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Directorate of Higher Education Reviews

Programmes-within-College Reviews Report

**Master of Science Degree in Engineering
Management (MSEM)**

College of Business and Finance

Ahlia University

Kingdom of Bahrain

Date of the Review: 8-11 May 2017

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Acronyms

ACID	Ahlia Centre for Information and Documentation
ADREG	Ahlia Admission and Registration System
APF	Academic Planning Framework
ASDC	Academic Staff Development Committee
ASEM	American Society for Engineering Management
ATDC	Ahlia Training and Development Centre
AU	Ahlia University
AUQMS	Ahlia University Quality Management System
ASDC	Academic Staff Development Committee
BQA	Education & Training Quality Authority
CAQA	Centre for Accreditation and Quality Assurance
CBF	College of Business and Finance
CEAB	College External Advisory Board
CGPA	Cumulative Grade Point Average
CILO	Course Intended Learning Outcome
CME	Centre for Management and Evaluation
DHR	Directorate of Higher Education Reviews
EM	Engineering Management
EMSE	Engineering Management and Systems Engineering
EMSE-OCP	Engineering Management and Systems Engineering-Off-Campus Programme
EMSE-OOCP	Engineering Management and Systems Engineering- Online and Off-Campus Programmes
GWU	George Washington University
HEC	Higher Education Council

HR	Human Resources
IAQAC	Institutional Accreditation and Quality Assurance Committee
ICTC	Information and Communication Technology Centre
ILO	Intended Learning Outcome
LMS	Learning Management System
MBA	Master in Business Administration
MIS	Management Information System
MOA	Memorandum of Agreement
MSEM	Master of Science in Engineering Management
NQF	National Qualifications Framework
PD	Professional Development
PILO	Programme Intended Learning Outcome
POC	Point of Contact
PRD	Programme Review Documentation
PWCR	Programme within College Review
QAAC	Quality Assurance and Accreditation Centre
SEAS	School of Engineering and Applied Sciences
SER	Self-Evaluation Report
TLAC	Teaching, Learning, and Assessment Committee

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 Ahlia University

A Programmes-within-College review of the Master of Science Degree in Engineering Management programme offered by the College of Business and Finance (CBF) of Ahlia University (AU) was conducted by the DHR of the BQA in terms of its mandate to review the quality of higher education in Bahrain and the site visit took place on 8-11 May 2017.

This Report provides an account of the review process and the findings of the Panel for the Master of Science Degree in Engineering Management programme based on the Self-Evaluation Report (SER) and appendices submitted by AU, the supplementary documentations made available during the site visit, as well as interviews and observations made during the review site visit.

AU was notified by the DHR/BQA on 8 January 2017 that it would be subject to a Programmes-within-College review of the Master of Science Degree in Engineering Management programme offered by its CBF, with the site visit-taking place in May 2017. In preparation for the review, AU conducted a self-evaluation of its Master of Science Degree in Engineering Management programme and submitted the SER with appendices on 23 March 2017.

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

This Report records the evidence-based conclusions and findings reached by the Panel for the Master of Science Degree in Engineering Management 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 documentations requested and presented to the Panel during the site visit.

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

The DHR would like to extend its thanks to AU for the cooperative 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 Business and Finance.

C. Overview of the College of Business and Finance

The CBF is one of the six colleges of AU, which was established in 2001. AU currently offers 12 undergraduate programmes in a number of areas as well as four master's degree programmes in Business Administration, Information Technology and Computer Science, Mass Communication and Public Relations, and Engineering Management. It also offers a PhD in Business Management programme in partnership with Brunel University London. This PhD programme along with two other master's degree programmes (one in Engineering Management and one in Business Administration) and five Bachelor degree programmes lie within AU's CBF, whose vision according to the university official website is 'to be a world class leader in business education, by promoting excellence in learning, scholarship and service, with emphasis on meeting the changing needs of its stakeholders'. The mission of the College includes providing high quality business education through experiential learning in a collegial and intellectually stimulating environment that promotes teamwork and professionalism and emphasizes continuous improvement and innovation.

D. Overview of the Master of Science Degree in Engineering Management

The Master of Science Degree in Engineering Management programme was offered at AU for the first time in the first semester of 2012-2013 academic year. This programme is a George Washington University (GWU) degree but offered off-campus at AU, which collaborates with the Department of Engineering Management and Systems Engineering at GWU, to develop leaders for technically-oriented organizations and to prepare them for the future. A Memorandum of Agreement (MOA) with respect to the Master of Science Degree in Engineering Management programme was first signed with GWU in 2009; it was then revised in 2012 to highlight some changes in course codes and other minor changes related to administrative purposes. As mentioned on the GWU programme's webpage, the programme focuses on graduating creative and technical managers and leaders with a broad education, through the delivery of graduate education in the most current management techniques that would help in the formulation and execution of decisions in engineering and scientific organizations. The statistics provided in the SER show that three cohorts with a total of 73 students have already graduated from the programme since its inception and by the time of the site visit, six students had already completed their graduation requirements, which would make the total number of graduates equal to 79 by the end of the 2016-2017 academic year. Currently, there are 26 students registered in the programme on a full-time basis, with 15 full-time and two part-time faculty members and 23 college administrative staff partially contributing to its delivery.

E. Summary of Review Judgements

Table 2: Summary of Review Judgements for the Master of Science Degree in Engineering Management

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 Master of Science degree in Engineering Management (MSEM) is an award of George Washington University (GWU) delivered off-campus through Ahlia University (AU). The programme is designed to reflect the philosophy of the Engineering Management and Systems Engineering Online and Off-Campus Programmes (EMSE-OOCP) Office, by seeking to offer both academic rigor and the pursuit of leadership in the engineering management and systems engineering fields. In so doing, the aims of the programme itself are to: 'equip students with advanced professional knowledge and skills in areas of Engineering Management (EM) in accordance with international standards; graduate highly effective engineering management professionals who not only understand the concept of management but can contribute to the leadership of their technical organizations and increase their organization's productivity to gain a competitive advantage; nurture an innovative research culture; prepare graduates to demonstrate ethical behaviour and to be professionally competent and motivated to life-long learning'. From evidence provided, it is clear to the Panel that the programme contributes to the achievement of the vision, mission and strategic goals of both partners (i.e. GWU and AU) and that the programme aims are appropriate to the level and type of the degree. On this basis, the Panel appreciates the relationship between the aims of the programme and the vision, mission and strategic goals of the contributing universities. Nevertheless, although requested in several occasions during the site visit, the Panel was not provided among the evidence with an explicit and distinct academic planning framework (APF) document for the programme, beyond the 'Action Plan for the GWU MSEM Programme January–December 2017' and the 'diagram showing the relationship between all key players managing the programme from AU and GWU'. This constituted a concern for the Panel given the complexity normally involved in transnational programme delivery where a clear planning framework delineating authorities and responsibilities is particularly important. The Panel therefore recommends that the programme team should produce a comprehensive APF reflecting the work of both AU and GWU and which considers expertise representation on major programme committees and boards to inform the programme on relevant regulatory and quality issues.
- 1.2 As stated in the SER, 'the MSEM curriculum is designed to develop leaders for technically oriented organizations and prepare them for the future'. The MSEM programme is delivered in Bahrain with a focus on Engineering and Technology Management and its curriculum includes 12 courses totalling 36 semester credit hours (144 NQF credits), including two types of course requirements: four core courses (12

credits) and six focus courses (18 credits). This is in addition to two research courses: 'Research' (EMSE 6995) (6 credits), where students are expected to utilize their knowledge and skills in writing a defensible thesis in Engineering Management (EM), preceded by the prerequisite course 'Special Topics: Research Methods for the EM' (EMSE 6992) (3 credits). With regard to the focus courses, they offer a set of specialized and well-sequenced topics that, as a whole, provide the level of detail necessary for proficiency in particular areas, such as organizational behaviour, programme and project management, logistics planning, risk analysis, technical enterprises, and marketing of technology. Moreover, the Panel notes that students are expected to complete eight courses (24 credits) in the first academic year spread evenly over a total of four sessions: two sessions in the first semester and two in the second semester; while, in the second academic year, they are expected to complete four courses (15 credits), which include the dissertation course. As such, the Panel finds the student workload is appropriate and students are given an advance schedule at the beginning of the semester indicating submission dates for assessments and final examinations, enabling them thus to plan their time accordingly. In terms of the balance between theory and practice, work-based learning is not included as an explicit course in the programme although most students have knowledge of engineering practice, as the SER states that the 'majority of the students who have matriculated in the programme are already gainfully employed in EM-related organisations in the public or private sector'. Further evidence available confirms that, where the opportunity is presented, most students select research projects consistent with their current professional practice. More generally, course files available during the site visit, in addition to interviews with academic staff, students and alumni indicate that opportunities for the application of theory to practice are given in taught modules, sometimes through the use of local case studies, and that the two research courses provide substantial pieces of independent work with the opportunity to apply theory to organisational and individual practice for all students. In relation to knowledge and skills, the SER indicates that GWU sets the curricular content, level, and outcomes and it regularly updates these. On this basis, the Panel notes with appreciation that the curriculum balances between theory and practice and knowledge and skills and is organised to provide academic progression and suitable workloads for students.

