



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

Directorate of Higher Education Reviews

Programmes-within-College Reviews Report

**B.Sc. in Civil Engineering
College of Engineering
University of Bahrain
Kingdom of Bahrain**

Date Reviewed: 4-7 April 2016

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Acronyms

ABET	Accreditation Board for Engineering and Technology
AIMS	Assessment Information Management System
BS-CENG	Bachelor of Science in Civil Engineering
CILO	Course Intended Learning Outcome
CoE	College of Engineering
DAC	Departmental Accreditation Committee
DHR	Directorate of Higher Education Reviews
ILO	Intended Learning Outcome
MIS	Management Information System
NQF	National Qualification Framework
PIAC	Programme Industrial Advisory Committee
PCAP	Postgraduate Certificate in Academic Practice
PEO	Programme Educational Objective
PILO	Programme Intended Learning Outcome
QAAC	Quality Assurance and Accreditation Center
BQA	Education & Training Quality Authority - Kingdom of Bahrain
SER	Self-Evaluation Report
UILO	University Intended Learning Outcome
UoB	University of Bahrain

The Programmes-within-College Reviews Process

A. The Programmes-within-College Reviews Framework

To meet the need to have a robust external quality assurance system in the Kingdom of Bahrain, the Directorate of Higher Education Reviews (DHR) of the Education & Training Quality Authority (BQA) has developed and is implementing two external quality review processes, namely: Institutional Reviews and Programmes-within-College Reviews which together will give confidence in Bahrain's higher education system nationally, regionally and internationally.

Programmes-within-College Reviews have three main objectives:

- to provide decision-makers (in the higher education institutions, the BQA, the Higher Education Council (HEC), students and their families, prospective employers of graduates and other stakeholders) with evidence-based judgements on the quality of learning programmes
- to support the development of internal quality assurance processes with information on emerging good practices and challenges, evaluative comments and continuing improvement
- to enhance the reputation of Bahrain's higher education regionally and internationally.

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

Indicator 1: The Learning Programme

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

Indicator 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 3: Academic Standards of the Graduates

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

Indicator 4: Effectiveness of Quality Management and Assurance

The arrangements in place for managing the programme, including quality assurance, give confidence in the programme.

The Review Panel (hereinafter referred to as ‘the Panel’) states in the Review Report whether the programme satisfies each Indicator. If the programme satisfies all four Indicators, the concluding statement will say that there is ‘confidence’ in the programme.

If two or three Indicators are satisfied, including Indicator 1, the programme will receive a ‘limited confidence’ judgement. If one or no Indicator is satisfied, or Indicator 1 is not satisfied, the judgement will be ‘no confidence’, as shown in Table 1 below.

Table 1: Criteria for Judgements

Criteria	Judgement
All four Indicators satisfied	Confidence
Two or three Indicators satisfied, including Indicator 1	Limited Confidence
One or no Indicator satisfied	No Confidence
All cases where Indicator 1 is not satisfied	

B. The Programmes-within-College Reviews Process at the University of Bahrain

A Programmes-within-College review of the programmes offered by College of Engineering of University of Bahrain was conducted by the DHR of the Education & Training Quality Authority in terms of its mandate to review the quality of higher education in Bahrain. The site visit took place from 4 to 7 April 2016 for the academic programmes offered by the college; these are B.Sc. in Civil Engineering, B.Sc. in Mechanical Engineering, B.Sc. in Process Instrumentation and Control Engineering, B.Sc. in Chemical Engineering, B.Sc. in Architecture, B.Sc. in Interior Design, B.Sc. Electrical Engineering and B.Sc. in Electronic Engineering.

UoB was notified by the DHR/BQA on 22 October 2015 that it would be subject to a Programmes-within-College review of the programmes offered by its College of Engineering with the site visit-taking place in April 2016. In preparation for the review, UoB conducted its college self-evaluation of all its programmes and submitted the SER(s) with appendices on the agreed date on 10 January 2016.

The DHR constituted a panel consisting of experts in the academic field of Engineering and in higher education who have experience of external programme quality reviews. The Panel comprised 15 reviewers.

This Report provides an account of the review process and the findings of the Panel for the B.Sc. in Civil Engineering programme based on:

- (i) analysis of the Self-Evaluation Report and supporting materials submitted by the institution prior to the external peer-review visit
- (ii) analysis derived from discussions with various stakeholders (faculty members, students, graduates and employers)
- (iii) analysis based on additional documentation requested and presented to the Panel during the site visit.

It is expected that UoB will use the findings presented in this Report to strengthen its Bachelor of Science in Civil Engineering programme. The DHR recognizes that quality assurance is the responsibility of the higher education institution itself. Hence, it is the right of UoB to decide how it will address the recommendations contained in the Review Report. Nevertheless, three months after the publication of this Report, UoB is required to submit to the DHR an improvement plan in response to the recommendations.

The DHR would like to extend its thanks to UoB for the co-operative manner in which it has participated in the Programmes-within-College review process. It also wishes to express its appreciation for the open discussions held in the course of the review and the professional conduct of the faculty and administrative staff of the College of Engineering.

C. Overview of the College of Engineering

The College of Engineering, at the University of Bahrain, owes its roots to the Gulf Technical College which was established in 1968 and which later became the Gulf Polytechnic in February 1981. In 1986, Amiri Decree No. (12) was issued to establish the University of Bahrain by a merger of the Gulf Polytechnic and the Bahrain University College. Following this decree, the new organization plan of the University of Bahrain was issued in November 21, 1987. The College of Engineering currently comprises five departments; namely the Department of Chemical Engineering, Department of Civil Engineering, Department of Electrical and Electronics Engineering, Department of Mechanical Engineering and Department of Architecture and Interior Design. The College is currently running a total of (11) academic programmes (8) at Bachelor and (3) at Master levels. The vision of the College of Engineering is to be among the leading colleges in the region and to maintain a respectful international status and reputation by sustaining a high quality of engineering education and scientific research. During the 2015-2016 academic year, there were (143) full time and (23) part-time faculty members supported by (60) administrative staff. The total number of students enrolled in the College at the time of the site visit was (4,113) students. The College obtained ABET accreditation for six

of its bachelor programmes in 2008 and 2014, these are the B.Sc. in Chemical Engineering, B.Sc. in Civil Engineering, B.Sc. in Electrical Engineering, B.Sc. in Electronics Engineering, B.Sc. in Mechanical Engineering and B.Sc. in Process Instrumentation and Control Engineering. In addition, the B.Sc. in Architecture obtained National Architectural Accrediting Board (NAAB) accreditation in 2014. Moreover, the College is in the process of obtaining accreditation by the Council for Interior Design Accreditation (CIDA) for the B.Sc. in Interior Design programme.

D. Overview of the B.Sc. in Civil Engineering

The Bachelor of Science in Civil Engineering is offered by the Department of Civil Engineering. The programme was first implemented in 1998-1999 and (9) students graduated in the academic year 2002-2003 as the first batch of graduates. During the academic year 2015-2016, there were (24) full time faculty members supported by (10) technicians and administrative staff members. At the time of the site visit, the total number of students enrolled in the programme was (1,077) students. The total number of graduates to date was (705) graduates. The Programme obtained ABET accreditation in 2008 and 2014.

E. Summary of Review Judgements

Table 2: Summary of Review Judgements for the B.Sc. in Civil Engineering

Indicator	Judgement
1: The Learning Programme	Satisfies
2: Efficiency of the Programme	Satisfies
3: Academic Standards of the Graduates	Satisfies
4: Effectiveness of Quality Management and Assurance	Satisfies
Overall Judgement	Confidence

1. Indicator 1: The Learning Programme

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

- 1.1 The University has a clear academic planning framework and related processes which are appropriate for its context and mission, and are set out in the University IDEAS Handbook. These have guided the formulation and statements of the aims of the B.Sc. in Civil Engineering (BS-CENG) programme, defined as Programme Educational Objectives (PEOs). The Panel finds these objectives to be clearly stated and appropriate to the type, level and discipline of a B.Sc. in Civil Engineering programme. The BS-CENG programme aims to 'provide comprehensive quality education to the students in civil engineering, and to adequately prepare them to meet the existing challenges in their profession and be capable of handling them in the future'. The PEOs of the BS-CENG programme are aligned with, and contribute to achievement of the University's vision 'excellence in student learning ... that contributes to the economic vitality, sustainability, and quality of life in the Kingdom, the region and beyond', as well as the mission of the College of Engineering 'educate students for positions of leadership and innovation in engineering and related fields'. These alignments are demonstrated through clear mappings included in the SER. The Panel appreciates that the BS-CENG programme aims and objectives are consistent with the vision and the strategic goals of the University of Bahrain in addressing the educational needs of the region.

- 1.2 The BS-CENG curriculum is presented over four academic years, organised into eight semesters, comprising a total of (138) credit hours. The curriculum includes (33) credit hours of basic science and mathematics courses, (21) credit hours of general university education requirements, and (84) credit hours specialised engineering courses. Semesters 1 to 6 are prescribed (i.e. all courses are required), whereas in each of Semesters 7 and 8, students are required to select an elective course (3 credit hours each) from a list of specialised civil engineering courses. The Panel notes that the curriculum provides effective academic progression, both year-on-year, and through the courses and engineering subjects, while ensuring an appropriate student workload. Prerequisites are clearly identified and their implementation is monitored by the Registrar's Office software. Overall, the curriculum enables the students' progression from mathematics and basic science courses, to engineering science courses, followed by senior level design and technical civil engineering courses. The inclusion of a Capstone Senior Design Project (CENG 490) in the final year enables the students to incorporate the knowledge and skills they acquired in earlier courses in addressing a major design project in civil engineering. The Panel appreciates that the BS-CENG curriculum is organised to support appropriate academic progression, and that the workload apportioned to students is suitable. The Panel also notes that there is an appropriate balance between theory and practice as well as between knowledge

and skills, and within civil engineering subjects, of analysis, design and construction. During interviews, faculty members indicated that, by virtue of the course activities in the engineering analysis and design courses, students develop their civil engineering knowledge and practical skills. Moreover, the Industrial Training courses (CENG 299 and CENG 399), as well as the Senior Design Project (CENG 490) contribute to their preparedness for future careers in civil engineering. This was confirmed by senior students and recent alumni interviewed by the Panel. The Panel appreciates that the intellectual structure of the BS-CENG curriculum offers a sound balance between knowledge and skills outcomes to address the demands of the civil engineering industry within Bahrain and the Gulf region.

