



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

Directorate of Higher Education Reviews Programme Review Report

**Ahlia University
College of Business and Finance
Master of Science Degree in Engineering
Management
Kingdom of Bahrain**

Site Visit Date: 27 February - 1 March 2023

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Acronyms

ADREG	Admission and Registration Information System
APR	Academic Programme Reviews
AQAC	Accreditation and Quality Assurance Committee
AU	Ahlia University
AUQMS	Ahlia University Quality Management System
BQA	Education & Training Quality Authority
CAQA	Centre for Accreditation and Quality Assurance
CBF	College of Business and Finance
CILO	Course Intended Learning Outcome
CME	Centre for Measurement and Evaluation
DHR	Directorate of Higher Education Reviews
EMSE	Engineering Management and Systems Engineering
GWU	The George Washington University
HEC	Higher Education Council
INQAAHE	International Network for Quality Assurance Agencies in Higher Education
MoA	Memorandum of Agreement
MSEM	Master of Science Degree in Engineering Management
NQF	National Qualifications Framework
OCP	Off-campus Programmes
OOCP	Online and Off-campus Programmes
PILO	Programme Intended Learning Outcome
QA	Quality Assurance
SER	Self-evaluation Report
TLEP	Teaching, Learning and Excellence Plan

I. Introduction

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

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

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

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

Standard 1: The Learning Programme

Standard 2: Efficiency of the Programme

Standard 3: Academic Standards of Students and Graduates

Standard 4: Effectiveness of Quality Management and Assurance

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

Table 1: Criteria for Judgements

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

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

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

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

II. The Programme's Profile

Institution Name*	Ahlia University
College/ Department*	College of Business and Finance
Programme/ Qualification Title*	Master of Science Degree in Engineering Management
Qualification Approval Number	Higher Education Council Letter No. (291 -2010 /ع ت م) of 2010
NQF Level	9
Validity Period on NQF	5 years from the date of re-validation
Number of Units*	11
NQF Credit	144
Programme Aims*	<ol style="list-style-type: none"> 1. Work and lead effectively in the business environment by applying engineering management principles in the overall management of organizations oriented to manufacturing, construction, engineering, technology, or production. 2. Coordinate critical organizational functions—organizational management and behavior, operations, project management, marketing, cost and quality control, finance, staff, technical requirements, engineering contract management—and supervise technical development while maintaining high performance. 3. Prepare to take the exam for certification as a Project Management Professional (PMP), offered by the Project Management Institute to further establish professional credentials. 4. To nurture an innovative and sustainable research culture that encourages learners to produce quality research outcomes in Engineering Management. 5. To equip learners with life-long learning skills and ethical behavior and to be professionally competent.
Programme Intended Learning Outcomes*	<p>A. Knowledge and Understanding</p> <p>A1: Demonstrate critical knowledge understanding of the key concepts, principles, techniques, paradigms and theories of engineering management.</p>

	<p>A2: Apply specialized research methods with technological advancements pushing the frontier of knowledge in the field of Engineering Management.</p> <p>A3: Operate professional and legal standards as an Engineering Management Practitioner.</p> <p>B. Subject-Specific Skills</p> <p>B1: Use professional level of skills to deal with complex real-life business and Engineering Management.</p> <p>B2: Design subsystems and integrate them to form and test systems and simulate designs, and to assess them for quality conformity.</p> <p>B3: Demonstrate creativity and originality in the application of Engineering Management methods and tools related to manufacturing, construction, engineering, technology, or production.</p> <p>C. Critical Thinking Skills</p> <p>C1: Critically analyze complex problems in conceptual terms related to Engineering Management.</p> <p>C2: Identify critical functions of an organization to supervise technical development and implementation processes from start to finish while maintaining high performance.</p> <p>C3: Demonstrate insight on new concepts, techniques, methods, tools, and theories in the field of Engineering Management.</p> <p>D. General and Transferable Skills</p> <p>D1: Express and communicate ideas cogently, persuasively and effectively, in written and oral form, to a diverse range of audiences and stakeholders.</p> <p>D2: Work effectively as a member/leader of a team of technical people who may plan, design, implement, manage, monitor and evaluate a programme, project, system or process.</p> <p>D3: Engage in life-long learning and continuing self-development to hone professional and organizational skills.</p> <p>D4: Operate at professional level with substantial responsibility ethical and social responsibility related to Engineering Management.</p>
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* Mandatory fields