- 1.3 Specifications are clearly stated for each course using a course syllabus template, which is well-designed and contains relevant information for course delivery and assessment, namely: detailed information on the Course Intended Learning Outcomes (CILOs), teaching and assessment methods of each category of CILOs, mapping of CILOs to Programme intended learning Outcomes (PILOs) , weekly lecture topics, as well as key texts and academic journals as course references. From these syllabi, it is clear that course content covers all elements required and that textbooks and references are generally current and appropriate. Additionally, the Panel is of the view that while the core courses provide the required breadth, the focus courses achieve

appropriate depth through specialized and advanced topics and that current research and professional practice are incorporated as appropriate. Moreover, as stated in the SER, the content, level, and outcomes are routinely updated by GWU and this is supported by an informal benchmarking study that had been undertaken to compare the programme on a range of variables against other equivalent programmes. The Panel appreciates that the syllabus meets the norms and standards of the disciplinary field and that the course documentation is accurate and reflects current research and professional practice.

- 1.4 There are clearly stated PILOs presented in the 'Programme Specification' document that are grouped into four main categories: Knowledge and Understanding; Subject-Specific Skills; Critical Thinking Skills; and General and Transferable Skills. Based on examination of these PILOs, the Panel finds them to be appropriate for the level and type of degree being awarded. The PILOs are suitably linked to programme aims and are appropriately written and properly grouped in their specific categories. The Panel notes the work undertaken to ensure that a programme of this nature, international in design and delivered locally, remains consistent with its original mission and programme aims and objectives and is also made consistent with Bahrain regulatory requirements in terms of programme specifications, PILOs, and CILOs appropriate for the level and type of the award. Hence, the Panel appreciates that the PILOs are clearly stated, are appropriate for the level of the degree and are aligned with the programme aims.
- 1.5 From the evidence provided, there is a clear mapping of the courses to the PILOs. In addition, the CILOs are explicitly stated in each course specification and are appropriate to the aims and levels of their courses. However, based on the review of samples of course files and course syllabi, the Panel finds that although there is accurate mapping of CILOs to PILOs in the course specifications, there is an inconsistency between and among courses in relation to how this mapping is done or displayed. For example, while there is clear cross-referencing of CILOs to fully-stated PILOs in the form of a two-columned table in the syllabus of 'Survey of Finance and Engineering Economics' (EMSE 6410); in 'Research' (EMSE 69950) and 'Systems Engineering I' (EMSE 6801), there is only mapping of CILOs to the numbers and titles of the PILOs. Although this does not constitute a major concern, especially when the mapping accurately relates CILOs to PILOs as confirmed by the Panel; still, the programme team is advised to ensure further consistency among course syllabi, in general, and the mapping format/presentation of CILOs to PILOs included in them, in particular. Nonetheless, the Panel acknowledges that the CILOs are appropriate for the level and content of the courses and are explicitly mapped to the PILOs.
- 1.6 AU follows a clearly documented teaching and learning plan that includes its 2016-2020 teaching and learning philosophy, goals, and objectives, which emphasize

promoting a knowledge-based culture at AU with a vibrant learning community in which excellence in teaching, learning, and research is supported and encouraged. This is in addition to stressing the implementation of a variety of teaching and learning methods that enrich students' learning experiences, enhance their employability skills, and foster their lifelong learning. The SER, when referring to the wide range of teaching and learning approaches utilized at AU, specifically identifies 'innovative methods including independent problem-solving methods, group discussions and debates, practical sessions and literature search using the Internet and a variety of library resources including electronic databases' that support the fulfilment of the programme aims and PILOs. The Panel notes that these approaches or methods are explicitly specified in the specifications document or syllabus for each MSEM course and included in the course files provided among the site visit evidence submitted; they are also appropriately mapped to the CILOs and their associated PILOs. However, although the AU 2016-2020 Teaching and Learning Plan is consistent with GWU's 'EMSE Publication on Teaching' document and although it refers to a wide range of teaching and learning methods, a review of the course files indicated the predominance of lectures as a teaching method, followed by class discussion, in-class exercises, guided discussions and sometimes presentations. Even interviews with students and alumni confirmed the prevalence of lectures as the main teaching method. On the same lines, a list of sample titles of case studies employed in the MSEM programme cross-referenced to courses indicates the use of case studies the majority of which are not directly related to the local or regional context. Although the Panel welcomed the interview feedback from some teaching faculty who had developed case studies relevant to the local context, the Panel is of the view that, in general, more could be done to design and select teaching and learning methods relevant to the local context and to the types of students recruited and conforming with the general aims of the programme as specified in the SER. Additionally, while the Panel acknowledges that the thesis and the preparation for the thesis courses provide a vehicle for critical reflection and independent learning (both research courses being specifically noted and appreciated by students), the Panel is of the view that the predominant use of lectures in taught courses does not provide the space for the progressive development and encouragement of confident independent learning throughout the programme. Consequently, the Panel recommends that the programme team should review and modify the range of teaching methods in relation to the programme aims and the local context, in a manner that further encourages students to develop progressively throughout the programme as confident and independent learners. Notwithstanding the above, the Panel notes that further e-learning development is taking place in the MSEM programme and is being supported by the university's Information and Communication Technology Centre (ICTC) through the provision of students and staff with continuous technical support, training workshops, and one-to-one help in relation to MOODLE, the online learning platform of choice at AU. Interviews with faculty and students highlighted the value of further developing e-learning within the

master's programme and the increasing use of multi-media in certain courses. The Panel acknowledges the use of e-learning and notes that interviewed students welcome this as adding further value in the learning process.

- 1.7 AU relies on the GWU 'Assessment Manual for the GWU MSEM Programme at AU', which provides detailed advice on policies, procedures, processes, regulations and criteria for the design, conduct, marking, verification and moderation of formative and summative assessments, for ensuring that assessments are applied fairly and consistently across all deliveries of the MSEM programme. This Manual is complemented by the 'Guidelines and Procedures for Ensuring Consistency and Quality of Delivery of GWU MS Programme in EM at Ahlia University' document, which was developed in April 2013 and revised in April 2015. Both documents relate directly to the master's programme. Additionally, guidance is provided in the 'Guidelines and Procedures for Supervising and Examining MSEM Students Research' document, which provides a customized version of the guidelines for the MSEM programme delivered at AU to identify and disseminate standards of good practice for supervising and examining research conducted by master's students. In specific, the aforementioned documents include assessment arrangements, policies and procedures pertaining to requirements for formative and summative assessments, student appeal, plagiarism, and provision of feedback. With respect to requirements for formative and summative assessment opportunities, these are specified with associated marking criteria in the Assessment Manual, which stresses the importance of communicating clear criteria for marking through both oral and written means. With regard to student appeals, they have to be submitted before the end of the quarter right after the grade is awarded. As for plagiarism, additional policies and procedures related to it are also available in the 'Student Guidebook for GWU MS Programme in Engineering Management at Ahlia University' with the latter noting that, following HEC directives, AU follows the University of Bahrain students' code of conduct, which includes plagiarism. Finally, concerning feedback, the Assessment Manual specifies that course instructors must return student scripts with feedback on major assessments normally within seven working days (or less) after the assessment. For research projects, instructors have 14 days to provide feedback. Finally, for the thesis, there is a similar emphasis on prompt feedback as a means of promoting learning. During interviews, current students, alumni and staff explained that feedback on progress and performance in assessment is available through written as well as oral means and that, typically, feedback provides guidance on how improvements could be achieved. Assessment policies are disseminated to stakeholders in a variety of ways. Students are made aware of assessment policies and procedures through an induction/orientation session provided at the beginning of the programme. Also, at the beginning of each course, students are provided with the details of assessment procedures for the course. As for the staff, they are introduced when newly hired to assessment policies and procedures through an induction process provided both by

AU and GWU and through the Chairperson of the EMSE Programme Committee. Interviews with faculty members teaching on the programme and with students and alumni confirmed that there exists a high level of awareness of policies, procedures and regulations as they apply to the master's programme. The Panel appreciates that suitable assessment arrangements, which include policies and procedures for assessing students' achievements, are in place and known to all academics and students.

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

- The aims of the programme are consistent with the vision, mission and strategic goals of both George Washington University and Ahlia University.
- The curriculum balances between theory and practice and knowledge and skills and is organised to provide academic progression and suitable workloads for students.
- The syllabus meets the norms and standards of the disciplinary field and the course documentation is accurate and reflects current research and professional practice.
- The Programme Intended Learning Outcomes are clearly stated, are appropriate for the level of the degree and are aligned with the programme aims.
- Suitable assessment arrangements, which include policies and procedures for assessing students' achievements, are in place and known to all academics and students.

1.9 In terms of improvement the Panel recommends that the programme team should:

- produce a comprehensive academic planning framework reflecting the work of both Ahlia University and George Washington University and which considers expertise representation on major programme committees and boards to inform the programme on relevant regulatory and quality issues
- review and modify the range of teaching methods in relation to the programme aims and the local context, in a manner that further encourages students to develop progressively throughout the programme as confident and independent learners.

