



هيئة جودة التعليم والتدريب
Education & Training Quality Authority
KINGDOM OF BAHRAIN مملكة البحرين

Directorate of Higher Education Reviews Programme Review Report

**Bahrain Polytechnic
School of Information and Communications
Technology
Bachelor of Information and Communications
Technology
Kingdom of Bahrain**

Site Visit Date: 19-21 February 2024

HA110-C3-R110

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Acronyms

APR	Academic Programme Review
AI	Artificial Intelligence
ASSQAC	Academic Standards, Strategy & Quality Assurance Committee
BICT	Bachelor of Information and Communications Technology
BP	Bahrain Polytechnic
BQA	Education & Training Quality Authority
CAG	Curriculum Advisory Group
CILO	Course Intended Learning Outcome
CLP	Co-operative Learning Project
CTTL	Certificate in Tertiary Teaching and Learning
DHR	Directorate of Higher Education Reviews
EDICT	Engineering, Design and Information and Communications Technology
FQM	Faculty Quality Manager
HEI	Higher Education Institution
ICT	Information and Communications Technology
IT	Information Technology
LLC	Library Learning Centre
LMS	Learning Management System
NQF	National Qualifications Framework
PAD	Programme Approval Document
PBL	Problem and Project Based Learning
PILO	Programme Intended Learning Outcome
QA	Quality Assurance
QMS	Quality Management System
SER	Self-Evaluation Report
ToR	Terms of Reference

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 forms 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 judgements 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 judgement, as shown in Table 1 below.

Table 1: Criteria for Judgements

Criteria	Judgement
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 judgement 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*	Bahrain Polytechnic
College/ Department*	Faculty of Engineering Design and Information and Communications Technology/ School of Information and Communications Technology
Programme/ Qualification Title*	Bachelor of Information and Communications Technology (Database Systems) Bachelor of Information and Communications Technology (Information Systems) Bachelor of Information and Communications Technology (Networking) Bachelor of Information and Communications Technology (Programming)
Qualification Approval Number	Bahrain Polytechnic Academic Board Resolution Res2009.89 approved on 31 August 2009
NQF Level	8 (all majors)
Validity Period on NQF	5 years from the date of re-validation
Number of Units*	27 (all majors)
NQF Credit	480 (all majors)
Programme Aims*	The programme aims to develop work-ready, skilled Information and Communications Technology (ICT) graduates who are aware of the legal, ethical, and professional standards required to work in Bahrain and internationally. ICT graduates will be conversant with the latest ICT techniques and technologies to be flexible in the workplace and adaptable in a very fast-moving field. They will have the skills required to choose the optimal solution for a particular problem and to implement it following professional standards and will have the skills that enable them to work effectively in teams and to coherently present their ideas in written and oral form to a range of audiences
Programme Intended Learning Outcomes*	<u>Bachelor of ICT (Database Systems):</u> 1. Demonstrate critical knowledge and understanding of the latest Information and Communications Technology systems and techniques.

2. Recognise the professional, moral, and ethical issues involved in exploiting computer technology and be guided by appropriate professional, ethical and legal practices in a Bahrain context.
3. Demonstrate critical knowledge of where database systems fit into the structure of a modern information system.
4. Analyse and evaluate database management systems that are fit for purpose.
5. Comprehend and follow both the Database Development Life Cycle and the Systems Development Life Cycle.
6. Analyse existing systems and provide models and specifications of same.
7. Evaluate designs for new systems and assess capabilities of designed system against specified requirements.
8. Create or implement appropriate Information and Communications Technology systems from designs documents.
9. Document system solutions for a range of audiences.
10. Use specialist level skills to effectively manage and maintain existing systems.
11. Design a database suitable for the efficient storage of data, while conforming to industry standards and best practice.
12. Use query languages to store, retrieve and manipulate data.
13. Use modern industry standard development tools to design Web 2.0 database applications.
14. Plan, implement, maintain, and troubleshoot database systems, including backup and recovery strategies.
15. Use database programming techniques to solve business problems whilst following best practice, industry standards and professional ethics.
16. Practice as a Professional using 21st Century Skills

Bachelor of ICT (Information Systems):

1. Demonstrate critical knowledge and understanding of the latest Information and Communications Technology systems and techniques.
2. Recognise the professional, moral, and ethical issues involved in exploiting computer technology and be guided by appropriate professional, ethical and legal practices in a Bahrain context.

