and accreditation activities at the college level, and the programme QAC to review the programme-level quality assurance management processes. In terms of the College of IT's quality assurance management system, this was internally reviewed by the QAAC in April 2019, to assess its effectiveness. While the Panel acknowledges this type of review, the Panel finds based on the submitted evidence and interview reports that the quality assurance management system is reviewed sporadically. The Panel, therefore, recommends that the College should evaluate the mechanism for monitoring, evaluating, and improving the quality assurance management system and make it more systematic. In addition, the Panel notes that the IT College does not have any formal agreements with external reviewers to assess the effectiveness of its quality assurance management system; although, it was further found that steps are being taken in this direction. The Panel, as a result, encourages the College to expedite this step.

## **Indicator 4.2: Programme Management and Leadership**

*The programme is managed in a way that demonstrates effective and responsible leadership and there are clear lines of accountability.*

**Judgment: Addressed**

- The programme management and leadership includes the Dean of the College, Quality Assurance Office Director, HoD, and the Department Committees. In addition, the College Council provides leadership at the College level and sets the strategic direction of the programme, provides it with support and monitors its progress; while the Department Council chaired by the HoD is responsible for the academic and administrative operations of the programme. Also, the Department of IS has two coordinators and eight different committees whose main function is to address various aspects of department operations. From interviews and the review of evidence, the Panel arrived at the conclusion that the programme is being guided and managed appropriately by means of the current organizational structures and hierarchies in place.
- There is representation of the IS Department at the college and university level decision-making committees. The Department Committees are chaired by senior academics and the Committees report to the HoD. The Committee chairs present on a regular basis a progress report about their committees' performance to the Dean, HoD, and the Department Council. In its virtual site visit meeting with the college administrative and academic staff, the Panel concluded that the existing reporting lines are clear and support and facilitate adequate communication and decision-making across the College.
- All committees have clear terms of reference stated in the Quality Manual. Additionally, at the stage of committee formation, the decision letter that goes out to the committee members always describes the roles and responsibilities of the committee along with its objectives and membership. The Quality Manual also includes job descriptions of leadership positions and faculty members; while, the Faculty Members Bylaw includes the roles, responsibilities, and authorities of key personnel, such as the University President, deans and HoDs. Based on this and on the review of the relevant documentation, the Panel is satisfied that all committees' responsibilities and duties of management positions are clearly stated.
- The clarity of the different managerial positions and of the terms of reference of the committees at various levels helps identify where different academic and administrative responsibilities lie, and who exactly is responsible for the custodianship of the academic standards of the programme at the different levels: department, college, and university. This was confirmed to the Panel from interviews with college administrative and academic staff.
- With the effective organizational structures and hierarchies in place to guide and manage the programme; the clear reporting lines that support communication and decision-making across the College; and the well-defined managerial positions and clear roles and responsibilities, the Panel is of the view that the current management of the BSc in IS programme is appropriately demonstrating effective and responsible leadership.

### **Indicator 4.3: Annual and Periodic Review of the Programme**

*There are arrangements for annual internal evaluation and periodic reviews of the programme that incorporate both internal and external feedback and mechanisms are in place to implement recommendations for improvement.*