1.10 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 There is a clearly documented admission policy for the MSEM programme, which stipulates the holding of a bachelor's degree with a major in a technical field with a 3.0 Cumulative Grade Point Average (CGPA) as minimum requirements for entry into the programme. This policy includes the same admission requirements as those for the GWU EMSE Master in Science degrees. Students with less than 3.0 CGPA may be admitted to the programme conditionally if they have fulfilled two college calculus courses and earned grades of C or higher; those students however must enrol in and successfully complete the course 'Special Topics: Quantitative Methods in Engineering Management' (EMSE 4197). Moreover, the University has a clear policy for accepting transferred students with up to six credit hours of relevant post-graduate courses from other institutions. The admission policy and procedures are published on the university website, in the University Catalogue, and in the Programme Handbook. The Panel notes the clear admission policy for newly admitted and transferred students. Among other things, the policy stipulates that all applicants are required to demonstrate English language proficiency, and evidence from staff and students' interviews as well as from the original MOA confirms that such proficiency is demonstrated through the submission of English examination scores such as TOEFL or IELTS; although, it was not made clear to the Panel what are considered as minimum English passing scores. In addition, the Panel notes, from interviews with students, that there is an inconsistency in their level of English language skills. This is a concern especially since the MSEM programme is meant to be taught in English. The Panel recommends that the programme team should review the English proficiency requirements, to ensure that these are clearly stated and are suitable for the needs of the MSEM programme and provide a remedial programme to bring the students' English language skills to an appropriate level, where needed.
- 2.2 From the statistics provided, the Panel notes that both the current and past student cohorts show a variation in students' profile in terms of undergraduate majors and related CGPAs and years of graduation. In addition, admitted students in general have higher undergraduate CGPA relative to admitted CGPA average in similar international programmes. They also have, as detailed in paragraph 3.9, a commendable completion timescale in terms of length of study and a reasonably acceptable retention rate. In addition, students are admitted to the MSEM programme from many undergraduate specialization areas and those admitted from non-relevant areas (i.e. Law College) as per a sample of a conditional admission letter, or from vocational and commercial high school streams, are requested to take, as a remedial measure, extra mathematics and statistical courses ['Engineering Analysis III' (APSC

3115); ‘Calculus with Pre-calculus II’ (MATH 1221)]. This was confirmed to the Panel by the sample of students interviewed during the site visit. However, the Panel is of the view that this type of remedial is not sufficient to bring these students to the same level of students entering the programme from engineering routes. The Panel notes that the College is aware of this issue as indicated in site visit interviews with faculty and staff. The Panel recommends that the programme team should revise the admission criteria, to ensure that admitted students, in particular those with arts, commercial and vocational backgrounds have the mathematical and scientific skills needed for the programme.

2.3 The MSEM programme management lies between the EMSE Programme Committee at AU and the GWU EMSE-OCP Board. The EMSE Programme Committee is chaired by the Programme Coordinator (referred to as the Point of Contact “POC” and Chairman of EMSE Programme Committee at AU). The Panel notes that there are clear roles defined for the POC, who with the help of the GWU academic advisor coordinates the teaching and learning activities related to the MSEM programme. The works of the EMSE-OCP Board and the EMSE Programme Committee headed by the POC are supported by a functioning structure of diverse academic work groups that include members of faculty (e.g. committees, boards, centres), comprising the University Academic Staff Development Committee (ASDC), College of Business and Finance (CBF) External Advisory Board (CEAB), Teaching Learning and Assessment Committee (TLAC), the ICTC, and the Quality Assurance and Accreditation Centre (QAAC), among others, at the college and university-wide level. The Panel found sufficient evidence of the functioning of these academic work groups through meeting minutes, decisions, and reports. The Panel notes with appreciation the active engagement of the academic staff within the programme management. However, the Panel is concerned that the multi positions assumed by the POC (Programme Coordinator, Chairman of the EMSE Programme Committee, and POC), with the long list of responsibilities attached to all of these positions, might overload the POC and prevent him from exercising an effective leadership. The Panel therefore encourages AU to address this issue.

2.4 With respect to specialized faculty serving on the MSEM programme, the programme is currently delivered by three staff members with PhDs in engineering-related disciplines and four staff members with PhDs in business and management related areas. Of these seven faculty members, three are Associate Professors and four are Assistant Professors. In addition, there are two lecturers with a master’s degree in a business administration-related area serving on the programme, and eight PhD holders from areas of specialization different from engineering and business/management, among whom three are full professors, two are Associated Professors, and three are Assistant Professors. This brings the student-to-staff ratio to approximately 16:1, considering the relatively small number of students enrolled in

the programme at this stage. However, these faculty members contribute also to the delivery of other programmes offered by AU, thus increasing their actual load. They also serve on academic committees and are assigned some administrative duties as well. The Panel finds that the administrative work required from most of the faculty members is reasonable and within international limits. The Panel also finds, based on scrutiny of the faculty CVs and other relevant documentations provided, that the published work by staff has an inclination towards business, economics, and finance rather than engineering management and systems engineering, which is something expected when taking into consideration the faculty profile. Nonetheless, the Panel noticed that in some cases faculty are delivering courses outside their main area of specialization especially relevant to 'Systems Engineering I' (EMSE 6801). During the site visit, the Panel was informed that the AU programme team in consultation with the EMSE-OCP Board has developed a plan to recruit new faculty members with PhD in engineering-related fields. This is particularly needed for the delivery of the core courses as outlined by the MSEM curriculum. Hence the Panel recommends that the Programme team should expedite the recruitment plan to ensure that the programme is adequately staffed, as per the teaching staff qualification criteria referenced in the SER.

- 2.5 There are well-documented policies related to recruitment, appraisal and promotion of staff members. The recruitment process involves the EMSE Programme Committee and the CEAB at AU and the EMSE-OCP at GWU. The process starts from the Chair of the EMSE Programme Committee at AU who identifies staffing needs with the EMSE-OCP Board, as per the MOA amended on 5 October 2012. After receiving employment applications, the EMSE Programme Committee studies all applicants, conducts interviews, and prepares a report for the College Council including the names of the nominated candidates. The Council then sends its recommendation to the Appointment and Promotion Committee, which is responsible for forwarding all positive recommendations to the University Council for endorsement. The Panel appreciates the transparency of the recruitment process and the fair policy on recruiting applicants. Once recruited, newly appointed staff receive a comprehensive induction on university services, such as MOODLE, the library, EMSE-OCP, and IT services. The induction also covers presentations on issues related to Human Resources (HR) and finance, as well as academic, admission and registration policies. Senior management personnel participate in the induction to emphasize the university's vision, mission, objectives, and organization chart. Before commencing teaching classes, both full-time and part-time staff members learn about the teaching and learning, assessment and other relevant academic policies. During interview sessions, current academic staff members expressed their satisfaction with these arrangements. The Panel appreciates the arrangements in place to prepare newly recruited staff for assuming their responsibilities within the MSEM programme. AU has an annual appraisal process based on an overall evaluation of each faculty

member's performance. The appraisal evaluation sheet utilized in the process covers most of the faculty activities during the academic year, including research activities, teaching load, development of the learning process, contribution to students' support activities and community services, and professional consultation. Tied with the faculty appraisal is the staff retention policy and the academic promotion policy. The retention policy stipulates that staff who prove themselves as positive contributors to the programme and university are retained and continue with their services. The Panel finds the faculty retention rate of 76.5% in the last two years to be acceptable. As for the promotion policy, the Panel notes that it stipulates the role of the Department, the College, and the University in promotion decisions. This was confirmed during the site visit through samples of promotion files that were each reviewed by three committees at different levels. Promotion of faculty members is based on their achievements and performance in teaching, research, and university and community services. The Panel noticed from evidence provided that the number of promotions is limited and during interviews with staff members, the Panel learned that there were no promotions in the academic year 2016-2017 and one staff member is currently applying for promotion. The Panel recommends that the programme team should conduct a study to assess the reasons behind the low promotion numbers and develop and implement a related mitigation plan.

- 2.6 The MSEM programme at AU benefits from a number of management information systems (MISs), mainly the Banner system at GWU that is used by the EMSE-OOCP to inform decisions about students registered in the programme; and the Admission and Registration (ADREG) software system at AU, which provides access to a variety of information and reports that help in administering the programme. In addition, the MSEM benefits from the services of the ICTC at AU, which together with ADREG provide means for maintaining students' records with respect to admissions and registration, admission profile, faculty time-tabling, examination marks entry and processing of results. The ICTC enables academic staff to directly enter examination marks electronically independent from the GWU system and is used to generate a host of reports for management decision-making. Interviews with some support staff and academics confirmed that the reports they receive from the system are adequate for their needs, and allow for effective identification and monitoring of 'at risk' students. Moreover, evidence is provided on how some ICTC reports are effectively used by academic advisors at AU as information tools about their 'at-risk' students. The Panel observed a physical demonstration of the ICTC platform during the campus tour and notes that there are sufficient security features to ensure the integrity of the system. The Panel appreciates the use of the available MISs and ICTC to support teaching and learning and to aid decision-making; the Panel also encourages the College to seek further enhancement of the utilization of the ICTC system by introducing more analytical functionalities to make it more suitable for supporting decision-making in the programme, the College, and the University at large.