	<ol style="list-style-type: none"> 3. Comprehend and follow formal architecture design and implementation methodologies. 4. Demonstrate knowledge of a variety of techniques for requirements analysis of enterprise systems and infrastructure. 5. Exhibit critical knowledge of enterprise systems and infrastructure. 6. Analyse existing systems and provide models and specifications of same. 7. Evaluate designs for new systems and assess capabilities of designed system against specified requirements. 8. Create or implement appropriate Information and Communications Technology systems from designs documents. 9. Document system solutions for a range of audiences. 10. Use specialist level skills to effectively manage and maintain existing systems. 11. Evaluate various enterprise systems including operating systems, server software and make recommendations. 12. Analyse business requirements and design an appropriate information system architecture. 13. Implement an ICT infrastructure for small, medium and enterprise organisations that is fit for purpose. 14. Operate and manage ICT information systems. 15. Practice as a Professional using 21st Century Skills <p><u>Bachelor of ICT (Networking):</u></p> <ol style="list-style-type: none"> 1. Demonstrate critical knowledge and understanding of the latest Information and Communications Technology systems and techniques. 2. Recognise the professional, moral, and ethical issues involved in exploiting computer technology and be guided by appropriate professional, ethical and legal practices in a Bahrain context. 3. Demonstrate knowledge of core Local Area Network (LAN), Wide Area Network (WAN) and Mobile Communications concepts. 4. Define the concepts and technologies required to secure a network with fundamental understanding of network security. 5. Analyse existing systems and provide models and specifications of same. 6. Evaluate designs for new systems and assess capabilities of designed system against specified requirements.
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7. Create or implement appropriate Information and Communications Technology systems from designs documents.
8. Document system solutions for a range of audiences.
9. Use specialist level skills to effectively manage and maintain existing systems.
10. Configure and troubleshoot network devices ranging from small to enterprise and data centre networks.
11. Design and build a scalable internetworking network using LAN and WAN technologies.
12. Implement a secure network infrastructure and security policies.
13. Perform an analysis of a network using risk management and mitigation techniques.
14. Apply knowledge of mobile/wireless data communication technologies to design and implement a mobile/wireless communication solution.
15. Practice as a Professional using 21st Century Skills

Bachelor of ICT (Programming):

1. Demonstrate critical knowledge and understanding of the latest Information and Communications Technology systems and techniques.
2. Recognise the professional, moral, and ethical issues involved in exploiting computer technology and be guided by appropriate professional, ethical and legal practices in a Bahrain context.
3. Comprehend and follow formal software development methodologies.
4. Demonstrate knowledge of a variety of techniques for software requirements analysis
5. Exhibit critical knowledge of object-oriented programming.
6. Analyse existing systems and provide models and specifications of same.
7. Evaluate designs for new systems and assess capabilities of designed system against specified requirements.
8. Create or implement appropriate Information and Communications Technology systems from designs documents.
9. Document system solutions for a range of audiences.
10. Use specialist level skills to effectively manage and maintain existing systems.

	<p>11. Design, implement and test solutions from a problem description to meet specific user requirements using several programming languages.</p> <p>12. Design graphical user interfaces that conform to usability standards</p> <p>13. Analyse and debug existing components and software by following a test plan.</p> <p>14. Use a variety of development environments and software development kits to develop programs for different target platforms.</p> <p>15. Follow best practice, industry standards, professional ethics, diagram designing, programming and documentation conventions during the programming process.</p> <p>16. Practice as a Professional using 21st Century Skills</p>
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* Mandatory fields

III. Judgement Summary

**The Programme's Judgement:
Confidence**

Standard/ Indicator	Title	Judgement
Standard 1	The Learning Programme	Satisfied
Indicator 1.1	The Academic Planning Framework	Partially 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
Standard 2	Efficiency of the Programme	Satisfied
Indicator 2.1	Admitted Students	Addressed
Indicator 2.2	Academic Staff	Addressed
Indicator 2.3	Physical and Material Resources	Partially Addressed
Indicator 2.4	Management Information Systems	Addressed
Indicator 2.5	Student Support	Addressed
Standard 3	Academic Standards of Students and Graduates	Satisfied
Indicator 3.1	Efficiency of the Assessment	Partially Addressed
Indicator 3.2	Academic Integrity	Addressed
Indicator 3.3	Internal and External Moderation of Assessment	Addressed
Indicator 3.4	Work-based Learning	Partially Addressed
Indicator 3.5	Capstone Project or Thesis/Dissertation Component	Addressed
Indicator 3.6	Achievements of the Graduates	Addressed

Standard 4	Effectiveness of Quality Management and Assurance	Satisfied
Indicator 4.1	Quality Assurance Management	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	Addressed
Indicator 4.5	Relevance to Labour market and Societal Needs	Partially 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.

Judgement: *Partially Addressed*

- The Bachelor of Information and Communications Technology (BICT) is offered by the School of Information and Communications Technology (ICT) of the Faculty of Engineering, Design and Information and Communications Technology (EDICT) at Bahrain Polytechnic (BP). The BICT programme has a Programme Approval Document (PAD) that comprehensively specifies all aspects of the programme and its link to BP's strategic goals. BP also has a detailed Programme Approval Policy in place which includes all the procedures related to the development, approval, and revision of programmes and courses. The Panel notes that the validation of programmes in line with the requirements of the National Qualifications Framework (NQF) plays an important role during the development of BP programmes. Furthermore, the Panel learned in interviews that feedback from industry has led to the development of new programmes as well as to the revision of existing programmes. Links to the industry have also been praised by the British Chartered Institute for Information Technology which considers the links with local industry as one of the main strengths of BP. The BICT programme has full Chartered Information Technology Professional accreditation and Chartered Engineer (partial fulfilment) accreditation.
- The School of ICT has a risk register, which covers different programme related risks. However, the Panel questions the effectiveness of its usage as some risks have incomplete information. The Panel also notes that only four of the risks identified in the provided risk register have been resolved, while others are not. For example, the lack of lockable laboratories and a storekeeper which could pose a safety risk has not been addressed since 2014. Furthermore, some of the identified risks have no start date and no rating of likelihood or consequences. Upon request of the Panel, additional evidence was provided,

which includes a much smaller number of risks but does not indicate if or how previous risks were resolved. Therefore, the Panel recommends that BP should ensure that high-priority risks are promptly addressed and that the risk register and related action plans are regularly updated and monitored.