- 1.3 With regards to the skills developed in the curriculum, the Panel notes that areas such as technical and design skills, and teamwork are well catered for, whereas written communication needs to be enhanced. The Panel acknowledges the Department's efforts to incorporate oral and written communication skills in several courses to achieve the programme learning outcome 'g: an ability to communicate effectively in both oral and written form'. Moreover, students are required to submit a written technical report and make PowerPoint presentations in several courses including, Junior Project course (CENG 290), and Senior Design Project course (CENG 490). However, upon examining samples of project reports during the site visit, the Panel finds that the written communication skills are in need of honing. The Panel's views were also confirmed by the alumni and external stakeholders interviewed during the site visit. The Panel recommends that the College should revise the existing mechanisms for developing the students' written communication skills, in order to achieve the programme's learning outcomes.
- 1.4 The Syllabus design of the BS-CENG curriculum is informed by a range of processes including: implementation of internal quality assurance regulations; conforming to the ABET accreditation criteria for engineering programmes; and engagement with local civil engineering practitioners. From the review of the course documents provided during the site visit, the Panel notes that the course specifications include relevant information, such as Course Intended Learning Outcomes (CILOs) and mappings of these to Programme Intended Learning Outcomes (PILOs); teaching and assessment methods; weekly topics; textbooks as well as references to recent research findings. Faculty members interviewed by the Panel indicated that a 'Course Syllabus Form' developed by the Quality Assurance and Accreditation Centre (QAAC) is followed in the preparation of the course specifications to ensure unified documentation of the syllabi. During interviews, students informed the Panel that the information provided in course syllabi is clear and generally helpful. In its interviews with senior management, the Panel was informed that an ABET accreditation was recently completed in 2014, concluding that the BS-CENG syllabus is specifically aligned with the ABET criteria for such a programme. The Panel also learned that the QAAC

recommendations as well as those from the PIAC, students and alumni are also implemented. In the view of the Panel, all these inputs ensure the syllabus breadth, depth and relevance to the professional practice. The Panel appreciates that the syllabus is overall well-documented, and is aligned to internal and external criteria to ensure it meets the international norms of a bachelor degree in civil engineering.

- 1.5 The Intended Learning Outcomes of the BS-CENG programme are based on the ABET Criterion-3 'Programme Outcomes', supplemented by two additional specific civil engineering programme outcomes. The (13) PILOs are clearly stated in programme documents and are appropriate to the level of a B.Sc. in Civil Engineering programme. From examining provided evidence, the Panel notes that the PILOs are consonant with the BS-CENG programme's educational objectives of having graduates who can engage in Civil Engineering professions in public and private sectors, pursue ongoing professional development activities, and advance in their careers. The alignment of the BS-CENG programme ILOs with the PEOs, is comprehensively detailed in the SER. In its interviews with faculty members, the Panel learned that the Department's Accreditation Committee (DAC) facilitated the processes for the PILOs development, in collaboration with the Programme Industry Advisory Committee (PIAC) and the Student Advisory Committee (SAC). The Panel appreciates that appropriately-developed programme learning outcomes are in place and contribute effectively to the achievement of the BS-CENG programme's objectives.
- 1.6 The IDEAS Handbook stipulates that 'every course should have clearly stated outcomes that specify the skills, abilities, and knowledge expected from a student who successfully passes the course'. The guidelines for the development of Course Intended Learning Outcomes (CILOs) are clearly outlined in the UoB Outcome-Based Assessment Booklet. During interviews with faculty members, the Panel was informed that each course was carefully designed to have a well-defined set of Course ILOs that are specific, achievable, measurable and appropriate to course level. Faculty members also indicated that the developed CILOs guide the selection of teaching methods and the design of students' assessments. A review of a selection of course files during the site visit confirmed to the Panel that each course specification includes clearly stated CILOs that reflect the course level, in that lower level courses have outcomes relating to the 'lower' cognitive processes (such as knowledge and comprehension), whereas higher level courses have outcomes related to higher cognitive processes (such as evaluation and critical thinking). The Panel also notes that the Course ILOs are effectively mapped to the Programme ILOs, as detailed in the SER. The Panel appreciates that clear Course Intended Learning Outcomes are an integral part of the curriculum design, and are rigorously mapped to the Programme Intended Learning Outcomes.
- 1.7 The BS-CENG curriculum includes work-based learning in the form of two compulsory Industrial Training courses (CENG 299 and CENG 399), during which

students are placed in a work environment in government or private establishments for eight weeks. The industrial training courses aim at exposing the students to real work environments and enable them to apply the theory, knowledge and practical experience they acquired from courses. The Panel notes that the two courses have clearly stated ILOs which contribute to the achievement of the programme ILOs, including the 'ability to function on multidisciplinary teams' (PILO-d), 'ability to communicate effectively in both oral and written form' (PILO-g), 'understand the impact of engineering solutions in a global, economic, environmental, and societal context' (PILO-h), and the 'ability to demonstrate the capability in management, business, public policy, and leadership' (PILO-l). There is a clear and appropriate assessment and grading scheme, and achievement is recognised through the award of (1) credit hour for each course. The final grade for the course is distributed as: Company Assessment (20%), Attendance (40%), Academic Supervisor Assessment (10%) and Training Report (30%). The Panel was provided with adequate evidence on the implementation of the Student Assessment Forms (by the industrial supervisor and the academic supervisor) as well as samples of industrial training report. Students interviewed by the Panel indicated that industrial training provides them with opportunities to adapt to local work environments and acquire the necessary professional skills for their specializations. During interviews with external stakeholders, including members of the Programme Industry Advisory Committee, employers and external project examiners, the Panel learned about how relevant and valuable these opportunities are for the hosting organization as well, as it provides them with the opportunity to select potential future employees. The Panel appreciates that work-based learning is integrated in the curriculum and contributes effectively to the achievement of the programme outcomes.

- 1.8 There is no explicit teaching and learning policy at the University, College or Department level; however, elements of teaching and learning are included in a number of university-wide policies, such as the 'Regulations of Study and Examinations at University of Bahrain', the 'Programme Quality Assurance and Enhancement Policy' as well as the IDEAS Handbook. According to the SER, a variety of teaching methods are employed in the CENG department, the most common being interactive lectures, problem solving, case studies, group work and practical laboratory training. Faculty members interviewed by the Panel indicated that they base the selection of teaching methods on the learning outcomes and subjects within each course. The Panel reviewed the teaching methods included in the course specifications, and found them to be overall appropriate. During interviews with faculty members and students, the Panel learned that many courses are taught in 'sections', involving repeat teaching to sub-groups of students, as a way of working with large course cohorts. In the view of the Panel, there is a need to push for the adoption of e-learning as an ancillary to current teaching methods to address this issue. In its interviews with senior management, the Panel was informed that there is

no explicit policy on e-Learning; individual teachers choose their own approach to e-Learning, with an extensive range of central training and support available for staff. Students interviewed by the Panel were generally very positive about the teaching in their courses and confirmed that a range of teaching methods is being used. These views are supported by the results of the Senior Exit Survey. However, some students commented that there was a variability in the teaching practice with some faculty members being better than others. The students indicated that there needs to be more emphasis on developing the presentation skills of some faculty members. The Programme Quality Assurance and Enhancement Policy stipulates that 'Learning and teaching activities and the commitment to quality assurance and enhancement should be supported by relevant and comprehensive provision for educational and staff development'. The Panel concurs and recommends that the College should engage with ideas and guidance on principles and methods of modern teaching, including: use of e-Learning, and how to teach large course cohorts effectively and efficiently. This should inform development of explicit departmental guidance on teaching strategies, and revision of teaching practice.

- 1.9 With regards to the development of independent learning, the Panel notes that the BS-CENG courses include a range of activities - such as case studies and projects - designed to encourage student participation and engagement. The curriculum also includes courses focusing on professional practice and application, in particular the Junior and Senior Projects; Training Courses; Construction Engineering; and Construction Management courses. Most courses include practice-based components, e.g.: assignments on application of theory to practical problems; and in some courses, site visits. The Panel learned during interviews that students particularly value the Senior Projects and the industrial Training Courses. The Panel appreciates that independent learning and exposure to professional practice are ensured in the curriculum through the implementation of effective mechanisms.
- 1.10 The IDEAS Handbook, developed by the University QAAC to support implementation and improvement of outcomes-based assessment practices, sets out a university framework of policy, procedures and guidance on assessment of learning outcomes. In addition, a set of policies and procedures have been developed to guide the design and implementation of assessment tools; these include the Study and Examination Regulations at the University of Bahrain, Assessment and Moderation Policy, and Anti-Plagiarism Policy. The Panel notes that these policies collectively address essential aspects of students' assessment including: assessment guidelines, alignment of assessment and learning outcomes, grading guidelines, prompt feedback to students, moderation and grade distribution guidelines, as well as the fair and consistent application of assessment regulations. The SER refers to the use of both summative and formative assessment, employing a variety of assessment tools to assess the extent to which students are meeting the Course ILOs. The Panel notes, from

the review of course documents, that generally a variety of assessment methods and techniques are utilised, with the norm being two mid-term assignments and one end of semester examination. The Panel also notes that the course syllabus, provided to students at the beginning of each semester, includes adequate information on the types of assessments used and their relative weightage. Students interviewed by the Panel indicated that they are aware of the assessment policies and how to appeal their grades if they had a problem with assessment. The Panel appreciates that an institutional assessment framework, of policy, procedures and regulations, is in place for the transparent and rigorous assessment of students' work.