- 2.7 AU has policies and procedures in place to ensure the security of the learners' information. These include having backup copies of records on-and-off site and data administration arrangements related to authorizations for the different levels of users. There is also a general policy in place to ensure the security of records through a defined authorization mechanism, storage of data, privacy of information, exchange of information, the usage of anti-virus and security tools, and the security agreements with users. The Panel also learned from the interviews and campus tour visit, that AU has a Disaster Recovery Plan in terms of which data from the ICTC is backed up periodically to forestall any potential loss of data through disasters such as fire. The Panel appreciates these policies, procedures, and arrangements in place to protect students' records. With respect to students' grades, they are all initially entered on both AU and GWU systems and then reviewed independently and finally approved by EMSE-OCP Board and effectuated by the GWU registrar before being confirmed in the AU system as final and, thereafter, sent to the POC for filing. After this, an additional validation is done by the Registration Department through a 'second marks entry'. Once grades and results are confirmed on the AU system, they can be securely accessed by students and academic staff. Site visit interviews with academic and administrative staff confirmed the aforementioned approval and validation procedures; whereas interviewed students confirmed that they additionally have restricted access to the GWU system *via* a secured login protocol and are able to access their examination results and academic records online. Nonetheless, despite all these security procedures, the Panel noted from interviews with some academic staff members of MSEM that there is an inconsistency in ensuring the security of assessment tools and students' assessed work; since a few faculty members reported that they store such tools and works in their offices while others mentioned that they store them with the course coordinator and one faculty member even explained that he stores them in his own house. The Panel therefore recommends that the programme team should develop and implement more stringent procedures for ensuring the security of assessment tools and learners' assessed work at AU.
- 2.8 The Panel toured the university campus and visited the teaching halls, laboratories, staff offices, library, bookstore, praying spaces, food court, student activity hall and other facilities. Although the Panel was shown a nurse's station within the university building, it was quite clear that this facility is poorly equipped and not functional. The Panel therefore advises that AU establish a better equipped and dedicated health clinic for students and staff. As regards the computer laboratories, the Panel notes that there are three relevant to the MSEM programme with 60 computers, and six teaching halls equipped with data-shows and needed technology. During the site visit interviews with students and staff, the Panel confirmed that the University provides within its facilities internet services, Wi-Fi, email, troubleshooting support, software installation, and access to the university services for all students and faculty members including those of the MSEM programme. However, the Panel notes that within the laboratories'

allocation, there are no clear free hours that should be posted on the door and during which students can have access to the facilities to perform research and work on their assignments. In addition, AU's main library supports all MSEM students and it holds with respect to the MSEM programme approximately 25 hardcopy titles, five hardcopy journals, and access to an electronic library and databases locally at AU in addition to access to online resources on the GWU website available only to the MSEM students. The library is also open daily from 8:00 am to 10:00 pm seven days a week. The Panel notes the library facility with specific private study spaces available for graduate students and acknowledges that overall AU has good facilities to support the graduate students' learning experiences. However, the Panel advises the University to expand the study areas available for students to better facilitate students' individual and group work.

- 2.9 AU employs a number of tracking systems to evaluate the utilization of its different resources and enable informed decision-making and planning. During interview sessions, the Panel was informed that the ADREG system generates attendance sheets to track the usage of laboratories and classrooms. The laboratory assistants in addition use logbooks to track the usage of the laboratories outside official class hours. Whereas, the ICTC produces reports on the usage of computers in the laboratories, which are utilized by the programme team for resource planning. As for the library, the library information system provides tracking of the number of library resources, the books checked out and borrowed, and the overdue books; whereas, the e-resources are tracked through database logs that are used to make decisions such as whether or not to renew database subscriptions. With respect to e-learning, reports on its use are generated by the Learning Management System (LMS) 'MOODLE'. The Panel notes the availability of the different tracking mechanisms and advises that the College establish a comprehensive resource tracking system to holistically track usage by students and staff and utilize the outcomes to further support decision-making at a more strategic level.
- 2.10 The SER states that AU fully supports students by providing a wide range of services. For example, when students first enrol into the programme, they are provided with a university-wide induction, which includes the use of laboratories and other facilities as well as other areas of academia at AU (See paragraph 2.12). Moreover, the Panel notes that there are arrangements in place to provide support for students on the use of laboratories, the library, and e-resources. This is represented by having a technical support unit for the whole university, teachers and laboratory assistants in the laboratories, and support staff in the library. During the touring session, the Panel met with the library staff, who explained the services that are provided to help and advise the MSEM students on using the library resources. Similarly, the Panel noted the presence of technical staff available in the computer laboratories to support users during class time. The Panel is of the view that this type of support helps the lecturer

to maintain the quality of teaching without concerns about technical problems that can emerge during study hours. The Panel however encourages the College to continue in increasing the library holdings as related to the Engineering Management specialization. In addition, the programme has an academic advisory system for advising students on academic issues. Academic advising plays an important role in the following-up on the progress of students, especially at-risk students (See paragraph 2.13). During the touring and multiple interview sessions, the Panel was informed also of the services available to address students' non-academic challenges, such as counselling services, career guidance, and special needs' support, which interviewed students and alumni expressed satisfaction with. The Panel appreciates the range of academic and non-academic support provided to students of the MSEM programme.

- 2.11 AU has a formal university-wide induction day for newly admitted students provided at the commencement of each semester. In addition, for every new cohort, the University organizes before the beginning of classes a GWU/MSEM induction day to familiarize students with a number of services, resources, and regulations such as: library resources, MOODLE, Turnitin, writing theses' guidelines, and other related rules and regulations. During induction, the Student Handbook, stipulating all important information, policies and guidelines, is distributed to all students. The Panel acknowledges the active involvement of the Student Council and alumni, as well as the academic advisors from both AU and GWU in the orientation process. The Panel considers that the face-to-face orientation day is very helpful in preparing students for their studies, and is additionally pleased that efforts are made to provide material online for the benefit of those who are unable to physically attend the orientation session. Students confirmed the orientation process and its value during the interview sessions. The Panel appreciates the induction arrangements in place, which students are overall satisfied with, and advises the College to formally assess the effectiveness of the two orientation/induction sessions and related materials.
- 2.12 The SER states that students who obtain a grade less than 'B-' in a course are sent a warning letter from the EMSE-OOCP Office at GWU urging them to improve their academic performance and, in addition, receive counselling from the Chair of the EMSE Programme Committee. At the same time, their academic advisors get electronically notified by GWU of this academic warning and work with the student to develop an action plan in order to identify the challenges faced by the student and the ways to address them. The advisor then follows up with the student on a frequent basis and records the progress made, and the results of the discussions. The Panel notes that the fact that academic advisors have access to students' academic records through the ICTC makes following up on their students' progress easier. During the site visit, the Panel was informed that these meetings have helped students in better organizing their study plan. Moreover, the Panel learned during interviews with

students that they meet with their advisors on a regular basis during the semester; in particular, during the registration period. Students also usually seek the help of their professors by visiting them during their office hours, which the Panel noticed are posted on their office doors. Students at risk of academic failure in specific benefit considerably from the aforementioned advising and follow-up sessions. At-risk students are defined for the MSEM programme as those with a (CGPA) of less than 3.0 in the first two sessions of enrolment. According to the programme's Student at Risk Policy, students should be monitored before their CGPA reaches 3.0, especially since with a GPA of 3.0 or less, students are prevented from registering online, as per GWU guidelines, and have to seek academic advice. During the past two years, only seven students enrolled in the MSEM programme have been identified as 'at-risk'. Three of these seven students were either dismissed or withdrew from the programme and another three managed to improve their performance due to proper interventions; while, one still remains as the only at-risk student currently enrolled in the programme. The Panel appreciates that policies and procedures are in place to identify at-risk students and to provide timely interventions for them.

- 2.13 The Panel investigated the learning environment through the campus tour and interviews with students and staff and found that the physical environment encourages both formal and informal learning through the availability of facilities, including the library study spaces (albeit limited), the cafeteria, the computer laboratories, Wi-Fi access and LED monitors. The student experience is also enhanced through the availability of distinguished speakers who visit the AU campus, enabling students to learn more about Engineering Management disciplines germane to their study. While there is evidence that students are offered extra-curricular and co-curricular opportunities during their study, no evidence was provided of field trips to companies or engineering management organisations. This was confirmed through interviewing current students, a number of whom highlighted the value of such experiences, mainly by acknowledging the current learning environment but at the same time encouraging the College to extend its collaboration to other professional organizations in the Kingdom of Bahrain, to help provide them with more practical experiences and extra-curricular activities. Consequently, the Panel encourages the programme team to consider inclusion of local or regional field trips as well as collaboration with professional organizations to complement existing extra and co-curricular provision.
- 2.14 In coming to its conclusion regarding the Efficiency of the Programme, the Panel notes, *with appreciation*, the following:
- There is active engagement of the academic staff within the programme management.
 - The recruitment process is transparent with a fair policy on recruiting applicants.

- There are arrangements in place to induct and prepare newly recruited staff for assuming their responsibilities within the Master of Science in Engineering Management programme.
- The available management information systems and the Information and Communication Technology Centre are efficient in supporting teaching and learning and aiding decision-making on the programme.
- There are policies and procedures that are consistently implemented to protect students' records.
- There is a wide range of academic and non-academic support provided to students of the Master of Science in Engineering Management programme.
- There are induction arrangements in place which overall students are satisfied with.
- Policies and procedures are in place to identify at-risk students and to provide timely interventions for them.

2.15 In terms of improvement, the Panel **recommends** that the programme team should:

- review the English proficiency requirements, to ensure that these are clearly stated and are suitable for the needs of the MSEM programme and provide a remedial programme to bring the students' English language skills to an appropriate level, where needed
- revise the admission criteria, to ensure that admitted students, in particular those with arts, commercial and vocational backgrounds have the mathematical and scientific skills needed for the programme
- expedite the faculty recruitment plan to ensure that the programme is adequately staffed, as per the teaching staff qualification criteria
- conduct a study to assess the reasons behind the low promotion numbers of faculty and develop and implement a related mitigation plan
- develop and implement more stringent procedures for ensuring the security of assessment tools and learners' assessed work at Ahlia University.