- BP has a Naming and Awarding Policy which ensures that its programmes meet the requirements of the NQF. As per the provided evidence, the BICT programme has been placed at NQF level 8 since 2016. The Panel notes that the title of the programme is concise and indicative of the qualification's type and content which is a BICT degree with four majors (programming, networking, information systems, and database systems) that students can choose from. The title of the programme is also accurately documented on the programme description documents, the institution's website and the students' certificates.
- The aims of the BICT programme are stated in the PADs and are clear and appropriate. The Panel found evidence of benchmarking the programme aims with other similar programmes, however the Panel was not provided with sufficient evidence which reflects that stakeholders are consistently involved in the development and revision of the programme's aims. Therefore, the Panel recommends that BP should ensure that stakeholders are consistently involved in the development and revision of the programme's aims.

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.

Judgement: *Partially Addressed*

- The institutional-level generic graduate attributes are part of the Strategic Plan. The PADs indicate how the institutional-level generic graduate attributes are achieved by the BICT programme majors. The PADs also include the Programme Intended Learning Outcomes (PILOs) of the BICT majors, which are mapped to the programme aims.
- The PILOs of the BICT majors are benchmarked with the PILOs of other similar programmes. However, the Panel notes that the PILOs are too numerous and often 'double-barrelled' (i.e., contain combinations of several outcomes into one outcome). Furthermore, some PILOs are too specific and can be set at a course level rather than a programme level. Therefore, the Panel recommends that the School of ICT should revise and ensure that the PILOs of the different BICT programme majors are clearly stated, measurable, and appropriate for the programme level.

- Each course is described in a comprehensive Course Descriptor, which includes the Course Intended Learning Outcomes (CILOs). The Panel notes that the CILOs are, in general, well-defined, appropriate for the course level and meet the NQF requirements. Mappings of CILOs to the PILOs are managed using the curriculum management system 'Masar' and displayed in the PADs. The Panel is satisfied that the CILOs are appropriately mapped to the PILOs.

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.

Judgement: Addressed

- The BICT curriculum comprises 480 credits that are expected to be completed over four years. The Panel notes that the programme is organised to provide academic progression year-on-year and includes an appropriate list of course pre-requisites. The first three semesters include common courses, before students specialise in their major. Course loads (typically 4 courses per semester) are appropriate, where a full-time student has a workload of approximately 35 hours a week.
- The BICT curriculum benefits from the annual and periodic reviews of the programme and the external stakeholders' involvement through the Curriculum Advisory Group (CAG), which contributes to the curriculum development and enhancement. Moreover, the programme accreditation by the British Chartered Institute for Information Technology demonstrates that the curriculum meets international standards. Furthermore, the Panel was provided with benchmarking reports and external programme monitor reports, which also confirm that the curriculum is regularly reviewed and meets international standards.
- The Panel notes that the BICT programme includes an appropriate balance of knowledge and skills which is ensured through the mapping of the CILOs of each course to the NQF sub-strands and employability skills. The Panel also notes the programme's focus on practical aspects including problem solving, communication, and course projects, which provide students with hands-on experience. Moreover, the BICT programme includes a Co-operative Learning Project (CLP), which provides an opportunity for students to get an early exposure to working in an industry, although it is not a mandatory course (see Indicator 3.4).
- The Panel examined the provided the Course Descriptor samples and noted that the course contents cover all elements expected in term of depth and breadth. This has been

confirmed by external course moderation reports. Textbooks and references are in general appropriate. The results of students' surveys which are conducted at the end of every course, indicate a high level of satisfaction with the teaching materials and 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.

Judgement: Addressed

- A range of teaching and learning methods are used in the BICT programme following the institutional Teaching and Learning Principles and the Teaching and Learning Policy. These methods include lectures, tutorials, group work, laboratory work, independent study hours, and work placement; all of which provide a conducive environment for student learning and support the attainment of learning outcomes and lifelong learning. E-learning is also well-established and used through the Moodle Learning Management System (LMS) across all programmes in BP. However, the Panel learned during the interviews that e-learning procedures were recently developed. The Panel received evidence for a proposed e-learning framework. Hence, the Panel recommends that BP should expedite the approval and implementation of the proposed e-learning framework.
- The teaching and learning philosophy that is used in the programme reflects the institution's focus on Problem and Project Based Learning (PBL), which is part of the institution's Strategic Plan and its commitment to bridge the gap between academia and industry. This focus on PBL is evident in the PADs for all the BICT majors and the provided samples of Course Descriptors. The effectiveness of the teaching methods has been confirmed during the site visit interviews with different stakeholders. The Panel also learned during the interviews that BP learning environment support all types of learning: formal, informal, and non-formal learning. BP students are encouraged to participate in external competitions and several courses allow them to get industrial exposure prior graduation and include laboratory work. In addition, the significant use of individual and group assignments as well as the Library Learning Centre (LLC), which includes dedicated discussion rooms and learning resources, support students independent learning and strengthen their perceptions and research capabilities as well as their abilities to create and innovate.

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.