1.11 With regards to feedback on assessment results, the Assessment and Moderation Policy stipulates that 'prompt and objective feedback should be provided to students on their assessment results within two weeks from the date of the assessment activity'. However, during interviews with students, the Panel heard mixed views on the effectiveness of feedback they receive. Students indicated that the quality of feedback depended on individual staff: some gave very prompt, helpful feedback, including model answers; while others gave them the grades with little feedback. Upon probing this issue with faculty members, the Panel was informed that the large class sizes make it difficult to provide effective feedback for all students. The Panel recommends that the College should develop and implement appropriate mechanisms to ensure the effective implementation of the students' feedback policy, particularly in teaching large student cohorts .

1.12 In coming to its conclusion regarding The Learning Programme, the Panel notes, *with appreciation*, the following:

- The BS-CENG programme aims and objectives are consistent with the mission and the strategic goals of the University of Bahrain in addressing the educational needs of the region.
- The curriculum is organized to support appropriate academic progression, and the workload apportioned to students is suitable.
- The intellectual structure of the curriculum offers a sound balance between knowledge and skills to address the demands of the civil engineering industry within Bahrain and the Gulf region.
- The syllabus is well documented, and is aligned to internal and external criteria to ensure it meets international norms of a bachelor degree in civil engineering.
- Appropriately-developed programme learning outcomes are in place and contribute effectively to the achievement of the programme's objectives.
- Clear Course Intended Learning Outcomes are an integral part of the curriculum design, and are rigorously mapped to the Programme Intended Learning Outcomes.
- Work-based learning is integrated in the curriculum and contributes effectively to the achievement of the programme outcomes.

- Independent learning and exposure to professional practice are ensured in the curriculum through the implementation of effective mechanisms.
- An institutional assessment framework, of policy, procedures and regulations, is in place for the transparent and rigorous assessment of students' work

1.13 In terms of improvement the Panel **recommends** that the College should:

- revise existing mechanisms for developing the students' written communication skills in order to ensure the achievement of programme outcomes
- develop an explicit departmental guidance on teaching strategies, including: methods of modern teaching, use of e-Learning, and effective teaching of large course cohorts
- develop and implement appropriate mechanisms to ensure the effective implementation of the students' feedback policy, particularly in teaching large student cohorts.

1.14 Judgement

On balance, the Panel concludes that the programme **satisfies** the Indicator on **The Learning Programme**.

2. Indicator 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.

- 2.1 Admission to the B.Sc. in Civil Engineering programme is determined by the institutional policies and procedures for admission in undergraduate programmes. In terms of these policies, the prospective student must have a high school grade of at least (70%) and pass a personal interview as well as an aptitude test conducted by the University. Although there are no minimum language requirements such as TOEFL/IELTS, students who have a secondary school grade of less than (90%) are required to complete an Orientation English Programme - consisting of a non-credited (9) hours per week course (ENGLR 015) - before joining the programme. The Panel notes that as part of the special requirements for the College of Engineering, students coming from private schools must pass a standard international examination (IGCSE, GCSE) of at least a grade of (C) particularly in English, mathematics, any two courses from physics, chemistry, biology or any other scientific subject. During interviews, the Panel confirmed that currently there are no additional admission requirements for the B.Sc. in Civil Engineering programme. The Panel notes that the admission policies and procedures, including those for transfer students, are clearly stated in the Study and Examination Regulations and are published on the university website as well as in university catalogues. The Panel also notes that the admission policies are periodically reviewed, in light of analysis of students' performance and in alignment with international standards. This is evidenced from the introduction of the Aptitude Test as an admission requirement in the last review. The Panel appreciates that clear admissions policies are widely communicated, and their implementation is periodically reviewed.
- 2.2 According to the SER, during the academic year 2014-2015, there were (870) students registered in the BS-CENG programme (45% female and 55% male) with Bahraini students constituting the majority (80%), in addition to (18%) students from GCC & Arab counties, and (2%) from other countries. During interviews, the Panel learned that whilst there are no specific examinations designed for admission to the BS-CENG programme, the university entrance examination, the admission interviews, and the aptitude test are considered adequate by the Panel to recruit appropriate students for the programme. The Panel acknowledges that these requirements are just adequate to filter students who match the aims of the programme. However, the Panel notes that over recent years the number of students admitted to the BS-CENG programme has been increasing, with the total registered students increasing from (682) in 2012-2013 to (870) in 2014-2015. At the time of site visit, the total number of registered students was (1,077). This has created a problem in that the total number of students is now too high for the current employed staff. The course-level QA reports identified problems

in students dropout rates, particularly in pre-requisite courses of mathematics and physics. These problems are recurring over successive years; however, there has been a lack of improvement action to-date. In its interviews with senior management, the Panel learned that the University is aware of these problems, and is working on plans, including a proposal to introduce a Foundation Programme. The Panel recommends that the College should lead rapid action to manage the number of students admitted to the BS-CENG Programme, to match staff capacity, and to ensure that the students admitted have the relevant pre-requisite knowledge.

- 2.3 The BS-CENG programme is offered and managed by the Civil Engineering Department. Clear lines of accountability are in place and a well-managed structure exists with well-defined responsibilities at the department, college and university level. The Dean is responsible for assuring the effectiveness of the educational processes in the College, whereas the Departments' Chairpersons, are in charge of the programmes management. The Department Chairperson oversees assigned responsibilities, supported by a comprehensive structure of Departmental committees. The Department has nine permanent committees, which include the Academic Committee, Department Accreditation Committee, (DAC), Department Activities, Seminar, & Website Committee, Laboratory and Safety Committee, Library, Textbooks, & Software Committee, Postgraduate Committee, Promotion & Conference/Seminar Attendance Committee, Research & Equipment Committee and the Timetable Committee. From provided documents and interview session, the Panel found strong evidence that all the committees have clear mandates related to the management of the programme and prepare proposals in their respective areas for the Chairperson. The Panel also confirmed that the decision-making process follows the hierarchy from the Department Council to the College Council and University Council, with the relevant Council having ultimate responsibility for decision-making. The Panel appreciates that a well-managed structure is in place for the management of the BS-CENG programme, with well-defined responsibilities and reporting lines.
- 2.4 The Department of Civil Engineering has a total of (24) full time academic staff comprising: (6) full Professors, (2) Associate Professors, (13) Assistant Professors, (1) Senior Lecturer, (1) Lecturer and (1) Research and Teaching Assistant. In addition, there are two part-time instructors who contribute to teaching in the department. From provided CVs and site visit interviews, the Panel notes with appreciation that the academic staff are appropriately qualified and have an appropriate range of specializations to teach the courses in the BS-CENG Programme. The SER reports the Student-to-Staff Ratio (SSR) variously as 41:1 and 50:1. During interviews, the Panel was informed that the current SSR is 50:1, which is higher than the 35:1 standard set by UoB. The Panel also learned about the challenges faced by the Department in the increased number of students admitted to the Department in recent years (see section 2.2). In its interviews with senior management, it was indicated that five Research and

Teaching Assistants are currently on scholarship completing their higher degrees in Civil Engineering, and will contribute to alleviating the problem of shortage in staff employment faced by the Department. Whilst the Panel acknowledges the difficulties that the Department is facing, the Panel is of the view that the Department should urgently investigate available options for overcoming these challenges in the short and medium run. During interviews with faculty members, the Panel learned that the high teaching staff workload due to the high SSR does not allow any time for activities other than direct teaching. There is no staff time for research, continuing professional development, or community engagement. The SER notes similar concerns regarding the impact of high teaching loads on faculty's research and professional development. The Department's Improvement Plan also includes an improvement goal regarding the 'Reduction of the intakes to the Civil Engineering Programme'. The Panel concurs and recommends that the College should take urgent action to reduce the Student-to-Staff Ratio to an appropriate level, in alignment with institutional and international standards.