III. Judgement Summary

The Programme's Judgement: Confidence

Standard/ Indicator	Title	Judgement
Standard 1	The Learning Programme	Satisfied
Indicator 1.1	The Academic Planning Framework	Addressed
Indicator 1.2	Graduate Attributes & Intended Learning Outcomes	Addressed
Indicator 1.3	The Curriculum Content	Addressed
Indicator 1.4	Teaching and Learning	Addressed
Indicator 1.5	Assessment Arrangements	Addressed
Standard 2	Efficiency of the Programme	Satisfied
Indicator 2.1	Admitted Students	Partially Addressed
Indicator 2.2	Academic Staff	Addressed
Indicator 2.3	Physical and Material Resources	Addressed
Indicator 2.4	Management Information Systems	Addressed
Indicator 2.5	Student Support	Partially Addressed
Standard 3	Academic Standards of Students and Graduates	Satisfied
Indicator 3.1	Efficiency of the Assessment	Addressed
Indicator 3.2	Academic Integrity	Partially Addressed
Indicator 3.3	Internal and External Moderation of Assessment	Addressed
Indicator 3.4	Work-based Learning	Not Applicable
Indicator 3.5	Capstone Project or Thesis/Dissertation Component	Partially Addressed

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

IV. Standards and Indicators

Standard 1

The Learning Programme

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

Indicator 1.1: The Academic Planning Framework

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

Judgement: Addressed

- There is a collaborative academic planning framework between Ahlia University (AU) and George Washington University (GWU), which was reapproved by AU University Council in December 2022. The framework specifies the roles and responsibilities of the awarding body (GWU) and the hosting institution (AU). It confirms that GWU is responsible for the overall management of the Master of Science Degree in Engineering Management (MSEM) programme, while some managerial functions such as minor course content updates, admission of students, and appointment of faculty teaching the programme are managed by AU and are subject to GWU's approval. The Engineering Management and Systems Engineering-Off-Campus Programmes (EMSE-OCP) Board, which has joint membership from GWU and AU and meets twice per year to monitor the quality and standards of the MSEM programme. In addition, the EMSE Programme Committee, which includes AU faculty and reports to the EMSE-OCP Board, is responsible for ensuring that the programme adheres to the AU Quality Assurance (QA) processes and complies with the Higher Education Council (HEC) and BQA requirements. During the interviews, the Panel learnt that two of the GWU faculty members make four to five visits per academic year to AU, conduct regular meetings with academic staff and students and are involved in supporting the research course with regular supervision meetings. The Panel appreciates the extent of engagement of GWU and the mutually beneficial partnership between GWU and AU that is in place.
- The EMSE-OCP Board oversees the periodic quality review processes and considers the risks identified through these processes. The submitted College of Business and Finance (CBF) Risk Register, and college council minutes of meetings show evidence of the identified and monitored risks related to the quality and delivery of the MSEM programme.

- The title of the programme is indicative of the level and content of the qualification and is accurately described in the Programme Specification document, qualification certificate and transcript, Programme Factsheet, and the AU and GWU websites. The MSEM programme has been aligned to National Qualifications Framework (NQF) Level 9 in 2018, which confirms its compliance with the NQF design requirements. Moreover, information is provided by both institutions about the MSEM programme, through their websites and the Programme Factsheet.
- The programme has clear aims that are appropriate for the level and focus of the qualification. Evidence was provided that the EMSE-OCP Board approved minor changes to the aims in September 2022. The AU Strategic Plan (2021-2025) identifies the updated mission, vision and values of the institution together with four goals and 10 strategic objectives. The MSEM aims are appropriately aligned with the institution's mission, vision and values, as well as the CBF's mission, vision and strategic goals.
- There is a legally binding Memorandum of Agreement (MoA) between GWU and AU covering the duties and obligations of both parties, including programme courses, the admission criteria, enrollment expectations, language of instruction, administration, financial arrangements, and term and termination of the agreement. The MoA was signed in 2009 and evidence has been provided that the agreement has been monitored and updated in 2013 and in 2018 to modify programme course codes, administrative details and the term of the agreement, which is now valid until December 2023.
- Upon successful completion of the programme, students will be awarded the degree by GWU. The title of the award is specified within the MoA and the award certificate uses the GWU name. Evidence was provided of the official AU stamp to ensure recognition of the qualification in Bahrain.
- The MoA and subsequent updates explicitly identify responsibility for teaching and learning, with GWU delivering four compulsory courses and the remaining courses being delivered by faculty employed by AU and screened by GWU. Furthermore, the MoA confirms that admission requirements, which are the same as GWU on-campus requirements, are specified by GWU together with a specified proficiency in English language. During the interviews, it was confirmed that the admission process is operated by AU but with authority for admission decisions being the responsibility of GWU.
- The MoA does not explicitly identify responsibility for assessment of courses, nor responsibility for academic and non-academic support, however, it was confirmed during interviews that the institution with responsibility for delivering the courses has responsibility for assessment and that AU has responsibility to provide academic and non-academic support for students. Nevertheless, the Panel recommends that AU should ensure in the next revision of the MoA with GWU that the agreement covers all the roles and responsibilities assigned to the two institutions to ensure that the programme is of comparable quality.