Judgement: Addressed

- BP has numerous policies in place including the Assessment and Moderation Policy and the Academic Integrity and Honesty Policy, which are available to students and staff *via* various channels including Moodle, Staff e-Handbook and BP's SharePoint and website. The Assessment and Moderation Policy covers all the aspects related to the design, verification, conduct, marking and moderation of assessments. The assessment methods are listed in the Course Descriptors which are also accessible to students and staff *via* the Moodle platform. These methods include examinations, reports, assignments, quizzes which are conducted throughout the semester to keep students engaged.
- The Panel learned during interviews that assessment types have been adjusted based on student feedback in order to improve student learning. Moreover, the Panel notes that although there is some formative assessment (e.g., in-class exercises, weekly reflections on projects, etc.), most assessments are summative but many of them are returned to students with comments in order to help students improve their performance in future assessments. Grades are provided to students within two weeks of submission. Students confirmed in interviews that policies are being followed. Similarly, external moderation reports support the students' view.
- The external moderating reports and external monitor reports, that were made available to the Panel confirm that the grading mechanisms are rigorous. Internal and external moderation is taken seriously, and evidence of actions initiated after moderation was provided. The Panel also received evidence for the appropriate handling of academic misconduct in line with the Academic Integrity and Honesty Policy. Students also have the right to appeal on grades in line with the Student Academic Appeal Policy.

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.

Judgement: *Addressed*

- In addition to the students' Admission Policy, BP has a clear platform that includes all related procedures and guidelines for the students' enrolments from admission to graduation. The Admission Policy is aligned with the Higher Education Council requirements and regulations. The Policy and the related documents are shared with different stakeholders *via* the SharePoint Quality Management System, the website, BP Cloud, BP Banner System and/or emails. The admission criteria are clear to offer equal opportunities to all applicants, however, the School of ICT does not accept students with special needs. The Panel suggests making the necessary arrangements to allow students with special needs to have the opportunity to join the programme. The Panel also learned that students are only admitted in the beginning of the academic year, which is a loss of waiting time for them. The Panel suggests making the necessary arrangements to enrol students in the second semester.
- Direct admission in the BICT programme is subject to passing Entry Qualification Tests in English and Mathematics that are organised by external entities to ensure smooth progression through the programme. A local English test was developed by the foundation programme tutors following approved Programme Selection Criteria. If the entry tests are not passed, then students may complete a foundation programme. Based on the information provided in the Self-Evaluation Report (SER), most students go through the foundation programme before they start their specialisation courses.
- BP monitors the progression of all students throughout their studies and provides support at different levels starting from orientation upon starting the programme and continuing to graduation. The progression is recorded accurately in a safe and secured system in line with the Results and Reporting Policy that can identify any deficiencies of progression

that need attention and action for support. BP also has a Credit Recognition Policy which covers both recognition of prior learning and credit transfer.

- The Panel notes that the Student Admission Policy is regularly revised in light of national and international benchmarks. The Panel learned during the interviews that stakeholders' feedback is used as input for setting the requirements for entry to this programme. The Panel also learned that there are some arrangements for future approval for credit transfer in coordination with the University of Bahrain for some common courses within the programme.

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.

Judgement: Addressed

- BP has a Human Resources Management Policy, which is in line with the policies and procedures of the Civil Service Bureau for recruitment, promotion, and performance management. There is also a Promotion Policy that was recently approved for academic staff members. The Panel notes that recruitment is based on transparent criteria and procedures, all new staff members are provided with induction and preparation, and the appraisal and promotion of academic staff are done by dedicated committees.
- The Teaching and Learning Unit of the Academic Development Directorate provides academic staff with training programmes that are planned and organized by the Development Committee. The Applied Research and Entrepreneur Centre also provides training and support for academic staff to enhance their research output which is part of the promotion requirements. As a result of the support provided to research in the School of ICT, several research papers were recently published in journals and conferences. The Panel acknowledges the commitment of BP to support its academic staff's continuing professional development needs. The Panel also appreciates that the Certificate in Tertiary Teaching and Learning (CTTL) programme is compulsory for all academics, and the successful completion of which allows them to become Associate Fellow of the Higher Education Academy, which is based in the United Kingdom.
- The staff workload allocation is made with reference to the Workload Procedure and Guidelines and the timetables for each staff member are set based on the Timetabling Policy. Research work is one of the main parameters that are considered while workload is allocated to staff members. Special needs for women are also taken into consideration in the workload allocation.

- There are sufficient staff members with an appropriate range of academic qualifications, specialisations, and professional experience to teach on the programme. The size of the class is capped to about 20 – 25 students per course. The Panel notes the increase in the number of admitted students in the last two academic year which will require responsive and immediate recruitment to maintain the current class size. The Panel also notes that BP has no formal retention policy or procedure at present, which was confirmed during the interviews. However, the fair treatment and workload allocation in addition to the continuous support which academic staff members receive, have a positive effect on the retention rate. Nevertheless, the Panel recommends that BP should develop a clear process for monitoring staff turnover and ensuring the retention of highly qualified academic staff members.

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.