- 2.5 The University of Bahrain has a well-established, systemic approach for recruitment, selection, appointment and retention of staff. Policies and guidelines are in place and the recruitment process is detailed in the SER showing the steps undertaken both by the Department and the College for recruiting new staff members. During interviews, the Panel learned that vacancies are advertised on the university website after which received CVs are studied by the Department Recruitment Committee for a thorough scrutiny and ranking of candidates. The Committee's recommendations for appointment are then discussed in the Department and College Council Meetings, with final approval of selected candidates being made in the University Council. This was confirmed by the Panel from the study of provided evidence. The Panel appreciates that recruitment procedures are implemented in a transparent manner in alignment with institutional policies and procedures. According to the SER, there are no formal approaches with regards to the retention of academic staff. During the interviews, the Panel was informed that retention is encouraged through incentives and participation in international conferences. Moreover, the Panel learned that induction of new staff is performed informally at a programme level. The Panel recommends that the College should develop formal mechanisms for the induction of newly-appointed academic staff as well as for the retention of high performing faculty members.
- 2.6 There are comprehensive 'Academic Promotion Regulations' with a set of criteria including research, community service, in addition to the teaching and learning activities. However, faculty members interviewed by the Panel indicated that the processing of promotion applications was very lengthy and slow. Some staff also indicated that they are unable to fulfil the current promotion criteria due to increased teaching load which slows the promotion process on the average. In its interviews with

senior management, the Panel was informed that the University is working towards streamlining the promotion process. The Panel notes, from provided data, that only one faculty member has been promoted in the CENG Department over the past five academic years. The Panel recommends that the College should review the promotion procedures to significantly shorten the time required to process promotion applications. With regards to staff appraisals, the Panel notes that the process currently involves student evaluation *via* student surveys at the end of each semester. During interviews, the Panel was informed that a comprehensive evaluation of academic staff performance is only conducted at the time of promotion, and contract renewal for non-Bahraini staff members. The Panel confirmed that there is no provision for annual staff appraisals that are linked to staff professional development. The Panel recommends that the College should develop and implement an annual comprehensive appraisal system for all academic staff that identifies and supports areas for professional development.

- 2.7 The College of Engineering utilizes the institutional Management Information System (MIS) to guide informed decision-making in the management of its academic programmes. The SER provides details of the system's major sub-components including: Online Registration, Timetable Preparation, Academic Advising, E-learning, Human Resources, Training and Quality Assurance. During the site visit, the Panel confirmed the MIS is efficiently maintained by the University Information Technology (IT) Center to ensure availability of the system's components to all stakeholders. In its interviews with academic and administrative staff, the Panel learned that the CENG Department makes use of the MIS to provide up-to-date information about the students and faculty members of the programme. For example, the Department has access to a wide range of data such as student records, advising records, faculty records, examination marks, tracking ordered laboratory equipment, and quality assurance reports. Students interviewed by the Panel confirmed that the system allows them to download the necessary forms required for online registration and other aspects related to the management of their learning. The Panel notes that access to the MIS is subject to password compliance, whereby staff and students have restricted access to the system *via* a secured login protocol. During interviews, the Panel was provided with several examples of the use of reports generated by the MIS for decision-making in the Department. The Panel appreciates that an effective Management Information System is utilised by the Civil Engineering Department to support the programme functions and decision-making processes.
- 2.8 Appropriate policies and procedures are in place to ensure the security of learners' records, and the accuracy of results. At University level, it is the responsibility of the Deanship of Admission and Registration to secure and safeguard all student related records, in both electronic and hardcopy. At college level, academic departments are responsible for keeping records of all examinations, project reports, student grades,

attendance as well as related policies and procedures. During interviews, the Panel learned that academic staff are responsible for the retention of marked assessments and for submission of students' grades to the Department Chairperson. The Department Chairperson is responsible for confirming grades and submitting these to the Dean of College, for confirmation and submission to the Deanship of Admission and Registration. The SER describes the procedures in place to ensure the security of learner records. During the site visit interviews and the campus tour, the Panel confirmed that copies of all critical records are maintained at different levels by the Deanship of Admission and Registration and in the Department of Civil Engineering. The Panel notes that a robust system is in place for the backup and disaster recovery of student records, with clearly prescribed periods for retention and back-ups. In addition, an electronic backup is executed every semester by the IT Center. From its interviews with the IT Centre staff, the Panel is satisfied that the security of records is ensured through clearly defined mechanisms for authorization, storage of data, privacy of information, and the use of appropriate security tools. The Panel appreciates that a robust system, including effective policies and procedures, is consistently implemented, to ensure security of learner records and accuracy of results.

- 2.9 The College of Engineering is currently located in the UoB Isa Town Campus. During the site visit, the Panel toured the departmental and college facilities including the teaching classrooms, specialised laboratories, computer laboratories, library, staff offices, the food court, and venues for extra-curricular and sporting activities. The Panel observed that the classrooms are all equipped with computers and smart boards for use by instructors, with internet connectivity provided in every office and laboratory in all the college buildings. The Department of Civil Engineering has seven specialised laboratories; these are the Soil Mechanics Laboratory, Surveying Laboratory, Structures Laboratory, Concrete Laboratory, Hydraulics Laboratory, Environmental Science Laboratory, Asphalt and Highway Engineering Laboratory, as well as a shared access to an Engineering Workshop. The departmental laboratory infrastructure is further supported by (13) College Computer laboratories equipped with a total of (290) computers and one multimedia projector in each laboratory. Blended learning is facilitated by the extensive multimedia facilities and installed Ethernet, Fibre Optic and Wi-Fi networks. The Panel notes that in general, classrooms and laboratories are just adequate in specification for the programme needs, but inadequate for the current numbers of Civil Engineering students, often requiring repeat teaching to sections of students. The Panel also notes that some of the equipment in the laboratories are outdated, and at least one major item of structural testing equipment is obsolete and no longer functional. The Panel recommends that the College should upgrade the laboratory resources, including replacement of non-functional and outdated equipment.

- 2.10 In addition to the Central University of Bahrain Library located in the Sakhir Campus, the Isa Town Campus has a library devoted to the College of Engineering faculty and students. The visit to the library confirmed that an appropriate range of textbooks, journals and e-resources are available for the Civil Engineering department and are to an international standard. The number of printed books related to the Civil Engineering programme is about (1,142) in English. In addition, students have access to the digital Library portal and to extensive inter library services that provide books and journal papers not available locally. Students interviewed by the Panel expressed their satisfaction with the library services such as the online system, the study rooms, and the common study area. The Panel appreciates that the library is fit for purpose with a range of resources and services that meet the needs of the staff and students of the BS-CENG programme. Overall, the Panel acknowledges that the College of Engineering buildings provide an appropriate learning environment. However, the Panel notes from site visit interviews and tours, that there is a need to expand current venues, particularly classrooms. During interview with senior management, the Panel was informed that the University is planning to construct (13) buildings for the College of Engineering in the UoB Sakhir Campus, and that all departments will move to their new premises once the new buildings are appropriately equipped. Students interviewed by the Panel indicated that they would benefit from moving to the new campus as this would offer more modern facilities and laboratories. The Panel encourages the College to work on the move to the new campus to enable the Civil Engineering students to benefit from full, easy access to all the University facilities.
- 2.11 A tracking system is in place to determine the usage of laboratories, classrooms, and library resources. A laboratory engagement timetable and an 'enrolment list' is provided by the registration office for each semester, to enable the department to manage the utilization of laboratories and classrooms for the BS-CENG programme. During interviews with administrative and academic staff, the Panel learned that the laboratory technicians keep a daily schedule of their laboratory usage, as they are normally used for laboratory sessions of most of the courses. With regards to the library e-learning and e-resources, the Panel was informed that the library and e-learning center are mainly responsible for tracking the usage of these resources and tracking reports are provided for the Department upon request. Samples of e-learning tracking reports were provided to the Panel. During the site visit tours, the Panel noted the timetabling and attendance sheet system displayed in the Department's teaching facilities. In addition, Computing Usage Timetable were displayed in all college computer laboratories. During interviews, the Panel heard several examples of how tracking records are utilised for the evaluation of the usage of the Department's resources; for example, determining the need for opening new sections or purchasing new laboratory equipment. The Panel acknowledges that an adequate tracking system is utilised for the evaluation of the usage of the Department's resources.

- 2.12 The University of Bahrain provides student support activities at many levels; these include, laboratory support, library support, e-resources, guidance and counselling, as well as health care. A description of the extensive array of student support activities available to the programme's students is reported in detail in the SER. During the site visit, the Panel confirmed that at least one technician is assigned to each laboratory in the Department, and the Panel noted the conscientious commitment of these staff to support the Civil Engineering students. In addition, the computer laboratories have (7) dedicated technicians to support students with the use of the software and e-resources. The Zain e-Learning Centre also provides a range of services and courses to support students in use of learning technologies. The Library provides a range of services and support for students, both generic and through subject librarians. Support for students includes: Library induction; information literacy training; and workspaces in the Library, including some for students with special needs. General guidance and support come within the responsibility of the Deanship of Student Affairs, with support organised in service areas: Student Activities; Student Services and Developments; Students Advice and Guidance; and Training and Development. The Panel acknowledges the impressive range of workshops organized for students on a wide range of topics including: leadership development, computer literacy, scientific report writing, life skills and psychological skills development. The Panel also notes that the Career Counselling Office provides a range of support services for students: student career guidance; professional liaison; supporting students' practical skills; and marketing students to the jobs market, including job-shadowing and professional workshops. The University Health Clinic provides comprehensive on-campus healthcare to students. The appropriateness of available support, as documented in the SER, was confirmed by the Panel in interviews with administrative staff. Students interviewed by the Panel also expressed their satisfaction with the range of support services available to them and indicated that with the planned move to the new campus, they will benefit more from full, easy access to all the University's facilities. The Panel appreciates that an extensive range of support services is provided to the programme's students to enhance their learning experience.
- 2.13 At the beginning of each academic year the Deanship of Students Affairs and the Deanship of Admissions and Registration organize an induction day for all newly admitted students at UoB. During this induction, students are informed about the academic facilities and services at the University, as well as the academic rules and regulations. In addition, an overview of the different educational and social activities is also provided to students, along with orientation programme publications. During interviews, the Panel was informed that different student bodies also participate in the induction of new and transferred students to familiarize them with the activities of students' clubs and societies. In addition to the general university orientation, the College of Engineering organizes an induction day during which students meet with the academic and administrative staff members of the Department. During its

interviews with staff members, the Panel learned that college induction includes an overview of the college and departments by the Dean and Chairperson, the introduction of academic programme plans by academic advisors, as well as touring of college facilities. The Panel appreciates that a comprehensive induction programme is provided for newly admitted students at university, college and department levels. However, the Panel notes, from provided evidence, the low number of students who attended the induction day in the academic year 2013-2014, constituting only (49%) of total students admitted to the College of Engineering. During interviews, the Panel learned that currently the induction programme is not compulsory and that the College is working towards addressing this issue. The Panel notes that the Department has identified, in its programme improvement plan, an improvement goal to 'improve the student induction' with clear action steps including that: (1) the induction programme should be made compulsory to all students (2) the induction programme should be held more than once at the beginning of the semester to accommodate all the new students. The Panel concurs and recommends that the College should enhance students' attendance during orientation and implement appropriate provisions for those students who cannot attend the induction day.