Indicator 1.2: Graduate Attributes & Intended Learning Outcomes

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

Judgement: Addressed

- There are institutional graduate attributes, and the Self-evaluation Report (SER) includes the mapping between those attributes and the Programme Intended Learning Outcomes (PILOs). The Panel notes that the mapping is appropriate, however the mapping process is not explicitly a part of the programme development and approval process. During the interviews, the Panel learnt that the mapping has been formally approved by the EMSE Programme Committee. Nevertheless, the Panel advises that the mapping process between the graduate attributes and the PILOs is included as part of the programme development and approval process for cross border programmes.
- The PILOs are clearly stated in the Programme Specification document and the Panel finds them appropriate for the type and level of the programme. Mapping between programme aims and PILOs is provided in the SER. The Panel finds the mapping to be appropriate, despite the fact that it is not a part of the programme development and approval process. Given that the MSEM is a collaborative programme and not subject to change by AU, the Panel suggests that approval of the mapping between programme aims and PILOs is included as part of the programme development and approval process for cross border programmes.
- The PILOs are appropriately written and measurable, and the Panel was provided with evidence demonstrating that the programme meets the NQF requirements. The programme was comprehensively benchmarked with other equivalent master's degrees at a range of regional and international universities.
- The Course Intended Learning Outcomes (CILOs) are appropriate for a Master level programme (NQF Level 9) and the course contents. Moreover, the NQF level is included in each course syllabus. The mapping between CILOs and PILOs is evident in the Programme Specification and Course Syllabi documents. The Panel notes that the learning outcomes of the research components of the MSEM programme are consistent with the PILOs.

Indicator 1.3: The Curriculum Content

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

Judgement: Addressed

- The curriculum of the MSEM programme comprises 11 courses totaling 36 credit hours (144 NQF credits). The study plan is published on AU's website and includes a foundation course. It also specifies the courses that will be taught in each semester. Four core courses (12 credit hours) are taught in the first semester and five elective courses (15 credit hours) are taught in the second and third semesters, in addition to one core course in research methods (three credit hours), which is taught in the second semester, and the research course (six credit hours), which is offered in the third semester. There are no pre-requisites for any of the taught courses, however, the 'Research' (EMSE6995) course has the 'Special Topics: Research Methods for the Engineering Management' as a pre-requisite. The Panel learnt during interviews that there is an informal evaluation of student study and assessment workload, but it is not clear how regular or rigorous this process is. Therefore, the Panel advises the College to develop a mechanism in cooperation with GWU to ensure that the student workload is regularly evaluated and appropriate.
- The curriculum is regularly updated. The provided evidence demonstrates that EMSE-OCP Board has approved syllabi changes and CBF has completed extensive benchmarking of MSEM course titles and content with equivalent regional and international programmes. The exercise demonstrates that there is a broad range of content that is appropriate for an MSEM qualification, which may include different foci. The programme offered at AU has a particular narrow focus which is more business/ management focused. The Panel accepts that this focus is appropriate for the award title. Evidence provided also demonstrated that the content of the programme is of the appropriate depth for a Master's degree.
- There is an appropriate balance between theory and practice in the programme. The MSEM periodic review of 2017, highlighted a range of changes required including deliverables. Evidence of course updating was provided, in particular that CILOs were updated to strengthen practical skills within the course. The Panel learnt during interviews that practical skills have been updated to incorporate recent local relevant case studies.
- Overall, textbooks are current (three years old or less), however, references were generally dated in many courses having the most recent reference dated 2015 or earlier. For example, the reference range for the courses 'Systems Engineering I' (EMSE6801), 'Program and Project Management' (EMSE6820), and 'Special Topics: Research Methods for the EM' (EMSE6992) are 2003-2013, 2006-2015, and 2005-2012, respectively. The Panel also noted that in many cases there were incomplete references with no published date provided. During the interviews, the Panel learnt that the reading lists were updated during the academic year 2021-2022. The Panel recommends that the College in cooperation with GWU should review the recommended reading lists for students to provide more up-to-date supporting references.

- All students studying the MSEM programme should take the 'Research Methods for Engineering Management' (EMSE6992) course in preparation for the 'Research' (EMSE6995) course. The course covers quantitative and qualitative research methods, approaches for planning managing and conducting research including consideration of adherence to research ethics in conducting and reporting on research.
- AU takes account of the cultural and linguistic sensitivities of Bahrain through the engagement in the United Nations Sustainability initiative, in particular through the sustainable development goals 4 and 5. During the interviews, the Panel was informed that the flexibility of the GWU-AU MoA ensures that the MSEM programme can be modified to incorporate material relevant to the Bahrain economy, culture and organisations, and to comply with the requirements of the regulatory bodies.