Judgement: *Partially Addressed*

- BP campus contains two seminar rooms with a capacity of 100 attendees. A good number of teaching rooms with a capacity between 24 to 44 students are available for teaching and learning purposes. The teaching rooms are well maintained and equipped with multimedia, smart board, white board, tutor's computer, internet connectivity, and an audio system. Specialised laboratories in good operational condition are available for BICT students including Apple Macintosh Laboratories and Windows Laboratories with all the required software installed.
- The Panel notes that there are adequate Information Technology (IT) facilities for the BICT students. All necessary hardware was secured for all classes and laboratories. Required IT tools and services are revised on annual basis as part of the annual programme review process, and as per the ICT Services Policy, the computers are formatted, and new software is installed at the beginning of every academic year. As per the SER and supporting evidence, the Panel noticed during the on-site campus tour that the ICT Services Directorate pays great attention to secure the current and the future IT needs. The Wi-Fi covers all the campus, and all students and staff members have their email addresses and passwords for accessing BP information systems inside and outside the campus.
- As observed during the on-site campus tour, BP has equipped LLC with 24 computers for students' usage. Moreover, it is equipped with various books, online resources, such as journals with subscription to Science Direct, Emerald, E-Book central, etc., to serve the BICT programme. The Academic Skill Centre with dedicated staff is also available for

students who need extra support for Mathematics and English. The procedure of ordering library resources outlines the steps required to order books under the Student Services Policy. Faculty can make requests for printed books or e-books using a book order form that is available on Student Services SharePoint. The library usage is tracked for development and the feedback is utilised for enhancing the services for learning and research.

- There are clear arrangements and procedures for the safety and security of all students, staff members and visitors of BP. There is a hotline that can be called 24/7 to report any potential problem or hazard that may appear on campus.
- During the on-site campus tour, the Panel noticed that the server room has insufficient air-conditioning to meet the required cooling load, which leads to high temperature that may lead to server damage and/or server life shortening. Therefore, the Panel recommends that BP should ensure that the air-conditioning in the server room meets the required cooling load to avoid server damage and/or server life shortening. During the on-site campus tour, it was also noticed that not all buildings serving the BICT programme are accessible to students or other stakeholders with disabilities, as there was no clear signage for accessibility features, in addition, automatic doors, special toilets and lifts were not installed in all buildings. Therefore, the Panel recommends that BP should ensure the availability of adequate facilities and services to cater for the needs of students or other stakeholders with disabilities.

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.

Judgement: Addressed

- BP uses various information systems to manage their educational process, including Moodle as its main LMS, and Banner as a Student Information System, in addition to supporting applications such as Sierra, SharePoint, Masar (AKARI), and Argos. Banner holds all student data at all levels from admission to graduation, while Moodle is the collaborative platform between students and instructors through which teaching and learning happens. The effectiveness of such systems is demonstrated by generated reports, which are utilised for decision making. However, the Panel noticed during the site visit, that those systems appear to work individually in a way that adds complexity to obtain some information that is needed from more than one system. Therefore, the Panel suggests developing a mechanism for systems integration and generating detailed course/programme reports for better decision making.

- BP has measures for the security of students' records and information. The security, confidentiality, and integrity of the records are always maintained. Moreover, data is backed up in a secure system to enable system recovery for operation at any time and data can be restored if necessary. All passwords should meet an acceptable level of security.
- The awarded certificates and the transcripts are issued accurately following the Results and Reporting Policy, which assures documentation consistency. All grades and certificates are generated and receive approvals at different levels during a timeframe that is known to all stakeholders.

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.

Judgement: Addressed

- BP provides all students with a wide range of services and support in terms of academic and non-academic guidance and care. All newly admitted students and transferred students are provided with an induction through an Orientation programme that is required to be attended. The induction covers all services including the various library services, e-learning and e-resources, health care, social services, fees exemption, among others. Students also receive clear information regarding their rights and responsibilities during their study at BP. Technical support is provided when needed by technicians.
- BP has a Students Council, which plays an important role in resolving different students matters in collaboration with other committees and units at the institution level. It also organises several academic and social events that can benefit all students. Furthermore, students receive a comprehensive career guidance through the Career and Employment Centre, which offers a drop-in service for students looking for career counselling. During the on-site campus tour, the Panel learned that the Centre keeps the bond with the graduates and maintains communication with them after graduation.
- On their entry to BP, all students are assigned an academic advisor, who meets with them at least twice per semester to clarify all academic issues related to the programme and support students in enhancing their learning experience. The Panel learned during the interviews and on-site campus tour that BP adopts the practice of integrating academic advising with mentoring. Students have to meet their mentors to discuss any personal and academic issues that can affect their academic life and progression. Moreover, BP has arrangements to continuously monitor the performance and progression of students, which are documented in the Enrolment and Academic Progression Policy. The Panel has

seen evidence on tracking the records of students at risk of academic failure through the SharePoint. Tutors of at-risk students are advised to keep an eye on them and monitor their performance.

- Although the BICT programme does not accept students with special needs, BP has arrangements that is decided case-by-case to cater for the encountered needs. However, during the site visit, the Panel learned that only one specialist was assigned to help students with special needs. Therefore, the Panel suggests assigning more resources to support special needs staffing.
- All students' services are regularly assessed for improvement, including academic advising, safety and campus security, career and counselling, ICT, library, mentoring, student registry, among others, through a survey. This survey gives flexibility for the students to highlight the most important need for improvement from the student point of view.

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.

Judgement: Partially Addressed

- The assessments include a variety of methods which vary in terms of complexity according to the respective course level. The Panel checked the samples of submitted assessment as part of the course portfolios and noted that the assessments are in line with current good practices and meet the academic standards of the programme. The submitted evidence also shows that course assessment tools are aligned with the CILOs, which are mapped to the PILOs. However, based on the submitted evidence and as confirmed during the interviews, the Panel found that there is no mechanism in place for direct or indirect measurement of PILOs. Therefore, the Panel recommends that BP should develop and implement a mechanism to measure the extent to which CILOs and PILOs are achieved.
- At the end of each semester, faculty members prepare Course Summary Reports that include a full review of the courses and areas for improvement. The SER indicates that these reports are discussed, and action plans are suggested. During the interviews with the Quality Assurance (QA) team, programme coordinators, and faculty members, the Panel learned that assessment improvements are triggered by feedback from stakeholders. The Panel acknowledges that BP has an appropriate mechanism in place for monitoring the implementation and improvement of the assessment process.