- 2.14 An institutional Academic Advising Framework that details the responsibilities of academic advisors and the processes for tracking the students' academic progress is in place. In line with this framework, students are required to meet their advisors at the beginning of each semester to guide them in selecting courses that ensure the successful and timely completion of their studies. The Panel notes the elaborate scheme that has been put in action to allow effective implementation of the advising system; this includes the Academic Advising website, Advising Tool, as well as the appointment of a Chief Departmental Advisor who provides guidance to other faculty advisors. During interviews with academic advisors, the Panel was informed that tracking the students' progress is a collaborative effort between the Department and the Deanship of Admission and Registration. The Academic Warning & Academic Dismissal roles are clear and widely published in the University's website. The online Academic Advising System includes an electronic tracking system which enables advisors to record the advice information for each student. With regards to at-risk students, the Panel acknowledges that there are appropriate policies and procedures to identify students at risk of academic failure and enable timely interventions. A new feature has recently been introduced in the advising system to block at-risk students (with GPA of less than 2.0 out of 4.0) from registration unless they meet their academic advisors. During interviews, the Panel learned that a range of academic and social support is provided to students under probation, in collaboration with the Deanship of Student Affairs' Counseling and Guidance Unit. The Panel noted from its interviews with students that the peer-mentoring scheme and related programmes - such as Life Learning, Steps to Success, Generation Teaching - provide students with opportunities to improve their academic performance. The Department obtains student/students'

feedback on the advising system every semester *via* the Senior Exit Survey. Results of the 2014-2015 indicate that students are not very satisfied with the advising system, as evidenced from the result that only (43%) of students believe they 'received excellent advising within my academic programme'. The SER attributes these results to the fact that in recent years there was an abrupt increase in the number of students admitted to the BS-CENG programme, hence increasing the number of advisees assigned to each advisor. Students interviewed by the Panel indicated that their experience of advising was variable, depending on the approach of the individual adviser. It is evident to the Panel that the admission of large number of students in Civil Engineering Department is impacting on the quality of the advising. The Panel recommends that the College should implement appropriate mechanisms to ensure the effective implementation of academic advising for all students.

- 2.15 The SER details the extensive range of informal activities provided for students to expand their knowledge and experience outside the classrooms and laboratories.; these include student societies and clubs, cultural and social activities, as well as sporting events. In addition, students are encouraged to attend workshops and conferences conducted locally and internationally. This was confirmed during interviews with faculty members, as well as administrative staff from the Deanship of Student Affairs. Students interviewed by the Panel were very positive about these wider opportunities, and indicated that they appreciate arrangements made by the College for them to participate in competitions and obtain professional certificates. The site visit revealed to the Panel that the general environment in the College and Department is conducive to informal learning. The Panel appreciates that the wider learning environment, including the comprehensive range of activities and resources, enable the programme's students to effectively engage in informal learning experiences.
- 2.16 In coming to its *conclusion* regarding the Efficiency of the Programme, the Panel notes, *with appreciation*, the following:
- Clear admissions policies for the BS-CENG programme are widely communicated, and their implementation is periodically reviewed.
 - A well-managed structure is in place for the management of the BS-CENG programme, with well-defined responsibilities and reporting lines.
 - The academic staff are qualified and have an appropriate range of specializations to teach the courses in the BS-CENG programme.
 - A well-established staff selection and recruitment system is implemented in a transparent manner in alignment with institutional policies and procedures.
 - An effective Management Information System is utilised by the Department to support the programme functions and decision-making processes.

- A robust system, including effective policies and procedures, is consistently implemented, to ensure security of learner records and accuracy of results.
- The library is fit for purpose with a range of resources and services that meet the needs of the staff and students of the BS-CENG programme.
- An extensive range of support services is provided to the programme's students to enhance their learning experience.
- A comprehensive induction programme is provided for newly admitted students at university, college and department levels.
- The wider learning environment, including the comprehensive range of activities and resources, enable the programme's students to effectively engage in informal learning experiences.

2.17 In terms of improvement, the Panel **recommends** that the College should:

- lead rapid action to manage the number and profile of students admitted to the BS-CENG programme, to match staff capacity, and to ensure that the students admitted have the relevant pre-requisite knowledge
- take urgent action to reduce the Student to Staff Ratio to an appropriate level, in alignment with institutional and international standards
- develop formal mechanisms for the induction of newly-appointed academic staff, as well as for the retention of high performing faculty members
- review the promotion procedures to significantly shorten the time required to process promotion applications
- develop and implement an annual comprehensive appraisal system for all academic staff that identifies and supports areas for professional development
- upgrade the Civil Engineering laboratories resources, including replacement of non-functional and outdated equipment
- enhance students' attendance during orientation and implement appropriate provisions for those students who cannot attend the induction day
- apply appropriate mechanisms to ensure the effective implementation of academic advising for all students.

2.18 **Judgement**

On balance, the Panel concludes that the programme **satisfies** the Indicator on **Efficiency of the Programme**.

3. Indicator 3: Academic Standards of the Graduates

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

- 3.1 The programme has developed (13) clearly stated programme learning outcomes that incorporate the expected graduate attributes, in alignment with the programme's educational objectives. These attributes are set out in the SER and include, in addition to the ABET outcomes ('a' to 'k'), two additional outcomes that are specific for the Civil Engineering discipline. It is expected that the achievement of the graduate attributes will lead to achievements of the educational objectives developed by the Programme. From the review of site evidence and course files, the Panel notes that the achievement of learning outcomes by students is ensured through the use of valid and reliable assessment. These include direct assessment methods using performance indicators which include a definition of acceptable performance levels used to identify the achievement of the programme outcomes. In addition, indirect assessments are used through the mapping of surveys and evaluation results directly to the PEOs or indirectly through the PILOs. The Panel finds the development of these outcomes and their proper assessment to be one of the programme's strengths. The Panel appreciates that graduate attributes are clearly stated in terms of aims and achieved learning outcomes for the programme and are ensured through the use of assessment which is valid and reliable in terms of the learning outcomes.
- 3.2 The University has recently put into place a clear Benchmarking Policy to ensure that the University's performance is comparable to national and international standards and to promote improvement in its performance. The Panel finds this policy to be overall appropriate clearly stating the policy purpose, scope, procedures statements and support procedures, as well as management and implementation responsibilities. In line with this policy, the Quality Assurance & Accreditation Centre of the University is responsible for leading all aspects of benchmarking. During interviews with the faculty members, the Panel was informed that the Department of Civil Engineering has embarked on external benchmarking exercises to achieve ABET accreditation in 2008 and 2014. The programme's contents in terms of curriculum, course syllabi, faculty and learning outcomes were benchmarked with the requirements of the Civil Engineering Profession (ASCE) and the ABET Criteria. At the departmental level, the Department Council through the Department Accreditation Committee (DAC) managed the benchmarking process, which has resulted in improvements to the programme, for example by adding new courses and required pre-requisite courses. The Panel appreciates that formal processes are in place to enable the CENG department to evaluate the BS-CENG programme against professional bodies to further enhance its academic standards. However, the Panel is of the view that the Department should expand its benchmarking activities to include best practice in

teaching and learning methods to improve the students' learning experience and standard of graduates. The Panel recommends that the College should extend systematic benchmarking beyond ABET, expand to outcomes to include the benchmarking of the BS-CENG programme against similar programmes in reputable regional and international institutions.

- 3.3 In addition to the institutional 'Regulations of Study and Examination at University of Bahrain' developed in 2013, the University has recently issued a number of policies including the 'Moderation of Examinations and Assessment' policy, the 'QAAC Assessment Strategy', 'Anti-plagiarism Policy' and the 'Programme Quality Assurance and Enhancement Policy'. Collectively, these policies guide the assessment strategy within the CENG Department, with regards to the evaluation of the students' achievement of learning outcomes, internal and external moderation of assessments, students' appeals, and plagiarism. These documents also include clauses for the periodic reviews of the assessment policies and procedures. During interviews, the Panel noted that faculty members and students are well aware of these assessment policies and procedures. The Panel also learned that the implementation of assessment policies is monitored by the departmental 'Examination Moderation Committee' and 'Grade Distribution Committee' – under the supervision of the Department Chairperson - to ensure that these policies are followed and their assessments meet the required standards. In addition, a departmental 'Quality Assurance Committee' conducts regular reviews of the course files, to ensure that faculty members are adhering to the assessment guidelines, and use the findings for improvement purposes. This was confirmed by the Panel from the review of course files during the site visit. The Panel appreciates that assessment policies and procedures are consistently implemented in the BS-CENG programme, and their implementation is regularly monitored to inform improvements in the achievement of programme outcomes.
- 3.4 There are appropriate mechanisms in place to ensure the alignment of course assessments with its learning outcomes. The Moderation of Examinations and Assessment Policy requires that assessments are appropriate for the type and level of learning outcomes and reflect the academic standards achieved by students. This alignment is ensured through the use of the 'Course Assessment Matrix' which maps the CILOs to the particular assessment used. These CILOs are, in turn, mapped to Programme Outcomes. In its interviews with faculty members, the Panel was informed that every semester, the course coordinator/instructor makes sure that the learning outcomes for the course (CILOs) are measured through the different components of assessments, such as tests, assignments or examinations. The Panel also learned that the Department Accreditation Committee (DAC) ensures that the assessment is properly aligned with the outcome through course portfolio reviews at the end of each semester. During the site visit, the Panel reviewed the Excel

spreadsheets showing the alignment used to measure achievement of both the course outcomes and the programme outcomes, and confirmed that the assessments are aligned with outcomes. The Panel appreciates that appropriate mechanisms are consistently implemented to ensure the alignment of course assessments with the learning outcomes to assure the academic standards of the graduates.