Indicator 1.4: Teaching and Learning

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

Judgement: Addressed

- AU has a five-year Teaching and Learning Excellence Plan (TLEP), which includes initiatives to support excellence in teaching and learning, and refers to the use of innovative teaching methods, virtual learning and smart teaching tools. The Programme Specification identifies a range of teaching and learning approaches used in the MSEM programme such as lectures, guided group/class discussions and debates, case studies and projects, which enable the attainment of the PILOs. There are also detailed requirements specified by EMSE Online and Off-campus Programmes (OOC) Office for faculty to follow when teaching. During the interviews with academic staff and students, they confirmed that the e-learning content is appropriate and well-delivered.
- Following the BQA review of the MSEM programme in 2017, the teaching and learning approaches were amended to include more practical application and real-life case studies using the Arab region context, as well as upgrading the assessment to challenge students' creativity. Moreover, during the interviews, the Panel learnt that changes have been monitored and reviewed for improvements and that there is satisfaction with the level of practical skills included in the programme. Independent learning is embedded in the programme, particularly through the research course as well as in a number of courses where case studies are used.
- Students research capabilities are supported by two courses, namely: the 'Research Methods for Engineering Management' (EMSE6992) and 'Research' (EMSE6995). Evidence was provided of a number of publications authored by MSEM faculty members. Moreover, a range of workshops, a research forum and an equal opportunities conference co-hosted by AU were provided for students to support their informal learning and

development of research skills. In addition, students have the opportunity to acquire professional certifications, such as Project Management Professional and Microsoft Certified Professional. The Panel learnt during interviews that the contents embedded within the programme enable them to achieve these certifications.

Indicator 1.5: Assessment Arrangements

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

Judgement: Addressed

- The AU Assessment Manual (Cross Border Qualifications), which was approved in January 2022 is available to all staff on the intranet. Assessment related policies and regulations are explained to all students during induction sessions. Moreover, the students' admission letters include a link to the GWU bulletin with all relevant regulations concerning the MSEM programme. Furthermore, the Panel confirmed during the interviews that students are fully aware of the regulations and the processes that apply to them for assessment.
- The Assessment Manual includes policies, regulations and procedures in line with the HEC requirements, and covers assessment design, assessment security, marking, internal verification, external verification and moderation, approval of results, feedback to students, grade appeals and plagiarism and other forms of academic misconduct. The Panel notes that the Manual does not include a content page nor version control showing amendments to the document over time. Hence, the Panel suggests that content pages and version control improvements are added to documentation including guidelines and procedures for ensuring consistency and quality of delivery of the GWU MSEM programme at AU.
- Formative and summative assessments are specified in the course syllabi, which are made available to students at the beginning of the course. Evidence was provided of a mid-term examination with CILOs applicable to specific questions clearly marked. The syllabi provided indicate the assessment package including which elements are formative. During the interviews with the students, the Panel learnt that students get appropriate formative assessment in classes with immediate (group) feedback to support their understanding of the subject. The Panel was provided with samples of assessed work with feedback that supports students further learning.
- All the MSEM students take the Research Methods course in preparation for the 'Research' (EMSE6995) course. The course includes consideration of research ethics in conducting and reporting on research in Engineering Management. The Panel requested evidence to show that the course takes account of research ethics related to different disciplines,

however insufficient evidence was provided. The Panel advises CBF to include contents that support students understanding of research ethics in a variety of disciplines.

Standard 2

Efficiency of the Programme

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

Indicator 2.1: Admitted Students

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

Judgement: *Partially Addressed*

- The admission requirements are clearly published on the university's website, the Programme Factsheet, and the Student Guidebook. These documents provide sufficient information to prospective students about the MSEM programme and demonstrate that there is an equal opportunity for all potential students to apply to the programme. The Panel finds that, in general, the admission requirements are sufficient to ensure that appropriate students are enrolled, however, the English language requirements for non-native English speakers do not specify the minimum required language score in the internationally recognised language tests. Therefore, the Panel recommends that the College in cooperation with GWU should include minimum English language test scores for non-native English speakers in the admission requirements.
- The Student Guidebook covers the remedial support measures, which comprise a foundation course entitled 'Special Topics: Quantitative Methods in Engineering Management' (EMSE4197) that is offered to those who do not meet certain admission requirements. The Guidebook also covers the credit transfer requirements, which consist of a maximum of six credit hours.
- The Panel learnt during the interviews that admission requirements are regularly revised based on the feedback from relevant stakeholders, and that the latest review in the academic year 2019-2020 did not lead to any amendments. However, the evidence provided was not sufficient to demonstrate that the review of the admission requirements of the MSEM programme is comprehensive and takes into consideration student performance and national and international benchmarks. Hence, the Panel recommends that AU should ensure that the admission requirements for cross-border programmes are regularly revised in light of student performance and national and international benchmarks.