#### **Judgment: Addressed**

- At UoB, there are policies and organizational arrangements in place for annual and periodic reviews of academic programmes. The annual self-evaluation reports of the programme are prepared by its QAC based on a range of different data sources, such as: course details; results of course evaluations conducted by the QAAC every semester; feedback from the department committees, PIAC, and PSAC; and survey results. One of the main objectives of the self-evaluation reports is to annually evaluate the achievement of PEOs by evaluating the achievement of the PILOs and CILOs. The summary of the evaluations and the recommendations made based on the Department Council meetings, meetings with the PIAC, assessment outcomes, and other data sources are all documented in the self-evaluation reports. While the Panel acknowledges this practice of annual self-evaluation, the Panel notes that these reports do not document the actions that had been implemented on previously identified areas of concern/improvement, so as to follow up on them and evaluate their effectiveness, in attempt to close the quality assurance loop. The reports also do not consider data such as student progression, retention, and graduation rates adequately. The Panel, therefore, urges that the College should ensure that the annual programme self-evaluation reports document the actions taken based on previous reports (see recommendation in next bullet point), and advises that student success rates be included in the reports and used appropriately for analysis.
- The QAAEC, CAC, QAC and Department Council are expected to monitor the implementation of the improvement plans' recommendations made after the annual evaluation. The Panel found that there were improvements made to the programme at various levels. However, the Panel noticed that there is lack of coordinated effort to systematically review/evaluate the progress made on the improvement plans. The Panel recommends that the College should ensure that the process of follow-up and improvement be systematically implemented, documented, and evaluated.
- The Programme Quality Assurance and Enhancement Policy provides the overall framework for the periodic review of the programme. This policy stipulates the collection of feedback from a multiplicity of sources, namely internal and external stakeholders and results of evaluations of ILOs achievement and of the effectiveness of the curriculum; whereas, the university review plan encompasses internal reviews as well as external reviews conducted by international accrediting bodies, national agencies, and external stakeholders.

- The last periodic review of the programme took place in April 2019 as a part of the internal review of the College of IT. In this review, multiple sources of feedback were relied on, whereby the programme's QAC collected feedback, for example, from the PIAC, PSAC, stakeholders' surveys, course portfolios, course evaluation reports and results, and benchmarking reports. This was further confirmed to the Panel during interviews with various stakeholders. The recommendations that resulted from the review were considered by the QAC and the Department Council and are reflected in the annual self-evaluation reports of the programme.
- In addition to the internal reviews, the programme has also gone through external evaluations, and has been listed on the NQF and received professional accreditation (ABET). The QAAEC, CAC, QAC, and the Department Council are responsible for monitoring the implementation of the periodic review recommendations. Again, while the Panel acknowledges the process in place for periodically reviewing the BSc in IT programme, the Panel nevertheless notes that the review/evaluation process of the progress made on the implementation of recommendations is not systematically conducted. The Panel, therefore, recommends that the College should evaluate the process of monitoring and reviewing the implementation of periodic reviews' recommendations, and should introduce appropriate and systematic mechanisms based on the evaluation results.

#### **Indicator 4.4: Benchmarking and Surveys**

*Benchmarking studies and the structured comments collected from stakeholders' surveys are analysed and the outcomes are used to inform decisions on programmes and are made available to the stakeholders.*

#### **Judgment: *Partially Addressed***

- The Benchmarking policy of the University provides the framework for different entities of the University to undertake benchmarking. The BSc in IS programme was benchmarked with the AIS/ACM curriculum. Benchmarking of the programme was also conducted with similar programmes offered by a select set of universities from across the world. The programme also satisfies the ABET accreditation. The benchmarking that took place was informal in nature, and the Panel was informed that the College has not yet created a systematic mechanism for entering into formal benchmarking agreements. However, it was further confirmed to the Panel that steps are being taken in this direction. The Panel, therefore, advises the College to work on expediting these steps. Moreover, during the virtual site visit meetings, the Panel found that the benchmarking exercise was limited solely to the curriculum. The Panel, therefore, recommends that the College should conduct a more comprehensive benchmarking exercise of the programme, covering different aspects and components of the academic and administrative activities and services it provides.