- 3.5 An institutional internal moderation system for setting assessment instruments and grading students' achievement is in place and is detailed in the 'Regulations of Study and Examinations at the University of Bahrain' and the 'Assessment and Moderation Policy'. These policies stipulate that pre and post moderation of assessments is conducted to ensure that the assessment design is aligned with article (56) of the 'Regulations of Study and Examinations at the University of Bahrain'. During interviews, faculty members clarified that there are several courses with multi sections, and accordingly, the course coordinators oversee the setting of the examination papers, in coordination with other faculty members teaching the course. In single-section courses, however, the course instructor is responsible for preparing the examination paper, and may consult with other faculty members specialised in the same field, as indicated in article (6) of the Assessment and Moderation Policy'. At the departmental level, an Examination Committee is established to conduct post-assessment moderation of completed students' work to verify the consistent implementation of examination criteria and fair award of students' grades. The Department Chair approves the grades before recording them into the system. Moreover, the Quality Assurance Office at the college and UoB perform periodic audits of course portfolios including samples of examinations and assessment papers, and audit results are included in the QAAC comprehensive report. From the review of course files and interviews, the Panel confirmed the implementation of internal moderation of major summative assessments in the BS-CENG courses. The Panel appreciates that rigorous internal moderation processes - for both the setting of assessment instruments and grading students' achievements - are implemented in the CENG Department. However, the Panel notes that formative assessment tools, such as quizzes and presentation assignments, are not subject to a formal internal moderation. The Panel recommends that the College should develop and implement an equally effective system for the internal moderation of formative assessment tools, as well as for single section courses.
- 3.6 The Assessment and Moderation Policy outlines the mechanisms adopted by UoB for the external moderation of students' assessments. These include the participation of external examiners in the assessment of undergraduate capstone courses, and the involvement of professional bodies in the review of assessed students' work during accreditation visits. During interviews with faculty members, the Panel confirmed that only the Senior Project includes participation of an external examiner. Other courses in the curriculum are considered to be subjected to external examiners' moderation by

the ABET Evaluator during the accreditation visits that the Department goes through. The Panel notes that article (9) of the 'Assessment and Moderation Policy' states that programmes that have not been accredited over the past three years are required to involve external examiners to externally moderate students' assessments, in line with the 'Assessment and Moderation Policy'. This was confirmed during interviews with senior management. The Panel acknowledges the external scrutiny of the examinations carried out by the ABET evaluator during the accreditation visits; however, the Panel is of the view that this does not constitute a formal dedicated external moderation system of assessments. The Panel recommends that the College should expand the current external moderation mechanisms to include effective moderation of all courses, so as to ensure that students' assessments are appropriate and comparable to those in reputable programmes regionally and internationally.

- 3.7 The appropriateness of the level of students' achievements to the level and type of programme is ensured through the implementation of the 'University-wide Outcome-based Assessment Process' and related policies. The Panel explored this issue during interviews with faculty members who indicated that at the end of each semester, a 'Course Assessment Matrix' is employed in all courses to map the students' grades in different course assessment components with the CILOs. A benchmark of (70%) of students achieving above (70%) is an indication of the students successfully achieving the CILOs. During the site visit, course files of all BS-CENG programme courses were made available to the Panel; for each assessed students' work (assignments, laboratory reports, tests, final...), three samples of students' work were shown (high, medium and low achievement). The Panel noted that, overall, the assessments are fair and in line with international practice, and the quality of students' work is appropriate for the level of the programme. In its interviews with senior management, the Panel learned that the course files, including samples of assessed students work, have been examined by the ABET evaluator during the accreditation visit and were found to be at an appropriate level. Moreover, external stakeholders interviewed by the Panel expressed their view that the level of achievement of students is comparable to programmes regionally and internationally. The Panel appreciates that students' level of achievement, as expressed in samples of students' work, is appropriate to the level and type of similar programmes in reputable regional and international institutions.
- 3.8 The CENG Department implements appropriate mechanisms to ensure that the level of achievement of graduates meets the BS-CENG programme aims and learning outcomes. Direct methods of assessment using performance indicators and rubrics are used to assess learning outcomes in civil engineering courses - including the graduation project - that cover the curriculum. As indicated earlier, a 'Course Assessment Matrix' is employed to determine the successful attainment of the CILOs, and an 'Articulation Matrix' is then used to ensure that students achieve the PEOs and PILOs *via* the CILOs. Moreover, surveys done on graduating students, alumni and

employers are analyzed to assess their views, on the level of achievement of graduates. The extensive data provided in SER, with regards to the PILOs assessment results clearly indicate the achievement of programme outcomes. This assessment information has been included in the evidence submitted to receive ABET accreditation in 2014. The Panel is of the view that, in employing reliable and valid assessment methods for the assessment of programme's achievement of Programme Outcomes (PILO), the Programme has shown that the level of achievement of graduates meets programme aims and intended learning outcomes. The Panel's view is supported by graduates and employers who indicated, during interviews, that they are very satisfied with the knowledge, skills and attitudes of the graduates. The Panel appreciates that the level of graduates' achievement is ensured through rigorous mechanisms and is consistent with similar programmes, in reputable regional and international institutions.

- 3.9 Statistics provided in the SER indicate that less than (40%) will graduate in the normal period of (4) academic years, with the majority of students requiring 4.5 to 5 years to graduate over the past three academic years. The SER also indicates that the students' dropout ranged from (4.19%) to (9.80%) during the same years. The Panel finds these rates to be reasonable given the high number of students admitted to the programme. However, the Department did not provide clear information and analysis in the SER or the additional evidence provided during the site visit, to enable the Panel to properly conclude on the ratio of admitted students to successful graduates, including rates of progression, retention, year-on-year progression, and first destinations of graduates. Faculty members interviewed by the Panel indicated that the College does not have its own student database as all data is centralized at the UoB Deanship of Admission and Registration. The Panel is of the view that cohort information is important and must be readily available for the College for planning purposes. The Panel recommends that the College, in collaboration with the Deanship of Admission and Registration, should conduct a systematic cohort analysis to inform decision-making.
- 3.10 Students are required to take two compulsory Industrial Training courses (CENG 299 and CENG 399) for a period of two months, after completing (45) and (85) credits, respectively. Guidelines for the management and evaluation of these courses are in place and are detailed in the Industrial Training Manual, including the training objectives, procedures for enrolling in the training programme, as well as criteria for exemption from training for those who have work experience. The implementation of these guidelines was confirmed during site visit interviews during which the Panel learned that the Practical Training Office at the College of Engineering is responsible for the allocation of students to various training placements. The Training Programme is administered and coordinated by a Training Committee. Supervisors are assigned to supervise students and at the end of training, students are required to write a report

and make a presentation assessed by the trainer and the supervisor. The Panel was provided with adequate samples of Student Assessment Forms, Industrial Supervisor Assessment Forms and Students' Presentations. Interviews with students, trainers and staff revealed that these training courses are highly valued as they constitute an essential mechanism for the development of the students' professional skills required by industry. The Panel appreciates that a well-managed work-based learning programme is in place, and contributes to improved graduate attributes.

- 3.11 The curriculum includes a Senior Project Course (CENG 490) in the final year of studies aimed at developing the student's ability to apply theoretical knowledge and practical skills in solving engineering problems within a professional, team-oriented environment. The CENG Department has produced a document entitled 'Senior Project Guide' detailing the policies and procedures for the supervision of the Senior Project. The Guide includes the course objectives and learning outcomes, guidelines on how to select a topic, student's responsibility and guidelines for preparing the project report and presentation. In its interviews with faculty members, the Panel learned that the departmental Senior Project Committee is responsible for approving the students' proposals and monitoring the progress in the projects' implementation. During interviews, senior students and recent alumni expressed their satisfaction with the arrangements for the management of their senior projects, as well as the support they receive from their supervisors. During the site visit, the Panel reviewed samples of senior projects and found them to be of good quality, with appropriate use of plagiarism detection software. The Panel notes that evaluation forms are utilised for the assessment of senior projects using appropriate assessment rubrics. The Panel also notes the involvement of external examiners from industry in the evaluation of these projects. Faculty members interviewed by the Panel considered the Senior Project to be a vital element in helping the students achieve the programme's learning outcomes. Moreover, employers indicated to the Panel that they value the Senior Project highly, as it equips the students with essential transferable and engineering skills that prepare them for real life civil engineering practice. The Panel appreciates that effective mechanisms are consistently implemented for the supervision and evaluation of the senior project, consonant with its vital role in the curriculum. However, interviews with academic staff revealed that the University does not consider supervision of students in Senior Projects as a teaching load for faculty, raising concerns from the Panel that faculty will tend to avoid teaching the course, and project supervisors may give insufficient time in supervising the students.
- 3.12 The Department has a Programme Industrial Advisory Committee (PIAC) composed of (10) senior managers who are employers of graduates and alumni from Government and Private sectors, faculty members as well as students' representatives. The QAC Director Quality Manual states the Terms of Reference of the PIAC, including the committee's role, selection of members, committee's size, and frequency of meetings.