2.16 **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 According to the SER, the MSEM programme does not have explicitly stated graduate attributes; however, they are embedded within the aims and intended learning outcomes (ILOs) at programme and course level. The aims of the programme are five in total and focus on students' attainment of professional knowledge and skills related to engineering management; higher-order thinking skills in relation to finding creative solutions that would help with decision-making within engineering, technical, and scientific organizations; leadership skills; innovative research aptitude; and ethical and professional dispositions. These aims are reflected in the PILOs (A-D), to which the programme's courses are clearly mapped in a detailed matrix. This explicit mapping shows how, for example, PILO C3 'Creativity' under the category 'Critical Thinking Skills' or PILO D4 'Ethical and Social Responsibility' under the category 'Generic and Transferable Skills', are reflected in reliable course assessments. The Panel therefore studied course assessments provided in submitted course files and the available sample of students' theses and confirmed the validity of assessments in meeting the CILOs and hence the PILOs. In addition, the Panel acknowledges that internal verification of courses before the beginning of their delivery provides a check on the validity of assessment instruments and their relationship to CILOs (see paragraph 3.4), which facilitates the attainment of the graduate attributes that are implicitly stated in the programme's aims and ILOs. Moreover, the Panel notes that the research courses 'Research' (EMSE 6995) and 'Special Topics: Research Methods for the EM' (EMSE 6992) and their treatment of research ethics provide an important means for the achievement of graduate attributes, and especially in the opportunity they provide students with to apply theories from the programme and develop their knowledge in practice, as evidenced through the thesis and its defence. The Panel appreciates that graduate attributes are stated in terms of programme aims and ILOs and that there is a system of reliable assessment, that is subject to continuous evaluation and review, utilized to ensure their attainment. However, the Panel advises that the programme team develop an explicit statement of graduate attributes to benefit the delivery and the wider promotion of the programme.
- 3.2 The SER indicates that the EMSE Programme Committee manages the benchmarking process and that the results of this process have to be communicated to the EMSE-OOCP Office at GWU for consideration. According to the SER (p.57) and as confirmed during interviews, the MSEM programme has been recently benchmarked against equivalent programmes in the USA, Australia, UAE and Bahrain. Benchmarking included comparison of the programme aims, the number of credits, and course

content. Given that the benchmarking has only recently occurred, there have been no substantial programme changes implemented as a consequence. The programme has been additionally compared with the 'Master's Programme Certification in Engineering Management' and the 'Master's Programme Certification in Engineering Management with a focus on the Management of Technology' as specified by the American Society for Engineering Management (ASEM), as two useful external reference points. Considering that the programme is designed by GWU and that formal recommendations from a benchmarking exercise conducted by AU require to be channelled through the EMSE Programme Committee to the EMSE-OCP Board, the Panel recognizes the collaborative effort required to implement conclusions from benchmarking. However, apart from what was mentioned in the SER and in interviews with academic faculty and management, no evidence of any formal benchmarking was presented to the Panel. Furthermore, interviewed faculty and management confirmed that the benchmarking undertaken is only of the informal desk-based type. In addition, when the faculty were probed on their view of the benefits of a more formal benchmarking process being conducted to facilitate deep learning and rich data on the context of the benchmarked programmes and their reasons for success in terms of resource allocation, research support and other similar issues; they reported that this was impractical and resource intensive. The Panel therefore recommends that the programme team should conduct a formal benchmarking process that includes all programme-related elements, such as admission requirements, teaching, learning and assessment strategy, and resources while raising awareness within the programme about the benefits of formal benchmarking that goes beyond programme curriculum and course titles.

- 3.3 As was mentioned in paragraph 1.7, assessment policies and procedures for the MSEM programme are available to staff, students and other stakeholders. These policies stipulate moderation of assessment as well as the use of external examiners to ensure appropriateness of assessment methods and tools and fairness of grades (see paragraphs 3.5 and 3.6). Students are made aware of these policies upon enrolment in the programme through the induction sessions and through the Student Guidebook. According to faculty interviews, these policies and procedures have been revised twice so far by GWU based on students' and faculty feedback and the current existing Assessment Manual is new (dated 2016-2017). The monitoring of these policies and procedures, however, has been, since the beginning of the academic year 2016-2017, the responsibility of AU's Centre for Accreditation and Quality Assurance (CAQA), in coordination with the EMSE Programme Committee and TLAC, which are also responsible for ensuring these policies' implementation. Given that the involvement of the CAQA is recent, there was no evidence provided to the Panel of substantive changes made as a consequence of this centre's involvement. Nevertheless, the efforts of the CAQA and the EMSE Programme Committee are supported by the TLAC, which provides feedback as needed, based on a review and evaluation of assessment-

related processes. During site visit interviews, the Panel was informed that the Chair of the EMSE Programme Committee assumes the responsibility of monitoring the consistency with which assessment policies and procedures are applied and that measures such as new staff induction and proactive behaviour of academic staff are resulting in consistent application of policies and procedures. In addition, interviews with staff and students confirmed that the various documents providing guidance on assessment complement each other and that all programme teaching staff are aware of the policies and procedures and apply them consistently in their courses. This was further confirmed upon the panel's scrutiny of assessment tasks and samples of students' assessed work included in course files submitted as site evidence. Nevertheless, as will be detailed in paragraph 3.7, there remain to be a few important issues to be addressed in relation to the design of some assessment instruments and their individual components. As for the grade distributions, the Panel was informed during interviews with faculty and registration staff members that these are reviewed by the external examiners before being approved by the EMSE Committee Chair and then forwarded by him to GWU for final validation. No evidence, however, was provided to the Panel to confirm this form of external verification. Once GWU receives the grades, it validates them and then they are published on the GWU system for students to access. Concurrently, the course instructors at AU get informed that the grades have been approved by GWU and thus enter them in the ADREG system to keep within AU's records. In case of any changes to grades, these cannot be published before approval by the EMSE-OCP Board at GWU, and all formal students' transcripts are issued by GWU. In light of the above, the Panel appreciates that, overall, policies and procedures relevant to assessment and grading are made available to students and are consistently implemented.

- 3.4 The SER indicates a range of mechanisms and a 3-stage process utilized to ensure the alignment of assessment with learning outcomes and thus assure the academic standards of the graduates. Firstly, in Stage 1, the Chair of the EMSE Programme Committee assigns before the start of each semester session an appropriately qualified internal verifier for each course. It is then the role of the internal verifier to confirm, before course delivery, that the course specifications and their related components including assessments are aligned with the CILOs and this process involves the recording of feedback in corresponding templates. Then, in Stage 2, the internal verifier reviews also individual questions within major assessments (final examinations or major pieces of coursework), to ensure that they are cross-referenced to and aligned with the CILOs, while simultaneously verifying that each question covers at least one ILO, so as to maintain a balance in the assessment of CILOs. In the case of any changes required, the course instructors immediately implement them as needed, based on the verifier's recommendations and before the assessments are audited by the Chair of the EMSE Programme Committee and then conducted. When the Chair himself however is the course instructor, a second verifier is called in to do

the auditing of the assessments. In Stage 3 course syllabi/specifications, internally verified/moderated assessments as well as course grade distributions are verified and moderated again by an assessor/examiner from GWU who comments amongst other things on the appropriateness of the assessment alignment with the CILOs. These mechanisms and 3-stage process for the alignment of assessments with learning outcomes were well-known to, and confirmed by, the teaching faculty and senior management during site visit interviews. Therefore, the Panel acknowledges that there are thorough mechanisms implemented consistently to ensure the alignment of assessments with learning outcomes and thus assure the academic standards of the graduates.

- 3.5 As stated in paragraph 1.10, AU relies on the GWU Assessment Manual, which includes among other things the regulations and procedures for assessments' moderation and verification. As for internal verification, it involves pre-assessment, as explained above in paragraph 3.4, where a single verifier designated by the EMSE Programme Committee Chair reviews each question on a major assignment in relation to the specified CILOs, with feedback being recorded on templates to confirm this activity. Internal post-assessment moderation, on the other hand, is conducted for all courses and their components by an internal moderation committee of three members: the course instructor, the Chair of the EMSE Programme Committee, and a course verifier familiar with the subject. A part of the Committee's responsibility is to select a random sample of high, medium and low score scripts from the final examination and/or the major piece of coursework, for review against the marking criteria and model answers or rubric. The Committee then documents all its findings in summary reports that are presented to the programme's management for review and evaluation by the EMSE-OCP Board. The effectiveness of this pre-and-post internal moderation system has been measured since the first semester of the 2016-2017 academic year through a mechanism involving CAQA, which monitors the internal moderation process and outcomes and generates a report to the TLAC for further evaluation of the effectiveness of the moderation system. Changes that are recommended to assessment instruments or assessment grades are discussed first at the local level and then discussed with the Chair of the EMSE Programme Committee and, if appropriate, sent to the EMSE-OCP Programme Board for approval. The Panel was provided with a number of samples of internal pre- and post-moderation reports/filled templates from the academic years 2015-2016 and 2016-2017 as evidence of the implementation of the internal moderation system in place and of modifications to assessments suggested. Additionally, as stated in the SER, the outcomes of internal moderation at AU are eventually verified and evaluated through a GWU moderation process explained in paragraph 3.6 of this Report. On this basis, the Panel appreciates that there are mechanisms in place to ensure the effectiveness of the programme's internal moderation system for setting assessment instruments and for grading students' achievements. Despite this, the Panel finds that the design of some assessment tools is

in need of further enhancement, as was mentioned earlier (paragraph 3.3) and as will be detailed in paragraph 3.7.