- The Panel notes from the review of the relevant documentation that the benchmarking that has taken place so far has managed to inform the review of the programme. This applies, for example, in the case of the AIS/ACM benchmarking exercise of 2017 on the basis of which the study plan of the programme was modified.
- In addition to benchmarking results, the BSc in IS programme benefits also from the feedback collected in the form of structured comments from internal and external stakeholders, including faculty, students, graduating students, alumni, and employers. Feedback is also collected through the programme's advisory committees, the PIAC and the PSAC.
- From the submitted documentation, the Panel found evidence of stakeholders' input being used to inform decision-making processes in the programme. For example, information gathered through the Senior Exit Survey has led to the programme's enhancement of self-development and employability skills due to the senior students' lack of satisfaction with such skills. Similarly, alumni input has led to the programme enhancing students' communication skills and to the addition of entrepreneurship training.
- The mechanism relied on in the programme for implementing improvements based on survey results involves using the collected feedback for the development of action plans, aiming at improving different aspects of the programme (e.g., curriculum, assessments, skills' development). Once all the feedback is analyzed, committees are assigned to start implementing different improvements included in the action plans. The progress of the committees is then monitored by a number of different quality assurance entities at the department, college, and university levels (e.g. QAAEC, CAC, QAC). As claimed in the SER, implemented changes are communicated to the different stakeholders in official meetings (e.g. PIAC meeting, PSAC meeting, faculty meeting). Despite this claim, however, the Panel concluded from interviews with various stakeholders that the mechanism to communicate the outcomes to the stakeholders (mainly the students) in a systematic manner is weak. The Panel, therefore, recommends that the College should evaluate the mechanism of communicating to stakeholders the changes or decisions made on the basis of their feedback.
- In terms of stakeholders who are aware for sure of specific changes made to the programme based on their feedback (e.g., members of the PIAC, alumni), the Panel notes general satisfaction on their part toward the programme's responsiveness to their feedback and suggestions. This was confirmed to the Panel during interviews with various groups of stakeholders.

## Indicator 4.5: Relevance to Labour market and Societal Needs

*The programme has a functioning advisory board and there is continuous scoping of the labour market and the national and societal needs, where appropriate for the programme type, to ensure the relevancy and currency of the programme.*

### **Judgment: Addressed**

- As mentioned earlier, the BSc in IS has an industrial advisory committee, the PIAC, with clear terms of reference that regulate and guide the duties of its members. The PIAC comprises employers, alumni, and representatives from the public and private sectors, who meet as a committee once a year. The aim of the PIAC is to contribute to the design and review of the programme's curriculum, enhancement of course delivery, and general improvement of the programme.
- From a review of the relevant documentation and from what was reported during interviews, the Panel found evidence indicating that the feedback of the PIAC is being used to inform decision-making processes in the programme. Some examples of changes made to the programme as a result of PIAC feedback include: inviting expert speakers from the industry to enrich the course material with the latest IS trends; adding new courses to the programme such as Cloud Computing and Data Analytics; and rescheduling of laboratory hours to be offered in the early hours of the day.
- The value of the PIAC lies mainly in offering the programme insight into what is needed by the labour market and by society, so that it prepares its graduates accordingly. Thus, PIAC members provide the programme with inputs based on external market perspectives. The mechanisms used to elicit such feedback from the PIAC take the form of annual meeting discussions that are documented in minutes of meetings.
- The student, alumni and employer surveys are additional mechanisms relied on in the programme to understand the labour market and societal requirements. Labour market studies also fall in the same category. In addition to relying on the findings of existing labour market studies conducted by other organizations (e.g. TAMKEEN), the College of IT conducted its own studies to ascertain the validity of the programme and to investigate the requirements of IT fields and skills needed by the market. The Panel acknowledges the value of these studies in keeping the programme relevant and up-to-date.
- All results from the labour market studies, surveys, and PIAC meetings are discussed by the programme's QAC and considered in the annual self-evaluation reports. They are also translated into improvement action plans as necessary and the QAAEC follows up on these action plans, and interviews confirmed to the Panel that monitoring and review of these mechanisms takes place.