From the interviews with PIAC members and the review of PIAC meeting minutes, the Panel notes that the Committee meets at least once a year to discuss many issues related to the Programme, including among other things curriculum, programme aims and objectives, training, employment as well as support needed for the Department's activities. The Panel confirmed, in its interviews with senior management, that the recommendations from the PIAC are forwarded to the relevant departmental committees for discussion and consequently to the Department council for approval. The SER included examples of the involvement of PIAC members in the recent changes made in the curriculum, PILOs, as well as the department vision and mission statements. The Panel notes that the PIAC turnout to the 'External Stakeholders' session is a reflection of the value perceived to be within the BS-CENG programme, particularly the prospects of industrial collaborations that would benefit both stakeholders. The Panel appreciates that an active advisory board is in place and plays a significant role in providing constructive feedback and support for the BS-CENG programme improvement.

- 3.13 The Department carries out surveys periodically to assess the views of employers and alumni on the achievement of the Programme Educational Objectives by programme graduates. The results of recent employer and alumni surveys conducted in the second semester of 2013-2014 academic year are given in the SER. It is evident from these results that employers are quite satisfied with the quality of the graduates, as the scores for the three PEOs were (4.5) for PEO1, (4.25) for PEO2 and (3.75) for PEO3, all exceeding the success criteria of (3.5) out of (5.0). The results of the Alumni Survey indicate higher satisfaction with the graduate profile (4.82) for PEO1, (4.68) for PEO2 and (4.41) for PEO3. Moreover, interviews with graduates and students revealed their full satisfaction and pride with their experience in the CENG Department and the University of Bahrain. In addition, PIAC members interviewed by the Panel expressed a high level of satisfaction with the standards of the graduate profile. The Panel appreciates that there is strong evidence of graduate and employer satisfaction with the standards of graduate profile.
- 3.14 In coming to its conclusion regarding the Academic Standards of the Graduates, the Panel notes, *with appreciation*, the following:
- Graduate attributes are clearly stated in terms of aims and achieved learning outcomes for the programme and are ensured through the use of valid and reliable assessment methods.
 - Formal processes are in place to enable the evaluation of the BS-CENG programme against professional bodies to further enhance its academic standards.
 - Assessment policies and procedures are consistently implemented in the BS-CENG programme, and their implementation is regularly monitored to inform improvements in the achievement of programme outcomes.

- Appropriate mechanisms are consistently implemented to ensure the alignment of course assessments with the learning outcomes to assure the academic standards of the graduates.
- Rigorous internal moderation processes – for both the setting of assessment instruments and grading students’ achievements - are implemented in the BS-CENG programme.
- The level of students’ achievement as expressed in samples of students’ work is appropriate to the level and type of the programme in Bahrain, regionally and internationally.
- The level of graduates’ achievement is ensured through rigorous mechanisms and is consistent with similar programmes, in reputable regional and international institutions.
- A well-managed work-based learning programme is in place and contributes to improved graduate attributes.
- Effective mechanisms are consistently implemented for the supervision and evaluation of the senior project, consonant with its vital role in the curriculum.
- An active advisory board is in place and plays a significant role in providing constructive feedback and support for the programme improvement.
- There is strong evidence of graduate and employer satisfaction with the standards of graduate profile.

3.15 In terms of improvement, the Panel **recommends** that the College should:

- extend systematic benchmarking beyond ABET, to include the benchmarking of the programme against similar programmes in reputable regional and international institutions
- develop and implement effective mechanisms for the internal moderation of formative assessment tools as well as single-section courses
- expand the current external moderation mechanisms to include effective moderation of all courses, so as to ensure that students’ assessments are comparable to those in reputable programmes regionally and internationally
- conduct a systematic cohort analysis to inform decision-making.

3.16 **Judgement**

On balance, the Panel concludes that the programme **satisfies** the Indicator on **Academic Standards of the Graduates**.

4. Indicator 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.

- 4.1 Institutional policies, procedures and regulations are published on the university website and made known to the different constituencies. The Panel notes that policies, procedures and regulations are appropriate in scope for the institution, college and programme. During interviews, the Panel learned that the implementation and continuous revision of these policies is mainly the responsibility of the Quality Assurance and Accreditation Centre (QAAC). Implementation is managed through clear identification of responsibilities, with key roles at relevant levels: University - Director of QAAC; College -Dean and Director of College QA Office; Department - Chairperson and faculty teaching specific courses. The Panel appreciates that a comprehensive and well-documented set of institutional policies, procedures and regulations are in place and are applied effectively and consistently in the BS-CENG programme and across the College. The Panel acknowledges the College's efforts in communicating the institution's policies and academic regulations to staff and students during induction programmes and in departmental council meetings. However, the Panel notes that some faculty members interviewed by the Panel were not aware of the recently developed policies. The Panel recommends that the College should enhance the mechanisms for communicating new institutional policies to respective stakeholders to ensure the effective application of these policies.
- 4.2 As indicated earlier (see section 2.3), the hierarchy of management at the University, College and Department levels is appropriate and adequate to ensure effective management of the programme. Academic responsibilities are clearly defined at appropriate levels: University, College, Department, Programme and individual courses. The Dean of the College of Engineering and the Department Chairperson have key leadership roles. In addition, faculty members are actively involved in decision-making through a comprehensive structure of departmental committees that consider every academic and administrative matter, including curriculum, examinations, recruitment and promotion. The Department has primary responsibility for academic standards, with the Department Council approving all routine academic decisions. Decisions involving radical change or affecting other departments or programmes are referred to College and / or University Council(s). During interviews, the Panel heard several examples confirming that a hierarchy of experienced leadership exists at different levels and that each level is aware of its responsibilities and accountabilities. The Panel appreciates that the B.Sc. in Civil Engineering programme is managed in a way that demonstrates effective and responsible leadership.

- 4.3 There is a clear Quality Assurance management system at all levels within the institution. At university level, this includes the role of the Adviser to the President on Academic Quality, and the Academic Accreditation Committee which schedules routine quality audits. At college level, key parts of the system are: the role of the Dean, the College Quality Assurance Office, and the College Accreditation Committee, while at the programme level, the Department Accreditation Committee (DAC) is mainly responsible for implementation of the quality system. The Panel notes that at the department / programme level, there is a very strong focus on assessment of PEOs, PILOs, and CILOs, informed by an appropriate range of inputs including students' grades and stakeholders' views. During interviews, the Panel confirmed that the existing QA structure effectively communicates the information and monitors the implementation of the quality assurance measures set by the University. The QA system is supported by an Assessment Management Information System (AIMS) which houses all the evaluation data and reports of all academic programmes. In addition, a comprehensive Quality Assurance Committee (QAC) manual describes in detail the quality policy, the structure of the committee as well as including all quality forms that are needed for QA, such as meeting agenda forms, different survey forms, course syllabus forms, etc. The QA management system is monitored by systematic reporting upwards through committees, including the Department Accreditation Committee, Department Council, and College Accreditation Committee. The Panel acknowledges that the organization of the QAC and DAC in the College of Engineering involves members with different qualifications that ensure appropriate implementation and monitoring of QA policies. The internal audit function is also a component of the quality assurance management system and it plays an important role in quality assurance monitoring. In its interviews with senior management, the Panel heard about plans to audit the College of Engineering in the future. The Panel appreciates that a comprehensive quality assurance management system is in place and is consistently implemented and monitored.
- 4.4 According to the SER, several workshops and meetings have been conducted to discuss quality assurance issues, so that all academics have sufficient understanding of their role in ensuring the quality of provision within the department. A list of these workshops as well as evidence of material presented were made available for the Panel. During interviews, faculty members clarified to the Panel their roles in quality assurance including the maintenance of academic standards through achievement of PEOs, PILOs and CILOs; ensuring students' awareness of learning outcomes; and the completion of Course Assessment forms. The Panel also heard from support staff in the laboratories and the library about their roles in supporting student learning. In addition, senior staff interviewed by the Panel emphasized the role of international accreditation (ABET) processes as well as the ongoing review and evaluations by the university QAAC in promoting QA culture within the College of Engineering since 2005. From provided evidence and site visit interviews, it is evident to the Panel that

there is a shared understanding amongst academic and support staff members about the importance of the QA system. The Panel appreciates that the College provides capacity-building opportunities for academic and administrative staff to enhance their understanding of quality assurance concepts.