- 3.6 The 'Guidelines and Procedures for Ensuring Consistency and Quality of Delivery of GWU MS Programme in EM' document comprises formal procedures for the external moderation of assessments in every session. These procedures explain that the management of the EMSE-OCP Office appoints a GWU faculty to be the 'external' assessor/examiner for the programme during the academic year and the remit of this role is specified in the GWU Assessment Manual. Although, the 'Guidelines' document and the Assessment Manual label this form of moderation as 'external', the Panel is of the view that it is a second level of internal moderation, since a GWU faculty member is not really 'external' to the programme. This moderation process entails that by the end of each session, the EMSE Programme Committee chooses at least one EMSE course out of the offered courses (i.e., at least four different courses in the academic year) to be verified and moderated by the appointed GWU faculty member. The process involves the Chair of the EMSE Programme Committee ensuring that all material of the internal verification and moderation process for the chosen course are submitted to the management of the EMSE-OCP Office to be assessed/examined using specific Verification and Moderation Forms. The GWU assessor reviews and verifies (i) programme and course specifications, (ii) final examinations, major pieces of course work and the related marking criteria, solutions, model answers or rubrics, (iii) samples of students' scripts, and (iv) course grade distributions. The assessor verifies and evaluates the linkage between courses and programme aims and ILOs, alignment between assessments and CILOs as well as fairness, validity, difficulty and reliability of questions with each assessment. The assessor is also charged with filling out what are called 'External Assessor/Examiner's Forms 1 and 2' for each course examined. The EMSE Programme Committee discusses all recommendations of the GWU assessor. This must be completed before the release of the final grades to students, so any recommended grade changes by the assessor can be applied if deemed appropriate and necessary. The Panel was provided with a number of samples of what are considered by AU as external moderation reports/templates from the academic years 2015-2016 and 2016-2017 as evidence of the implementation of external moderation and feedback provided. The Panel acknowledges that these procedures are consistently implemented and have led to improvements in the assessment of the MSEM programme; however, the Panel finds it difficult to reconcile that external examiners are also staff of the awarding institution and are directly involved in all aspects of the programme. The Panel recommends therefore that the Programme team should appoint external examiners for the moderation of assessment who are from outside both the hosting and the award-granting institutions.
- 3.7 During the site visit, a number of course files were made available and these were scrutinised by the Panel. From the sample of taught course files, it was apparent that

the nature of students' assessed work differs as a consequence of the course remit, some exhibiting more practical applied work [e.g. 'Survey of Finance and Engineering Economics'(EMSE6410)] while some focusing more on theoretical perspectives ['Marketing of Technology' (EMSE 6035)]. It was also apparent to the Panel that a wide range of assessment tools is being utilized and these vary between multiple choice and short-answer questions to essay and case study questions to problem-solving, sometimes through the use of laboratory-based software. The Panel is of the view that the use of assessment methods such as quizzes, short-answer questions and multiple-choice instruments, although appropriate when spread along a study session [as in 'Survey of Finance and Engineering Economics' (EMSE6410)], they usually require recall only, or short descriptive answers rather than application or research and analysis; they therefore are not suitable as tests of the knowledge and skills that should be displayed in an academic programme at a graduate level. More importantly, neither do they encourage and require students to develop and display higher-order thinking and other advanced skills, as part of their academic and professional development. Hence, the Panel finds that the utilization of such types of questions and assessment instruments makes it quite challenging to determine whether the extent of students' achievement is appropriate for the level and type of the programme in Bahrain, regionally, and internationally. Nevertheless, the Panel acknowledges that there were some exceptions, where more elaborate assessment tools and requirements were evident, such as for example 'Organizational Behaviour for the Engineering Manager' (EMSE 6005), in which students were asked to identify an incident that occurred in technical organizations related to organizational behaviour and write a short paper where they use evidence to persuade managers to take particular actions. Whereas the Panel agrees that, overall, the sample of students' assessed work, including research courses, indicates a level of students' achievement generally on a par with similar programmes locally and regionally, the Panel recommends that the programme team should closely monitor the design and development of all assessment tools and their individual components, to ensure implementation of quality assessments appropriate to the level and type of the programme.

- 3.8 According to the SER, the achievement of CILOs that are clearly documented in the course specifications, collectively support the achievement of the programme aims and ILOs. This is in addition to the multi-levelled moderation processes that help ensure that graduates meet the PILOs and aims. The Panel investigated the level of achievement of graduates in meeting programme aims and PILOs based on their final results and grade distribution as confirmed by internal and external scrutiny and on an analysis of student, alumni and employer views. The Panel notes, as a result of this investigation, that the programme sets a 3.0 CGPA or a 'B' grade as a target for achieving the PILOs and that the final grade distribution sheets, included in the course files submitted as site visit evidence, indicate distributions more or less aligned with what is expected internationally in such courses. Nonetheless, the distribution in a few

courses did skew more toward higher grades, primarily due to assessment tools being basic and relying mainly on the recall of information, as was mentioned earlier in paragraph 3.7. The Panel also studied the graduation grades for the student batches for the years 2013-2016 provided in Table 5.1.3, which indicate that 56% of graduates achieved a CGPA of at least 3.5, with a smaller subset graduating with Distinction with Second or First Class Honours, with the latter achieving a CGPA of at least 3.9. The Panel finds these graduation grades to be a reasonable reflection of PILOs' achievement and this was further confirmed by the Panel's scrutiny of a sample of students' theses provided during the site visit, which demonstrated that the research courses at AU [i.e. 'Special Topics: Research Methods for the EM' (EMSE 6992) and 'Research' (EMSE 6995)] contribute substantively and substantially to student success. Interviewed alumni also verified the value of these courses by explaining to the Panel that both the research methods course and the thesis facilitated achievement of what they considered as major graduate attributes, basically their development as thinking performers and their increased confidence as knowledgeable practitioners. This evidence from alumni is clearly supported by their average-to-high levels of satisfaction with their learning programme, as provided in the 2016-2017 summary reports and analysis of the MSEM Alumni Follow-up Survey and the Exit Survey 2015-16 for all Graduating MSEM Students. In addition, the Panel also found through a summary report and analysis of an employer survey that the employers' overall satisfaction score of MSEM graduates' performance on the job is 90.80%; whereas, the score for thinking skills and character is 94%, an outcome that is commendable. This outcome was additionally supported through the Panel's interview with a small number of employers who reported that they look forward to hiring MSEM graduates, since these graduates usually demonstrate innovation, good communication skills, and high performance. On balance, the Panel is satisfied that, overall, the level of achievement as demonstrated in final results, grade distribution, and confirmation by alumni and employers is appropriate for the programme's level and type. Hence, the Panel appreciates that the levels of achievement of MSEM graduates meet programme aims and ILOs.

- 3.9 The 'Statistical Information' section of the SER as well as the detailed cohort analysis presented as extra evidence, provide a range of statistics including raw data on the number of admitted students, their nationality and gender, length of study, number of student completions, grade category and first destinations. This statistical information indicates that of 108 students admitted since the start of the programme, 79 have graduated and that 86.1% of these graduates completed the programme in one-and-a-half years, which is a commendable completion rate in that timescale. Out of the 108 admitted students, only five discontinued their studies, which is a reasonably acceptable number. However, no clear information is provided about the reasons for their withdrawal. Destination data shows that the majority of graduates (82.2%) are in appropriate employment, some have obtained professional certificates

and some published research or continued on to PhD study. Based on the SER and on interviews with faculty, members of the programme team, members of the CEAB, and alumni, the Panel appreciates that these student outcomes in terms of ratios and rates represent a comparatively good performance for the programme and are consonant with those achieved on equivalent programmes in Bahrain, regionally and internationally.

- 3.10 The MSEM programme includes a thesis requirement [‘Research’ (EMSE6995)] that is assigned six credits. This requirement was originally mandated by the HEC and has as a prerequisite ‘Special Topics: Research Methods for the EM’ (EMSE6992). The Panel acknowledges that there are policies and procedures relating to the thesis and its supervision, which are included in the ‘Guidelines and Procedures for Supervising and Examining MSEM Students Research’ document. These guidelines and procedures have been customized for the MSEM programme and produced by the joint effort of AU and GWU. They explain the process of supervision and outline the roles and responsibilities of students, supervisors, the two internal examiners (one from AU and one from GWU), and an external examiner from a different institution who is a subject matter expert. They also describe the selection criteria for supervisors and examiners. The role of the supervisor is to monitor student progress through regular meetings that are recorded on ADREG; these meeting records are thus available for the programme management to ensure that both students and supervisors are meeting their obligations. The role of the examiners, however, is to provide objective, independent scrutiny and comparative evaluation of the thesis and the performance of the student. Both supervisors and examiners comprise together the examination committees during students’ oral defence sessions of their theses, such that every committee includes four members: the supervisor, the two internal examiners, and the external examiner. The Panel verified, through interviews with faculty, students, and examiners as well as through provided evidence, that these guidelines and procedures are appropriately and consistently implemented, as expected for the research supervision of graduate students. The Panel also confirmed, on the basis of review reports, that this implementation of guidelines has been closely monitored by the CAQA since the first semester of the academic year 2016-2017. In addition, interviews with teaching faculty, current students, and alumni indicated that the roles, responsibilities, and guidelines related to the research courses are clearly explained to students from the beginning of each course. These include the requirement of students submitting all thesis-related works through the plagiarism-detection software ‘Turnitin’. The Panel also confirmed from the available sample of students’ theses, as was explained earlier in paragraph 3.1, the validity of these theses in terms of ensuring that students are meeting the targeted CILOs and PILOs. Moreover, the thesis topics selected enable students to research areas of interest, enhance their practical skills, and support their employability. Accordingly, the Panel

appreciates that the research courses including the thesis are delivered according to guidelines produced by both partners and that thesis topics are up to standard.