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).

Judgement: Addressed

- The Academic Integrity and Honesty Policy provides a structured framework for handling different forms of academic misconduct. Examples of academic misconduct cases were presented (cheating, plagiarism, and trust violation) and they were dealt with systematically following the published procedures. Investigations on the cases are made and suitable actions were taken based on the case and approved by the Dean, such as formal warning letters, failing the course, or getting a zero grade on the assessment.
- The Panel learned that during induction, students are made aware of general integrity rules, regulations, and types of violations, which are documented in the Academic Integrity and Honesty Policy, Students Handbook and the Students Rights and Responsibilities Policy. The staff members and the students are aware of the examination rules and procedures well before conducting the examination. The Panel was informed that online examinations are invigilated using Big Blu Button for monitoring students.
- The Panel also notes that BP relies on Turnitin in the detection of plagiarism. However, plagiarism may not be detected in the text generated by Artificial Intelligence (AI). Moreover, the allowed similarity percentage is not stated in the policy nor in any document. Therefore, the Panel recommends that BP should develop clear guidelines about the acceptable text similarity to ensure a consistent implementation and common understanding across all BP stakeholders. The Panel also suggests developing formal arrangements to cater for the challenges that the use of AI may pose.

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.

Judgement: Addressed

- As per the Assessment Policy, assessments must go through verification and moderation processes to ensure adequacy and fairness. Verification ensures the appropriateness and validity of the assessment before it is conducted, while moderation is done after the assessment to ensure fairness of grading according to the relevant rubric. Internal moderators are selected and approved at the beginning of the semester based on their specialisation by the Faculty Quality Manager (FQM) and approved by the Faculty Board. To ensure consistent implementation of the processes, the School of ICT uses the Verification and Moderation Tracking Sheet. The Panel was provided with samples of the BICT assessment internal verification and moderation, as part of the course portfolio, which show consistent implementation.

- The external moderation process is conducted and monitored systematically through the SharePoint. The FQM is responsible for the communication with external moderators and ensuring the consistent implementation of the process. The derived actions are discussed and taken care of before issuing the final assessment paper. Moreover, in some cases, some of the BICT courses were updated based on the external moderation recommendations which are included as part of the annual programme review improvement plan and reported to the programme committee and Faculty Board. To assure the effectiveness of the internal and external moderation processes, Assessment Moderation Audits are conducted.

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.

Judgement: *Partially Addressed*

- BP has the Offsite and Workplace Learning Activities Policy which assists staff in arranging and managing off-site course components and industry-based projects. However, the Panel notes that work placement is not mandatory and BICT students are given three options from which they can select one: (1) Entrepreneurship – Lean Startup (IT 8097) (60 Credits), (2) IT Research Project (IT 8098) (60 Credits), or (3) Co-operative Learning Project (IT 8x99) (sometimes also referred to as Industry Project) (60 Credits). Any of these options are for credit and evaluated. During interviews, the Panel learned that most students select the option of the CLP; however, students who cannot find an industrial-based IT project usually take the IT Research Project based at the institution. Therefore, the Panel recommends that the School of ICT should ensure that all students have equivalent learning experience and are exposed to on-site industrial experience.
- When taken, the CLP requires students to spend 15 weeks on site of a company, working on an industrial project. Roles and responsibilities of all stakeholders involved are defined in the Memorandum of Agreement between the student, BP, and the host organisation. The Panel confirmed in interviews that all stakeholders are aware of their roles and responsibilities. The Course Guide for IT8x99 Industry Project states that students must follow the working hours of the host organisation like other employees. During the interviews with employers and alumni, the Panel learned that the CLP has significantly helped students find employment. This is reflected in the high employment rates of graduates (see Indicator 3.6).
- Weekly reflections ensure that students remain on track and are assessed by the student's supervisor. At the end of their project, students have to submit an individual report or

thesis, conduct a demo and present a poster. Rubrics are provided to ensure consistent grading of the various assessments.

- The effectiveness of the Industry Project is evaluated in the External Monitor Report as well as the BICT Periodic Review. In addition, the Panel learned during interviews with stakeholders that the work-based learning components in the BICT programme are a key feature that distinguishes graduates from BP in the marketplace, thus supporting the programme aims of a practical education with high employability.

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.