- 4.5 There are structured policies and procedures in place for the development of new academic programmes. The introduction of new programmes is achieved *via* well-defined processes involving the Departmental Curriculum Committee, Department Council, College Curriculum Committee, the College Council, and ultimately the University Council. During interviews, the Panel learned that these processes emphasize several aspects such as: the relevance of the suggested programme for the labour market, graduates' employment, feedback from internal and external stakeholders, as well as alignment with external accreditation benchmarks. The Panel was also informed that the Department of Civil Engineering has not yet developed new academic programmes. The Panel acknowledges that rigorous policies and procedures are in place to ensure that a newly developed programme is relevant, fit for purpose, and complies with institutional regulations.
- 4.6 There are clear arrangements for annual internal evaluation of curriculum, teaching and other academic issues. The guidelines for the preparation of internal Self Evaluation Reports and Improvement Plans for each programme are outlined in the 'Quality Manual for DAC Committees'. The cycles for annual evaluations are explained in the Program Quality Assurance Policy and comprises assessment of Program Educational Objectives (PEOs), Program Intended Learning Outcomes (PILOs) and Course Intended Learning Outcomes (CILOs). The QAAC coordinates quality assurance activities with other departments and colleges by providing the appropriate templates for the SER and action progress reports. In its interviews, the Panel learned that faculty members are required to prepare annual course reports which include: an analysis of students' achievement and grades with reference to the CILOs; analysis of pre-requisites; and quantitative results from students' evaluation. These reports are submitted through Departmental committees and discussed at the Department Council. The Panel also heard several examples of improvements made in light of these evaluations, including the removal or introduction of new courses, improvement in teaching or changes in course pre-requisites. The Department is also required to submit internal SERs, along with an improvement plan to the university QAAC, which, in turn, submits a summary report for all academic programmes to the University Council. Moreover, the QAAC releases information on key assessment statistics to all programmes in the University. This practice is commendable. The Panel appreciates that appropriate arrangements for annual internal programme evaluation are implemented to inform programme improvements.

- 4.7 Arrangements for the periodic external and internal reviews of programmes are stipulated in the Programme Quality Assurance and Enhancement Policy. In line with this policy, academic programmes are reviewed every five years via a process that incorporates both internal and external feedback, as well as mechanisms for implementing improvement recommendations. During interviews, the Panel learned that preparations for external accreditation by ABET is considered an important catalyst for internal reviews, which promotes improvements in the programme. These reviews have resulted in ABET accreditation of the programme in 2008 and 2014. The Panel notes that the SERs submitted in 2014 clearly deal in a comprehensive way with all aspects of the programme, such as admission policy, registration procedures, learning resources and promotion policy as examples. The Panel also notes that the Department systematically obtains feedback from internal and external stakeholders, including faculty members, students, alumni, as well as members of the PIAC. During interviews, employers and PIAC members indicated that periodic reviews of the programme ensure its relevance to the labour market and alignment with international standards. The implementation of internal and external reviews is monitored by the DAC and QAO to ensure consistency and adherence to the University Quality Assurance Center guidelines. The Panel appreciates that a rigorous system is implemented for the periodic review of the BS-CENG programme to ensure its relevance and continuous improvement. However, the Panel notes that the self-evaluation report submitted for the current review by QQA is in need of improvement. Whilst the Panel acknowledges that some areas for improvement are identified in the SER; the Panel finds the SER to be overall descriptive, rather than reflective. Senior University and College QA staff interviewed by the Panel acknowledged this limitation across the (8) SERs prepared for the Programmes-within-College Reviews of the College of Engineering programmes. The Panel recommends that College-level QAO and University-level QAAC should develop formal mechanisms to support drafting of self-evaluation reports that emphasise reflective evaluation, and to promote sharing of good practice in developing SERs across the College and University.
- 4.8 Mechanisms are in place for the periodic collection and analysis of feedback from internal and external stakeholders, consistent with the Programme Quality Assurance and Enhancement Policy. The University QA procedures require that a range of surveys are systematically conducted; these include Student Course Evaluation, Senior-Exit Survey, Alumni and Employer Surveys. From provided evidence, the Panel notes that the quantitative results from these surveys are statistically analysed and considered by academic staff, the Department Chairperson, and the Dean. The Department Chairperson has the key responsibility for ensuring that the survey results are included in the Department action plan during the review process, and that improvement actions are implemented. Examples of improvements made in light of these surveys are included in the SER and have been confirmed during interviews with

different stakeholders. The Panel appreciates that the structured comments collected from stakeholders' surveys are analysed, and the outcomes are used to inform mechanisms for programme improvement. Following the interview with external stakeholders, the Panel confirmed that the results of these surveys are conveyed to them through the PIAC. In general, there was a high level of satisfaction amongst stakeholders regarding the mechanism adopted to communicate with the department, getting feedback and implementing recommendations. However, the Panel notes that whilst comprehensive student surveys are performed that deal with every aspect of the learning and teaching operation; the outcomes from these surveys are not currently communicated to students. During interviews, students indicated that, in general, these results are not made public to them and they were not informed about changes resulting from their comments. In its interviews with senior management, the Panel was informed that the University is keen to take this issue forward, and that QAAC is planning an online survey tool to enhance the mechanisms for the communication of survey results. The Panel recommends that the College, in collaboration with QAAC, should enhance the current survey tools to ensure that the students' survey outcomes are transparent and effectively communicated to all stakeholders.

- 4.9 The SER states that all faculty members are expected to remain current in their discipline through scholarly and professional development activities. During interviews, the Panel was informed that the College of Engineering is committed to provide administrative and academic staff members with adequate opportunities for ongoing professional development. Faculty members interviewed by the Panel confirmed that they are encouraged by the College to participate in local, regional, and international conferences and training programmes. The Training and Development Office at the University is responsible for the identification of workshop topics and their communication to all colleges so that administrative and academic staff select the topics, as appropriate to their needs. From the provided list of professional development activities attended by the programme faculty, the Panel finds that the topics and number of activities are overall satisfactory, especially the topics on quality assurance and assessment. Following interviews with senior management, the Panel learned about the trend at University level towards increasing provision of continuing professional development for staff, including compulsory development for specific groups. Currently there are two "target" groups. First, newly appointed academic staff, including those returning with PhDs, are expected to complete the Postgraduate Certificate in Academic Practice Programme (PCAP) which is aligned to the UK Higher Education Academy Fellowship. Second, academic staff who were not scoring highly in student evaluations were mentored and peer reviewed by more qualified and experienced faculty members. The Panel acknowledges that the College provides opportunities for the professional development of faculty members; however, there was insufficient evidence that these activities are linked to formal training needs analysis or staff appraisal. Moreover, the SER acknowledges the limited participation

in professional development by the civil engineering faculty due to heavy teaching loads and budget restrictions. For the professional development programme to be more effective, the Panel also encourages the College and CENG Department to consider how staff in Civil Engineering can be provided with appropriate time and funding to engage in relevant professional development and updating. The Panel notes that Department's Improvement Plan includes an initiative on how staff could be supported to maintain up-to-date professional experience, through short secondments to work in industry. The Panel is of the view that the College should lead action to ensure that faculty members are supported to maintain and develop their specialist knowledge and research output to underpin the BS-CENG programme. The Panel recommends that the College should develop and implement a strategy for staff development, linked to staff appraisal, to enhance the professional capabilities of faculty members in the pursuit of their academic careers.

- 4.10 In scoping the labour market, the Programme Industrial Advisory Committee (PIAC) comprised of industry experts in the discipline, provide industry input to the curriculum and market needs. The SER also cites references to studies by the Bahrain Higher Education Council (HEC) as another element in scoping of the labour market. In addition, results of Alumni and Employers' surveys provide valuable feedback regarding the contemporary demands and requirements of the labour market. In its interviews with employers; training courses supervisors; senior project external examiners; and members of the Programme Industrial Advisory Committee (PIAC), the Panel noted the commitment of these external stakeholders in supporting the currency and relevance of the programme to the local labour market, and their enthusiasm to support future development. The Panel also acknowledges the responsiveness by the Department to suggestions from PIAC about the introduction of new courses to reflect the developing labour market. The Panel finds these initiatives to be appropriate and may be further expanded to ensure that the programme is aligned with the labour market needs. The Department recognizes in its improvement plan the need to 'Conduct regular studies of the labour market to ensure that programmes are up-to-date and match market needs'. The Panel concurs and recommends that the College should conduct specialised scoping studies to ensure that the BS-CENG programme remains up-to-date.
- 4.11 In coming to its conclusion regarding the Effectiveness of Quality Management and Assurance, the Panel notes, *with appreciation*, the following:
- A comprehensive and well-documented set of institutional policies, procedures and regulations are in place and are applied effectively and consistently in the BS-CENG programme and across the College of Engineering.
 - The BS-CENG programme is managed in a way that demonstrates effective and responsible leadership.

- A comprehensive quality assurance management system is in place and is consistently implemented and monitored.
- The College provides capacity-building opportunities for academic and administrative staff to enhance their understanding of quality assurance concepts.
- Appropriate arrangements for annual internal programme evaluation are implemented to inform programme improvements.
- A rigorous system is implemented for the periodic review of the BS-CENG programme to ensure its relevance and continuous improvement.
- Structured comments collected from stakeholders' surveys are analysed, and the outcomes are used to inform mechanisms for programme improvement.

4.12 In terms of improvement, the Panel **recommends** that the College should:

- enhance the mechanisms for communicating new institutional policies to respective stakeholders to ensure the effective application of these policies
- develop formal mechanisms to support drafting of self-evaluation reports that emphasise reflective evaluation, and to promote sharing of good practice in developing these reports across the College and University
- enhance the current survey tools to ensure that the students' survey outcomes are transparent and effectively communicated to all stakeholders
- develop and implement a strategy for staff development, linked to staff appraisal, to enhance the professional capabilities of faculty members in the pursuit of their academic careers
- conduct specialised scoping studies to ensure that the BS-CENG programme remains up-to-date.

4.13 **Judgement**

On balance, the Panel concludes that the programme **satisfies** the Indicator on **Effectiveness of Quality Management and Assurance**.

5. Conclusion

Taking into account the institution's own self-evaluation report, the evidence gathered from the interviews and documentation made available during the site visit, the Panel draws the following conclusion in accordance with the *DHR/BQA Programmes-within-College Reviews Handbook, 2014*:

There is confidence in the B.Sc. in Civil Engineering offered by the College of Engineering at the University of Bahrain