- 3.11 The SER indicates that there is currently no dedicated Programme Advisory Board for the MSEM within AU and that the CEAB is taking on this role in the meantime. The CEAB was established in 2013 and consists of leaders from the public and private sectors in Bahrain, heads of professional organizations, alumni and graduate employers. The Panel also notes from the SER that there is a National Advisory Council of the School of Engineering and Applied Sciences (SEAS) at GWU that meets regularly with the Dean of SEAS to provide advice and resources for programmes including the on-campus MSEM and its off-campus deliveries. The CEAB has specified roles and responsibilities related to the portfolio of work of the College and has, since the first semester of 2016-2017, included the MSEM programme within its jurisdiction. Given the recent inclusion of the MSEM programme into the responsibilities of the CEAB, the SER indicates that no substantive evidence exists as to how the recommendations of the Board have been used in programme enhancement. However, an interview session with members of the CEAB indicated to the Panel that they had indeed discussed the MSEM programme and that they appreciate its role in developing leaders and managers in the engineering field. They also recognize the value- to both industry and employers- of delivering an international curriculum locally. Furthermore, even at this early stage, the CEAB members explained that they had made preliminary recommendations relating to the programme on issues including admissions. Additionally, the Panel was informed by senior management during interview sessions that there is a plan to establish an advisory board specifically for the MSEM programme and that this is actually identified as an area of improvement in the SER; for now, however, the CEAB serves the programme well because it has people with varied areas of expertise in it. Despite this, the Panel advises the programme team to expedite the establishment of a programme-specific industrial advisory board that would focus on and more effectively cater to the unique needs of the programme.
- 3.12 AU measures employers and alumni satisfaction through a number of surveys, which the Panel had a chance to review summary reports of. As was mentioned in paragraph 3.8, the summary reports and analyses of employer surveys indicated high satisfaction with graduates' performance, thinking, and character; whereas, reports and analyses of alumni surveys indicated average-to-high levels of satisfaction with their learning programme. An interview with a small number of employers confirmed to the Panel the employers' high satisfaction with the graduates' profile; since, the interview elicited that while employers hire master's graduates, most are usually MBA rather than MSEM graduates, although they would be unreservedly willing to consider MSEM students over MBA ones for any future vacancy. This is in spite of the fact that some employers still have limited familiarity with the MSEM programme and its value

to the industry. Similarly, interviewed alumni confirmed to the Panel their satisfaction level by explaining that while enrolled as students, the programme and its delivery encouraged them to think differently and more holistically; the programme team listened and responded to their feedback; and the research courses and research methods prepared them well for the workplace. They also expressed to the Panel how greatly they valued a programme that allows them to achieve an international award while studying in Bahrain. Nonetheless, despite these commendable survey and interview outcomes, the summary report and analysis of the '3-in-1 Satisfaction Survey' of students conducted by the Centre for Measurement and Evaluation (CME) in February 2017 indicates a lower satisfaction level with programme delivery and its contribution to student success. It also identifies some areas of improvement, such as quality of teaching and quality of faculty, which the Panel advises the programme team to look into and address. Similarly, the Panel advises that closer links should be forged between the university and employers in the engineering field, to promote the value of the MSEM programme to the industry. Notwithstanding the above, the Panel acknowledges that alumni and employers are in general satisfied with the programme and its outcomes.

3.13 In coming to its conclusion regarding the Academic Standards of the Graduates, the Panel notes, *with appreciation*, the following:

- Graduate attributes are stated in terms of programme aims and intended learning outcomes and there is a system of reliable assessment, which is subject to continuous evaluation and review, utilized to ensure their attainment.
- Overall, policies and procedures relevant to assessment and grading are made available to students and are consistently implemented.
- There are mechanisms in place to ensure the effectiveness of the programme's internal moderation system for setting assessment instruments and for grading students' achievement.
- The levels of achievement of graduates meet programme aims and Intended Learning Outcomes.
- Student outcomes in terms of ratios and rates represent a comparatively good performance for the programme and are consonant with those achieved in equivalent programmes in Bahrain, regionally and internationally.
- The research courses including the thesis are delivered according to guidelines produced by both Ahlia University and George Washington University and the thesis topics are up to standard.

3.14 In terms of improvement, the Panel **recommends** that the programme team should:

- conduct a formal benchmarking process that includes all programme-related elements such as admission requirements, teaching, learning and assessment strategy, resources, and research while raising awareness within the programme

about the benefits of formal benchmarking that goes beyond programme curriculum and course titles

- appoint external examiners for the moderation of assessment who are from outside both the hosting and the award-granting institutions
- closely monitor the quality and level of all assessment tools and their individual components, to further ensure design and implementation of assessments appropriate to the level and type of the programme.

3.15 **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 The Ahlia University Quality Management System (AUQMS), which is documented in the AU Quality Manual, comprises a range of policies and procedures and provides a holistic source for MSEM policies. Examples of existing policies and procedures include the Teaching and Learning and Assessment Strategy, Assessment and Feedback Policy, Staff Development Policy, Academic Staff Promotion Policy, Students “At Risk” Policy, and Programme Review Policy. These and other policies pertaining to HR and finance are centrally stored in the Ahlia Centre for Information and Documentation (ACID) and are disseminated to stakeholders through electronic and non-electronic means such as the Faculty Handbook, University By-Laws, and the AU website. In general, AU and GWU policies and procedures complement each other to support the delivery of the programme. The GWU EMSE-OCP Board serves as the key player in harmonizing policies, procedures, and regulations between AU and GWU; while, the EMSE-OCP Office, in collaboration with AU, is responsible for governing the quality of programme provision at AU and for maintaining the academic standards of the degree. As for monitoring the implementation of policies and procedures, this is done by the EMSE Programme Committee Chair and in coordination with CAQA since the first semester of 2016-2017. The Panel met with some academic and administrative staff, including representatives from CAQA, who confirmed that these policies and procedures are periodically reviewed, effectively applied, and well-communicated to both staff and students. Staff interviewed were well-aware of these policies and were able to demonstrate many ways in which the policies and procedures have been applied to enhance the quality of delivering the MSEM programme and how they are involved in revising and developing policies that are relevant to their work. In light of this, the Panel appreciates that staff members are familiar with institutional policies, apply them consistently and are involved in the development of those that are relevant to their duties.
- 4.2 As was mentioned in paragraph 2.3, the MSEM programme is managed by the Programme Coordinator (POC), who is also the chair of the EMSE Programme Committee at AU and who answers to the EMSE-OCP Board. While this Board represents the leadership of the programme in terms of issues of high management in relation to policy-proposing and supervision of decisions made by the EMSE Programme Committee, the Programme Coordinator is responsible for the day-to-day management of the programme. He is supported by a management structure consisting of the EMSE Programme Committee in Bahrain in coordination with a number of other committees; the GWU EMSE Department in Washington; and senior

management representation at all programme meetings. Various fora such as university, college and programme committee meetings are utilized to ensure that the responsibilities of all members involved in the delivery of the programme are executed in an effective manner and they provide the Programme Coordinator with the input needed for effective decision-making. The Panel appreciates that the MSEM programme is managed in a manner that demonstrates effective and responsible leadership. Nevertheless, the Panel suggests the inclusion of formal representation of the CBF in the programme's leadership arrangements, especially since CBF hosts the MSEM programme and currently there is no AU quality assurance representation within the EMSE Programme Committee nor in the EMSE-OCP Board, as was explained to the Panel during interviews with quality assurance and senior management staff.

- 4.3 The AUQMS is applied within the MSEM programme with the purpose of ensuring that the programme adheres to the requirements of both AU's quality assurance requirements and GWU's guidelines and procedures for ensuring consistency and quality of delivery of the MSEM programme off-campus. The AUQMS is operationalized at AU and at programme level *via* AU's CAQA, which possesses an overarching responsibility to ensure effective and consistent implementation of programmes, through the utilization of input from a number of committees and units within the University. The CAQA and AUQMS are overseen by a university-wide Institutional Accreditation and Quality Assurance Committee (IAQAC), which reports to the University Council on all quality assurance related issues. The implementation of the AUQMS is supported through the consistent implementation of assessment policies, which are monitored and safeguarded by the EMSE Programme Committee and the TLAC through adherence to the GWU Assessment Manual and the guidelines for supervising and examining students' research, as was explained in paragraph 3.3. This is in addition to the verification and moderation processes at different levels led by the EMSE Programme Committee, through which course specifications and syllabi with course aims, ILOs, teaching and learning methods, assessments and other course-related elements are evaluated and rectified, if necessary, in order to ensure quality delivery of programmes. The Panel was provided with sufficient evidence of meetings of various committees and units involved in quality assurance at AU as proof of their regular involvement in the monitoring and evaluation of the quality of delivery of the programme. Accordingly, the Panel appreciates that the quality assurance management system is clearly specified, implemented, monitored, and evaluated across the college, and faculty members are well informed about their roles and responsibilities in this regard.
- 4.4 One of the primary objectives of the AUQMS is to inculcate a quality culture among both academic and administrative staff. The Panel was provided with evidence on the ASDC and CAQA conducting regular events and workshops to acquaint staff with

best practice approaches in teaching and learning and inviting facilitators from other higher education institutions in Bahrain to exchange good practices. The workshops include quality assurance related professional development activities.. In addition, policies and procedures relating to quality assurance, like other policies at AU, are made available to all academic staff (see paragraph 4.1) and thus reinforce the staff's role in ensuring effectiveness of provision. Staff members also serve on a number of committees that assist in ensuring quality delivery of the programme, such as the EMSE Programme Committee, the TLAC, and the Curriculum Committee. Both academic and support staff interviewed showed a clear understanding of the quality management arrangements and their role in ensuring the quality of provision. They also confirmed that faculty members are involved in quality assurance processes through the input they provide CAQA with, since they are the ones who take part in revising courses, assessments, teaching and learning methods. The Panel appreciates the commitment of the faculty to the quality assurance of the programme alongside their varied teaching and administrative load.