Indicator 2.2: Academic Staff

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

Judgement: Addressed

- The requirements and the procedures for recruitment, appraisal, and promotion of academic staff are documented in the Human Resources Policy and Procedures Handbook, Academic Staff Bylaws, and Bylaws for Academic Promotion for Faculty. Evidence was provided, including a recruitment form, appraisal processes and promotion processes to demonstrate that these processes are implemented fully by CBF. Moreover, during the interviews, the Panel learnt that appointment of faculty contributing to the MSEM programme is discussed and approved by the EMSE-OCP Board. According to the SER newly appointed staff are briefed on their roles and responsibilities by the Dean of the College, however, the Panel notes that faculty induction was not clear in the academic staff bylaws. Therefore, the Panel recommends that AU should revise its policies and procedures to include the induction process for newly appointed staff as well as the related roles and responsibilities and ensure consistent implementation.
- The Research Plan 2021-2025 clearly indicates the aims and performance indicators for scientific research. AU supports research through a series of activities and provided evidence of funded research conducted and conferences attended by the academic staff. The Panel was provided with lists of published books and articles by faculty members as well as their participation in conferences.
- The distribution of the academic staff workload is based on the academic rank as per the HEC regulations, and this is done in line with the Workload Allocation Policy and Breakdown Criteria, which allows them to practice all required academic duties appropriately. The Panel was provided with evidence indicating that there is sufficient number of staff, given that the MSEM courses are taught by both AU and GWU faculty, and the latter are mostly with an engineering background. Moreover, AU monitors the turnover of their qualified academic staff members year by year and submitted evidence that indicates appropriate retention rate for the years 2021 and 2022, being 92% and 95%, respectively.
- Professional development is a noticeable item in university strategic planning. The Panel was provided with a Faculty Professional Development Plan – 2020, which covers a number of programmes and activities by AU to support their faculty professional development needs. The Panel was also provided with a list of professional development programmes conducted during 2021. The feedback for these professional development programmes has been evaluated in an appropriate manner, and the Panel learnt during the interviews with faculty that training needs analysis is regularly conducted to fill the

gap of knowledge and skills in addition to their ability to request a professional development programme according to their needs through a clear process.

Indicator 2.3: Physical and Material Resources

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

Judgement: Addressed

- According to the SER, AU has classrooms and computer laboratories that are equipped with hardware and software serving the MSEM programme, in addition to free Wi-Fi. Based on the provided evidence and the on-site campus tour, the Panel is satisfied that the available classrooms and laboratories are sufficient and appropriately equipped to accommodate the current number of students. The Panel also notes that students are satisfied with the available hardware, software and internet facilities provided to them.
- AU has a library that includes printed learning resources and provides access to electronic resources, in addition to individual and group study areas. The Library and Information Resources Directorate oversees the library facilities and maintains the international online databases subscriptions, which are accessible to faculty and students. Moreover, there is an internal system in the library that controls the usage of the library resources and allow students to book appointments for their visits to the library. During the on-site campus tour, the Panel confirmed that the available hard copy books in the library dedicated for the MSEM programme courses include recent versions that are appropriate for the level and content of the programme.
- The information technology facilities in the classrooms and laboratories are monitored by the Information and Communication Technology (ICT) Centre and there is a formal mechanism to ensure the maintenance of the hardware, software and network deployed at AU and measure their adequacy. The library also follows up with the academic departments, every semester, in case there is a need for new textbooks and references.
- A Health and Safety Booklet and Emergency Response Guide, highlighting the emergency team contact numbers, are available online on AU website. AU also has a dedicated health clinic, which is staffed with a full-time nurse. During the on-site campus tour, the Panel verified the health and safety arrangements and found them adequate.

Indicator 2.4: Management Information Systems

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

Judgement: Addressed

- AU is using the Admission and Registration Information System (ADREG) to manage and monitor admission, student courses registration, student performance, academic advising, alumni tracking, among other processes and services. ADREG generates reports for classroom and computer laboratories usage by students and faculty, as well as other activities. The information technology facilities, which are managed and monitored by the ICT Centre, also provides the EMSE Programme Committee and College Council with the generated reports for decision-making.
- AU has a learning management system (Moodle), which is used by the students to view the course material and upload their assignments. Moreover, AU has recently released a mobile application that provides students with an easier access to their profile, schedule, transcript, study plan, examination cards, among other services.
- To ensure the security of the learners' records, the ICT Centre has the Server Backup & Restore Procedure, which indicates that server backup is automatically scheduled on a daily, weekly, and monthly basis and the backup tapes are stored at the Ahlia School, which is off site from AU.
- AU implements its Authentication of Certification-Policy and Procedure to verify the students' achievement and authenticate the certificates. According to the procedure, the certificate issuance is initiated through ADREG, which verifies the course completion versus the degree requirements, then proceeds with certificate issuance and approvals by GWU.