Judgement: Addressed

- In the first semester of year four, students should complete the 'IT Project' (IT7099) which is sometimes called 'capstone project'. Students have to work independently on a project that may or may not have been provided by industry, which however, is carried out on campus. Given the scale of the project and its assessment with a written thesis and a final demonstration, the IT Project contributes to important PILOs related to critical knowledge, development methodologies, analysis, evaluation, and best practices. The roles and responsibilities of the supervisor and student are defined in the IT7099 Course Information Handbook. This handbook describes the different activities of students and supervisors. For instance, weekly meetings take place and prototype versions are demonstrated. A weekly journal is submitted by the student ensuring ongoing feedback and monitoring of progress.
- At the end of the semester, a project document and a thesis document are submitted. An evaluation panel with two members is formed and evaluates the student's work. A final demonstration takes place and includes a large poster and presentation. Detailed rubrics are used to assess the project and thesis to ensure consistent evaluation of all evaluation components. During the interviews, the Panel learned about the rigour of the evaluation and the fact that some students failed the capstone project. The Project is being evaluated like any regular course. This means that the Project also goes through external moderation with the supervisor providing a response to the external moderator's report.
- In the second semester of the fourth year, students can choose between three options to undertake, all equal to (60 credits), as mentioned in Indicator 3.4. The 'IT Research Project' (IT8098) is one of the options to select. The Course Guide for the IT8098 Research Project

describes all the requirements in terms of commitments of all involved parties and detailing the assessment and follow up process. Another option to select in the second semester of year four, is the 'Entrepreneurship Lean Start-Up' (IT8097), in which students can extend their capstone project (IT7099). Students who undertake this option should take the UDACITY Lean Start Up course, as stated in the Course Guide. The third option is the CLP.

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.

Judgement: Addressed

- The Panel examined the evidence provided by the School of ICT in the form of the PADs, Course Descriptors and Portfolios including the students' graded work and was able to confirm the appropriateness of students' achievements as well as compatibility with other similar undergraduate programmes offered. This also indicates that students possess the necessary knowledge and skills for post-university work upon graduation. Furthermore, the employment rate of BICT graduates after six months and after one year, which is more than 80%, indicates that they have the required attributes for work. The Panel appreciates that the School of ICT measures the employment rate of its graduates after six months and after one year from graduation to ensure that the programme's aims are achieved.
- The provided statistics show the number of students that were admitted, enrolled, dismissed, transferred, and graduated in the last five academic years. The Panel notes that the number of admitted students has significantly increased in the academic year 2021-2022. Although the retention rate of the academic year 2021-2022 has dropped slightly as compared to that of 2020-2021 (from 92.5% to 87.7%), the retention rate of both years is still acceptable.
- The Panel was presented with the Graduate Destination Report, Annual Programme Review Report, and Periodic Review Report of the BICT programme. The reports provide analysis on student progression and graduate destinations data. Such analysis and discussion of the data ensure that the programme objectives are met.
- The Alumni Survey indicate that more than 80% of the BP alumni have the problem-solving skill and generating innovative solutions skill. The results of the Employer Survey provided in the Annual Review Report of 2020-2021 indicate that employers are satisfied with the BICT graduates and their ability to create and innovate. Moreover, as stated in the SER and based on the Employers Survey, 90% of the employers confirm that BP graduates have the required employability skills. This was also reflected during the

interviews with the employers, as they confirmed that the BICT graduates are market ready. The Panel also met with the programme alumni, who indicated their satisfaction with the BICT programme. Overall, the Panel appreciates the positive feedback from external stakeholders and the high employment rates of the BICT graduates.

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.

Judgement: Addressed

- BP has policies and procedures in place related to teaching and learning, assessment, admission, support, and managing, maintaining, and securing records. There is also a Policies and Procedures Policy, which defines the institution's Quality Management System (QMS) and constitutes a framework for developing, implementing, and reviewing the institution's policies and procedures. The policies are revised every four years and published on the Institution's SharePoint within the Quality Tab, while student-related policies are also published on both Moodle and BP's website.
- QA processes are implemented and monitored across the EDICT Faculty and its schools by the Academic Standards, Strategy, and Quality Assurance Committee (ASSQAC), Academic Board, Faculty Board and Programme Committee. Terms of reference (ToR), membership, and frequency of the committee meetings are defined in BP documentations. The BP Quality Office conducts capacity building workshops to ensure that academic and support staff have a common understanding of QA and their individual roles in ensuring the effectiveness of provision. These training workshops are conducted throughout the academic year and verified during the interviews with the QA team, and faculty members.
- The SER states that the revision of policies and procedures as well as the programme reviews are opportunities for gap identification and improvement. Although these processes are appropriate, the Panel did not find a documented and systematic mechanism for monitoring, evaluating, and improving the QMS. Thus, the Panel recommends that BP should develop and implement a clear process for evaluating and improving the QMS.

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.

Judgement: Addressed

- The organisation chart for the EDICT Faculty is appropriate for the management of the BICT programme. The Dean is the head of Faculty which is made up of three schools, offering five bachelor's and two master's degrees. Each school has a Programme Manager who reports to the Head of School, while Course Coordinators and Tutors report to the Programme Managers. The Panel is of the view that the organisation chart reflects a well-defined chain of command, which facilitates coordination and oversight of programme activities. The Panel is also of the view that there are clearly defined reporting lines for the management of QA at the different levels, which ensures effective communication and enhances the decision-making processes.
- The academic responsibility and the custodianship of the academic standards of the programme rest on different levels within the institution. The ToR of BP boards, councils and committees clearly define their roles and responsibilities. The management posts (e.g., Dean, Head of School, Programme Manager, FQM, etc.) are also clearly defined and demonstrate appropriate division of responsibilities. From the provided evidence and interviews with different stakeholders, the Panel acknowledges that there is appropriate leadership and coordination in programme management.

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.