- 4.5 The SER states that AU has a well-articulated policy and procedure for the development of new programmes; this includes a set of specific criteria for evaluation and approval of new programmes, such as recent changes in employment trends, labour market needs, and local and international quality assurance and accreditation requirements. In terms of the procedure, proposals for introducing new programmes in collaboration with GWU, are considered in the first instance by the Programme and Curriculum Review Committee at GWU, after which these have to go through the EMSE Programme Committee and university approval processes, and thereafter are submitted to be licensed by the HEC. The Panel notices that this is the only programme that AU offers in collaboration with GWU and that it was not developed specifically for AU; however, the existing programme is subject to continuous evaluation and improvement. The Panel is satisfied that the procedures AU has put in place for the development and approval of new programmes are adequate.
- 4.6 The SER demonstrates several ways in which the MSEM programme is reviewed and evaluated. With respect to reviews done during the academic year, these include mainly an internal evaluation conducted in the beginning of each semester session through which course syllabi with all course-related components (CILOs, teaching and learning methods, assessment, textbooks, and references) are verified by the EMSE Programme Committee with collaboration from CAQA. The criteria used in this evaluation are clearly specified in the 'Internal Verification of the Course Syllabus/Specification' form, which is used to record verifiers' feedback and comments. This feedback is sent back by the EMSE Programme Committee to the course instructors to enhance their courses accordingly. In addition, a follow-up review on quality aspects related to the programme is carried out by CAQA every year. In this review, CAQA relies on the collective input from the different committees

serving the programme. This input gets stored in the Programme Review Documentation (PRD) file, which contains and reflects all the quality improvements done over an extensive period of time, and which CAQA evaluates through the use of a template. The results of this follow-up review are sent to GWU's EMSE-OCP Board for consideration and approval, in order to effectuate the enhancement of the programme. This review of the PRD also utilizes feedback from a number of sources, such as students' course evaluations at the end of each session; students' 3-in-1 survey, which focuses mainly on the learning experience of the students and their learning environment; verifiers' and instructors' course evaluation reports; assessment moderation reports; CEAB feedback; and alumni and employers' feedback. The Panel met with students and alumni who confirmed that their feedback is used to influence the future quality of provision. Academic staff also provided evidence where the process of student evaluation has led to improvements in the teaching of specific courses and they explained the mechanism they themselves use to revise courses and the cycle for approving changes in them. However, the Panel finds that the programme could benefit from a more structured follow-up mechanism for documenting and ensuring that recommended enhancements are fully debated and implemented. The Panel therefore encourages the programme team to address this issue.

- 4.7 The SER states that AU mandates that periodic reviews of the programmes on offer be conducted once every three years, to ensure the programmes' compliance with quality standards at the university, national, and international level and their relevancy with respect to labour market needs, discipline trends, and current research. However, the GWU requirement is that a periodic review be completed in a five-year-cycle, to which the MSEM programme is bound. Despite this, the arrangements for the periodic review of the MSEM programme include the adherence to AU's 'Processes for Developing, Reviewing, and Closing Academic Programmes' document, which stipulates that the review should rely on gathered feedback from committees, teaching staff, students and other stakeholders such as employers, alumni, internal and external moderators and examiners, and CEAB to ascertain quality delivery of the programme, its relevance and currency. This is in addition to considering feedback from external reference points, national and international quality assurance and accreditation agencies, professional associations, and market research studies. As was explained during interview sessions with quality assurance staff and senior management, all this feedback and data are collected by the EMSE-OCP Board and submitted to GWU to be used in the preparation of an institutional review report for GWU's regional accrediting agency, the Middle States Commission on Higher Education. The Panel finds these arrangements for the periodic review of the MSEM programme, therefore, to have a twofold aim in that they both ensure the enhancement and quality delivery of the programme on the one hand and fulfil a part of the requirements for GWU's institutional accreditation on the other. The Panel appreciates that there are AU and GWU synchronized and systematic arrangements for the periodic review of the MSEM

programme, which incorporate both internal and external feedback from different stakeholders.

- 4.8 The CME at AU periodically conducts a series of surveys to measure stakeholders' satisfaction and gather information about the quality of the programmes offered at the University. These surveys involve a number of stakeholders, primarily students, alumni, employers of graduates, faculty, and CEAB members. In addition, with respect to students in particular, they have as per AU by-laws, representatives on the university and college councils, who serve as the students' voice in expressing and discussing issues of concern. At the time of the site visit, there was no MSEM student representative on any committee or council to provide direct feedback to the programme management and carry back information to students matriculated in the programme. The Panel therefore advises the programme team to address this issue in order to facilitate and intensify the collection of feedback from students. Notwithstanding the above, the Panel was provided with sufficient evidence of surveys conducted recently on students and on a number of other stakeholders, mainly alumni and employers and, as a result, the Panel notes that because of the small number of alumni and employers, the collected responses were limited. Nevertheless, some of the notable findings from recent surveys have been employers' perceptions that AU graduates generally possess good writing skills, exhibit satisfactory problem-solving skills, and show a high propensity to learn on the job. The Panel was informed that actions have been taken in terms of curriculum and course reviews to address such feedback in ways that would further improve students' problem-solving competencies and written communication skills; however, the Panel did not see evidence of a formal systematic process to collect and act upon stakeholders' feedback such as this. The Panel therefore recommends that the programme team should adopt more robust mechanisms to collect, analyse and respond to stakeholders' survey results, and to disseminate timely feedback to the stakeholders on actions taken to address identified issues.
- 4.9 AU has an Academic Staff Development Committee (ASDC), which oversees the operations of professional development (PD) of all the staff and is responsible for assessing their training needs and evaluating the effectiveness of PD activities designed and implemented in response to those needs. ASDC operates under the Ahlia Training and Development Centre (ATDC), which is mainly responsible for strategic PD planning. In addition, AU has an Academic Staff Development Policy within its Annual Professional Development Plan, which stipulates the basis for academic staff development and specifies some development initiatives and activities that are supported by the University. During the site visit, the Panel learned that PD for faculty members is in place and that the ATDC keeps electronic records for every faculty member who attended PD activities and trainings. Furthermore, a number of interviewed academic staff confirmed to the Panel that they have benefited from the

staff development programme available and that they are pleased with the workshops that are provided by GWU for the AU staff teaching on the MSEM programme. The Panel acknowledges the arrangements in place to provide professional development in collaboration with GWU and encourages the EMSE Programme Committee Chair to translate the staff development policy and yearly plan into a plan with allocated budget for staff training and development. In addition, although the Panel acknowledges that the appraisal system used includes a section on staff training needs, the Panel did not see evidence of a formal process to link the identified PD needs of academic staff to the actual training activities conducted. In light of this, the Panel recommends that the programme team should develop and implement a formal mechanism to link the annual performance appraisal to the professional development activities attended by individual staff members.

- 4.10 The MSEM programme in general relies on internal and external stakeholders to scope local labour market needs, and specifically on the personal experience of its senior management members and the members of the CEAB, many of whom have several years of experience in the local labour market. The market needs' assessment conducted for the programme was based mainly on data culled from the 2009 'Allen Group Sectoral & Skills Gap Analysis'. Other sources that have been relied upon to scope the labour market include scanning job announcements for engineering managers, direct contact with experts in industries, and alumni and employers' surveys. The Panel, however, did not find any systematic approach that is used to target and collect data from specific segments of the labour market that are directly related to the programme. The Panel recommends that the programme team should routinely and systematically scope labour market needs by targeting and collecting market intelligence from appropriate segments, to ensure the relevancy and currency of the programme.
- 4.11 In coming to indicator 4 conclusions regarding the Effectiveness of Quality Management and Assurance, the Panel notes, *with appreciation*, the following:
- Staff members are familiar with institutional policies, apply them consistently, and are involved in the development of those that are relevant to their duties.
 - The Master of Science in Engineering Management programme is managed in a manner that demonstrates effective and responsible leadership.
 - The quality assurance management system is clearly specified, implemented, monitored, and evaluated across the College, and faculty members are well-informed about their roles and responsibilities in this regard.
 - Members of faculty are committed to the quality assurance of the programme alongside their varied teaching and administrative load.
 - Ahlia University and George Washington University have synchronized and systematic arrangements for the periodic review of the programme, which incorporate both internal and external feedback from different stakeholders.

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

- adopt more robust mechanisms to collect, analyse and respond to stakeholders' survey results, and to disseminate timely feedback to stakeholders on actions taken to address identified issues
- develop and implement a formal mechanism to link the annual performance appraisal to the professional development activities attended by individual staff members
- routinely and systematically scope labour market needs by targeting and collecting market intelligence from appropriate segments, to ensure the relevancy and currency of the programme.

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 Master of Science in Engineering Management (MSEM) programme offered by the College of Business and Finance of Ahlia University.