Indicator 2.5: Student Support

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

Judgement: Partially Addressed

- The newly enrolled/transferred students in the programme go through an induction day and orientation sessions delivered by both AU and GWU. The induction programme addresses AU and GWU rules and regulations and academic advising policy, as well as AU student facilities, library, laboratories, e-learning and e-resources. All such information is available in the Student Guidebook and both AU and GWU websites. During the interviews, the Panel confirmed that students are satisfied with the induction process.
- The staff of the Library and Information Resources Directorate guide and assist the students with accessing the e-learning resources and any issue regarding the use of the

library. Similarly, the ICT Centre staff support the students with the usage of the information technology facilities, such as account creation and network access. During the on-site campus tour, the Panel observed the visual display of e-learning resources web-link access and printing instructions in the library. Furthermore, students have direct contact with technical support in the library for queries and library textbook loan.

- During the induction process, students are introduced to their academic advisor. ADREG allows the advisor to monitor the students' course registration, their performance along with viewing their transcripts. The system is also used for monitoring and dealing with at-risk students by tracking their academic progress and generating reports that are sent to the EMSE Programme Committee and then to the EMSE-OOCP Office for further actions.
- During the induction process, students are introduced to the student counsellor who is assigned to deal with their academic, personal, social challenges. However, no supporting material was provided demonstrating the career counselling services provided to the students, and the Panel learnt during the interviews that the students and alumni were not aware of the career counselling services available in the University, although it was not a concern to them as they are already employed. Nevertheless, the Panel is of the view that students should be provided with sufficient information and guidance about this service to ensure equivalent experience with GWU students and to support students who are currently unemployed. Therefore, the Panel recommends that AU should ensure that systematic career guidance and support is provided to MSEM students to facilitate their career development.
- AU policy on equal opportunities is stated in the Student Guidebook. Furthermore, based on the last five years intake female gender ratio ranged from 35% to 55%. During the on-site campus tour, the Panel noticed that the facilities provided for students with special needs as well as the counselling services to support them are adequate.
- AU ensures the assessment of the facilities and support services provided to the students and faculty by conducting student, faculty, and alumni satisfaction surveys. The results revealed that the students and faculty were satisfied with the academic facilities and support provided. However, the evidence provided demonstrates that feedback on non-academic support services is not regularly collected from students and alumni. Therefore, the Panel recommends that AU should ensure that all types of student support services are appropriately and regularly monitored and improved in line with students' needs.

Standard 3

Academic Standards of Students and Graduates

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

Indicator 3.1: Efficiency of the Assessment

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

Judgement: Addressed

- AU's Assessment Manual covers all assessment related aspects for cross border programmes. The Manual states the guidelines for designing the assessment to assure adequate level of complexity that meets academic standards. It also defines the mechanism to ensure the alignment of the assessment to the PILOs, which are linked to the graduate attributes, assessment internal and external verification and moderation, assessment weightage, marking and grade approval, and security of assessment documents and records. The Panel scrutinised the submitted samples of assessment within the course portfolios and confirms their appropriateness in terms of validity and level of complexity.
- To ensure that graduate achievements meet the PILOs, CILOs Attainment Sheets are prepared at the end of the semester for each course to assess the achievement of the CILOs, which are then used to check the overall achievement through the PILO Assessment Matrix.
- The EMSE Programme Committee ensures the implementation of the MSEM programme courses assessment, and this is further monitored by the CBF Council and Centre for Accreditation & Quality Assurance (CAQA). The Centre follows up the process of internal and external verification and moderation to ensure proper assessment is being conducted in line with the assessment procedures. The outcomes are reported and discussed in the EMSE-OCP Board meeting, to approve any required amendments.

Indicator 3.2: Academic Integrity

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

Judgement: *Partially Addressed*

- During the induction period, students are introduced to the policies and procedures related to academic conduct and the Code of Academic Integrity applied in AU, which are also included in the Student Guidebook. The academic integrity and ethics in research are also communicated to the students through the 'Research Methods for Engineering Management' (EMSE6992) course.
- AU has formal procedures in place for detecting and dealing with plagiarism and other forms of academic misconduct. As per the Assessment Manual, the maximum level of similarities allowed for post-graduate assessments (other than dissertation) is 20% and 15% for the dissertation. The students, course instructors, and dissertation supervisors and examiners have access to the plagiarism detection software Turnitin.
- The SER states that cases of plagiarism and academic misconduct are reported to GWU to take the necessary disciplinary actions according to their policies and procedures. However, the Panel learnt that no cases have been formally recorded for plagiarism or academic misconduct in the last five years, although during the interviews, it was declared that faculty have dealt with cases of plagiarism informally and allowed students to resubmit their work. Hence, the Panel recommends that CBF should ensure that all academic misconduct and plagiarism cases are formally recorded, and appropriate actions are taken.