## V. Conclusion

Taking into account the institution's own self-evaluation report, the evidence gathered from the interviews and documentation made available during the virtual site visit, the Panel draws the following conclusion in accordance with the DHR/BQA *Academic Programme Reviews (Cycle 2) Handbook, 2020*:

**There is Confidence in the Bachelor of Science in Information Systems of College Information Technology offered by the University of Bahrain.**

**In coming to its conclusion regarding the four Standards, the Panel notes, with appreciation, the following:**

1. the efforts that the University of Bahrain puts into professionally developing faculty's academic practice.
2. the effort that has been invested into the Intended Learning Outcomes Achievement spreadsheet template.
3. the general satisfaction expressed toward the graduates' profile.

**In terms of improvement, the Panel recommends that the University of Bahrain should:**

1. Develop and maintain a formal plan for the identification of risks to the Bachelor of Science in Information Systems programme, as well as an analysis of these risks and their mitigation.
2. Expand the programme's course-level benchmarking to include Course Intended Learning Outcomes and utilize the benchmarking results in the revision of the outcomes, to rectify some existing errors in them.
3. Review the mappings of Course Intended Learning Outcomes to Programme Intended Learning Outcomes to improve consistency and avoid mismatches existing in them.
4. Carry out more detailed benchmarking exercises with peer institutions, that also include comparing additional curriculum components (e.g., course content, practical aspects, and outcomes).
5. Review the list of textbooks used in the programme, to ensure all courses use recent textbooks.
6. Expand the university Teaching and Learning Policy, to include more information that directly could be used by academics.
7. Ensure that the teaching and learning methods are explicitly stated in the programme specification.

8. Ensure that the use of e-learning be formally included in relevant policies and applied more effectively.
9. Ensure that all policies relevant to assessment be updated and within a reasonable timeframe.
10. Consider looking at the success rate of transfer students, as well as of students who enter via the Orientation Programme, to determine if adjustments may need to be done to their admission process.
11. Review the current faculty workload to ensure a greater research output in the programme and a higher number of academic promotions.
12. Maintain records of the staff retention rate both at the programme and college levels.
13. Consistently implement the university policy on Personal Computers' replacement, while also taking into consideration multiple factors other than computer duration in years alone, in order to ensure the fitness of purpose of computers utilized in the programme.
14. Implement formal tracking of the utilization of facilities serving the programme.
15. Raise students' awareness about the career counselling services available at the University and encourage them to make the utmost use of them.
16. Formally examine the reasons behind students' dismissal and evaluate the effectiveness of the academic advising system, while exploring strategies to create targeted mechanisms to especially address students on poor academic standing.
17. Ensure that evaluation reports on Intended Learning Outcomes achievement be completed more diligently, in order to benefit more from their contents in course and programme improvement.
18. Reinforce practices related to academic integrity by requiring that all written assignments be checked for plagiarism. In addition, review the university practice of defining an 'acceptable' similarity index, as plagiarism cannot solely be determined by exceeding a certain similarity percentage.
19. Expedite the inclusion of the university's accepted definition of plagiarism, its policy, and penalties in all course outlines.
20. Work on expediting the approval of the external moderation policy.
21. Develop mechanisms to ensure that pre- and post-moderation are more rigorously implemented and that post-moderation takes place before the release of grades.
22. Develop a mechanism through which the effectiveness of the internal and external moderation processes is evaluated on a regular basis.
23. Evaluate the mechanisms used to ensure the consistent implementation of quality assurance-related policies and procedures.

24. Raise awareness about quality assurance policies and procedures and inculcate a quality culture through which the understanding of individuals' roles is enhanced, in order to ensure widespread effectiveness of quality matters.
25. Evaluate the mechanism for monitoring, evaluating, and improving the quality assurance management system and make it more systematic.
26. Ensure that the process of follow-up and improvement is systematically implemented, documented, and evaluated.
27. Evaluate the process of monitoring and reviewing the implementation of periodic reviews' recommendations, and introduce appropriate and systematic mechanisms based on the evaluation results.
28. Conduct a more comprehensive benchmarking exercise of the programme, covering different aspects and components of the academic and administrative activities and services it provides.
29. Evaluate the mechanism of communicating to stakeholders the changes or decisions made on the basis of their feedback.