Judgement: Addressed

- The School of ICT conducts an annual review of its BICT programme, following the Annual Programme Procedure and relevant templates and guidelines of BP. The annual review report covers the teaching and learning methodologies, graduates' employment and destinations, satisfaction surveys of graduates and employers, CAG's feedback, and areas for improvement. There is analysis and discussion related to each element of the report and recommendations to be implemented. The Panel found evidence showcasing the implementation and monitoring of these recommendations at the course and programme levels.

- BP specifies the requirement for periodic programme reviews in the Periodic Programme Review Procedure. Periodic reviews are conducted every four years and are intended to improve the programme in terms of the quality and relevance to the market needs. The Panel was provided with the BICT periodic review report conducted in 2021-2022, covering the results of the annual reviews and course surveys for the previous four years, and including feedback from internal and external stakeholders. The result of this periodic review triggered a set of actions implemented and monitored through the quality improvement plan and tracked by the Faculty Board, Academic Council and ASSQAC.

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.

Judgement: Addressed

- In line with BP Benchmarking Policy, the BICT programme was benchmarked with local and international similar programmes in 2021. The selection of institutions to benchmark with are based on the Benchmarking Partner Selection Checklist in the Benchmarking Policy. The comparison consisted of several benchmarking indicators, which included programme aims, teaching and learning approaches, assessment, career opportunities, entry requirements, English language requirements, programme structure, and accreditation bodies. As a result of these benchmarks, actions were identified, and recommendations were provided. Recommendations are then discussed and used for programme improvement, which the Panel learned from the provided evidence and interviews with the QA team, Programme Coordinator, and faculty members.
- BP's Institutional Quality Survey Framework defines a set of surveys to collect comments from employers, students, alumni, staff, and other stakeholders. Furthermore, feedback and recommendations are collected from CAG in annual meetings. Results of these surveys are analysed in the forms of Analysis Reports and improvement actions are identified accordingly. The Panel found evidence of actions resulting from the analysis of surveys added to the quality improvement plan list, which are being implemented as part of the annual and periodic reviews. During the meeting with employers and external examiners, the Panel learned that the implemented improvements are usually communicated to them in the form of reports or during meetings, and that they are satisfied with improvements made at the course level and programme level as per their feedback.

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.

Judgement: *Partially Addressed*

- To ensure continuous scoping of the labour market needs and the currency of the programme, the BICT has an active CAG that meets once a year and includes discipline experts, employers, and alumni. The Panel was presented with evidence indicating that CAG recommendations triggered actions, which are systematically implemented and monitored to improve the courses and programme. Examples of such improvements is adding the new course 'Artificial Intelligence' (IT7009). However, the Panel could not find a clear ToR for the CAG, and hence, the Panel recommends that the School of ICT should define and document clear ToR for the CAG to ensure proper understanding of the roles and responsibilities.
- The Panel notes the school's continuous collaboration with industry partners and its ongoing efforts to meet evolving market demands to ensure that graduates are equipped for the evolving ICT industry, which are reflected in high employment rates and positive employer feedback. Moreover, annual and periodic reviews, surveys, and CAG meetings collectively ensure ongoing relevance and currency of the programme and courses. However, the Panel did not find evidence of a market study. Therefore, the Panel recommends that the School of ICT should conduct a market study to further ensure the relevance and currency of the BICT programme and its majors. Moreover, the Panel could not find evidence of reviewing the applied mechanisms for market scoping to ensure the relevance of the programme to the market needs. Therefore, the Panel recommends that BP should ensure that the applied mechanisms for market scoping are monitored and reviewed.

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 Information and Communications Technology offered by the School of Information and Communication Technology of Bahrain Polytechnic.

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

1. The Certificate in Tertiary Teaching and Learning programme is compulsory for all academics, and the successful completion of which allows academic staff to become Associate Fellow of the Higher Education Academy.
2. The School of Information and Communications Technology measures the employment rate of its graduates after six months and after one year from graduation to ensure that the programme's aims are achieved.
3. The positive feedback from external stakeholders and the high employment rates of the Bachelor of Information and Communications Technology programme graduates.

In terms of improvement, the Panel recommends that Bahrain Polytechnic and the School of Information and Communications Technology should:

1. Ensure that high-priority risks are promptly addressed and that the risk register and related action plans are regularly updated and monitored.
2. Ensure that stakeholders are consistently involved in the development and revision of the programme's aims.
3. Revise and ensure that the Programme Intended Learning Outcomes of the different BICT programme majors are clearly stated, measurable, and appropriate for the programme level.
4. Expedite the approval and implementation of the proposed e-learning framework.
5. Develop a clear process for monitoring staff turnover and ensuring the retention of highly qualified academic staff members.
6. Ensure that the air-conditioning in the server room meets the required cooling load to avoid server damage and/or server life shortening.

7. Ensure the availability of adequate facilities and services to cater for the needs of students and other stakeholders with disabilities.
8. Develop and implement a mechanism to measure the extent to which Course Intended Learning Outcomes and Programme Intended Learning Outcomes are achieved.
9. Develop clear guidelines about the acceptable text similarity to ensure a consistent implementation and common understanding across all Institution's stakeholders.
10. Ensure that all students have equivalent learning experience and are exposed to on-site industrial experience.
11. Develop and implement a clear process for evaluating and improving the Quality Management System.
12. Define and document clear Terms of Reference for the Curriculum Advisory Group to ensure proper understanding of the roles and responsibilities.
13. Conduct a market study to further ensure the relevance and currency of the BICT programme and its majors.
14. Ensure that the applied mechanisms for market scoping are monitored and reviewed.