Indicator 3.3: Internal and External Moderation of Assessment

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

Judgement: *Addressed*

- The Assessment Manual covers the procedures for internal and external verification and moderation of assessments, as well as the selection of the external assessors. As per the Assessment Manual, the internal verification of assessments is conducted by an internal verifier, nominated by the Department Chairperson, to ensure the alignment of assessments with the CILOs. The internal moderation process is conducted by an Internal Moderation Committee to ensure the validity of the major assessment instruments as well as the fairness of grading in each course. Any required amendments are communicated to the course instructor. The Panel was provided with samples of the Internal Verification and Moderation Summary Reports, which confirmed the effectiveness of the processes.
- The external verification and moderation of assessments is conducted by external assessors, who are selected based on their qualification, experience and professional competencies, as per the Assessment Manual. The submitted samples show that external assessors reviewed the course specification, samples of the major piece of course work,

samples of the final examination answer scripts, and the grade distribution of the course. The Panel noted that recommendations made through this process were formally discussed and implemented, and during the interviews, the Panel confirmed how the external moderation contributes to the review and improvement of the programme and its courses.

- According to the Assessment Manual, the feedback from the Internal Moderation Committee is used to monitor and validate the effectiveness of the internal verification and moderation processes. The SER also indicates that the AU Programme Coordinator, College Dean, and CAQA assess and monitor the external verification and moderation processes. However, the Assessment Manual does not include any mechanism for monitoring and evaluating the effectiveness of the internal and external verification and moderation assessment processes. Therefore, the Panel recommends that the College should ensure including all the implemented mechanisms for evaluating the effectiveness of the internal and external verification and moderation processes in the Assessment Manual.

Indicator 3.4: Work-based Learning

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

Judgement: Not Applicable

Indicator 3.5: Capstone Project or Thesis/Dissertation Component

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

Judgement: Partially Addressed

- The 'Research' (EMSE6995) Course Specification and the research project samples confirm that the course contributes effectively to the achievement of the MSEM PILOs. During the interviews, the Panel learnt about the programme engagement with the engineering industry through the members of the External Advisory Board and their contribution to the MSEM research by proposing research topics, highlighting the areas currently needed, and supporting students' data collection. Nevertheless, the Panel suggests expanding the level of the programme engagement with the industry to include postgraduate research sponsorship and collaboration.

- The roles and responsibilities of the supervisors and students are available in the Guidelines and Procedures for Supervising and Examining MSEM Students Research. These guidelines are uploaded on the Moodle course page for students. The allocation of students to supervisors from GWU and co-supervisors from AU is done based on their area of interest and approved by the EMSE-OCP Board.
- As per the Guidelines and Procedures for Supervising and Examining MSEM Students Research, regular monthly meetings are conducted between the supervisor, co-supervisor and the student to ensure the monitoring of students' progress during their research course. All records are saved on the ADREG system, which enables supervisors and co-supervisors to monitor the progress and performance of students. The project supervisory meetings are also tracked by the Chairperson of the EMSE Programme Committee.
- The assessment of the project is the responsibility of an examination committee, which is approved by the CBF College Council and GWU. The examination committee uses clear assessment rubrics for written work and oral presentation. The Panel was provided with a sample of an MSEM student project report, along with the supervisor, internal and external examiners assessment forms and reports and the assessments rubrics used for grading. The Panel notes that although the comments by the internal and external examiners were carefully considered and appropriate, the given grades for some of the marked parts did not match the comments, which reflects grade inflation. Therefore, the Panel recommends that AU should ensure implementing more rigorous mechanisms to monitor the assessment of the research course and prevent grade inflation.
- According to the SER and the interviews, the Chairperson of the EMSE Programme Committee and the Dean are tracking the supervision process through ADREG as part of their responsibility for the implementation and improvement process of the research course. AU also considers the recommendations of the College External Advisory Board and HEC requirements.

Indicator 3.6: Achievements of the Graduates

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

Judgement: Addressed

- The Panel examined the Programme Specification, and Course Portfolios, which include students' graded work and was able to confirm the appropriateness of the level of students' achievements as well as comparability to similar programmes. Students' assessed work have been scrutinized by external assessors and external examiners of the research project to ensure that the level of achievement is appropriate. The Panel notes that in many cases, students have published papers in refereed journals and students have

obtained professional/industrial certification based on the content they studied in some of their courses.

- According to student intake statistics of the last five years around 94% of the intake either graduated or are progressing. For the last five years around 63% of the graduates took three semesters to graduate from the programme, while the remaining took four semesters to graduate. The Panel notes that these durations are compatible with the study plan of the programme and consonant with those on equivalent programmes.
- The Graduates Destinations list shows the employability of graduates' and reflects a suitable follow up and monitoring of graduates' destinations. The list also shows that AU has utilised this information to ensure the quality of graduates and to triangulate this information with employers' feedback.
- The alumni and employers' satisfaction surveys are regularly conducted to measure the level of satisfaction with the graduates' profile. The External Advisory Board is also approached to evaluate the level of the graduates. The Panel notes that all stakeholders are highly satisfied with the profile of MSEM graduates, which was further confirmed during the interviews with the employers. The Panel appreciates the achievements of graduates in terms of published papers, professional certificates, and employability.

Standard 4

Effectiveness of Quality Management and Assurance

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

Indicator 4.1: Quality Assurance Management

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

Judgement: Addressed

- The Guidelines and Procedures for Ensuring Consistency and Quality of Delivery of the GWU-MSEM Programme at AU covers the governance and management, the student lifecycle and quality management and delivery of the MSEM programme. This document is further supported and is implemented in line with other policies and procedures stated in the Quality Assurance Manual, the Assessment Manual (Cross Border Qualifications) and the Academic Planning Framework. The method of communicating these policies and procedures is either through the AU website or the ADREG system. External stakeholders are also provided with the necessary formal documentation during their meetings with AU to ensure obtaining appropriate feedback from them.
- In addition to the abovementioned documents, CBF has identified performance indicators to follow up the implementation of the Operational Plan and ensuring its alignment with the QA criteria. The EMSE Programme Committee implements the QA related policies and procedures for the MSEM programme, and this is monitored by the Dean of the College. GWU also monitors the QA processes relevant to the MSEM programme to ensure consistent implementation between both institutions through regular meetings of the EMSE-OCP Board and GWU members visits to the AU campus. At the University level, CAQA ensures the implementation of the QA processes for all programmes, in line with the AU procedures, regulatory body and BQA requirements.
- AU conducts regular workshops for its academic and support staff to ensure that they understand their roles in the QA processes. It was evident during the interviews, that they know their roles and responsibilities and actively participate in the QA processes. The end of semester survey also indicates that academic staff are satisfied with the QA processes, which are regularly monitored, evaluated and improved.

Indicator 4.2: Programme Management and Leadership

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

Judgement: Addressed

- The College Organizational Chart is appropriate for the management of the MSEM programme. In addition to the Chart, the Academic Planning Framework shows clear reporting lines between the MSEM faculty with the programme coordinator chairing the EMSE Programme Committee, who then reports to the Dean of CBF chairing the College Council, and then to the EMSE-OCP Board. Furthermore, the programme is managed by the EMSE Department of School of Engineering and Applied Science at GWU which receives input from the EMSE-OOCP Office in coordination with EMSE-OCP Board. The Panel acknowledges the high-level of coordination between both AU and GWU in the decision-making process. However, to ensure more harmony, the Panel suggests offering the MSEM programme by the College of Engineering at AU, similar to the offering by GWU.
- Terms of reference for management posts and committees within AU are clearly stated in the AU Bylaws. Furthermore, the Academic Planning Framework identifies the roles and responsibilities of joint committees with GWU and an adequate structure for leadership and management for the MSEM programme to ensure equivalent quality of education. For example, the EMSE Programme Committee is responsible for academic and non-academic issues such as class scheduling, implementation of QA policies and procedure, student issues, supervisor allocation and resource allocation. while the EMSE-OCP Board is responsible for overseeing the implementation of the programme according to the relevant identified QA procedures and MoA. The Board reviews recommendations by the EMSE Programme Committee and College Council in relation to major issues and approves required actions.
- According to the MoA between GWU and AU, MSEM students studying at AU have the same rights of others studying at GWU, in terms of utilising GWU facilities such as online library, software, and other digital resources. The Panel also learnt during the interviews that once a student is registered, he/she is eligible to have access and use GWU facilities for MSEM.

Indicator 4.3: Annual and Periodic Review of the Programme

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

Judgement: Addressed

- The Academic Programme Annual Review Procedure indicates that the annual review process covers the course structure and content, learning outcomes, assessment methods, internal and external assessor/examiner input, and contribution to the achievement of the PILOs. The annual review for the MSEM is conducted by the MSEM Programme Committee, resulting in a review report and recommended actions forwarded to the College Council for feedback and approval. In case of minor actions, this is further forwarded to the Curriculum Committee for immediate action to be endorsed by the University Council, otherwise the recommended actions are kept for the next periodic review.
- The Processes for Developing, Reviewing and Closing Postgraduate Academic Programmes Policy document outlines the periodic review process which takes place every three years. The last periodic review was conducted in 2022, considering feedback from internal and external stakeholders, as well as benchmarking with equivalent programmes and need analysis, as per the policy requirements. This comprehensive review resulted in a report produced by the MSEM Programme Committee, which is forwarded along with an action plan for further discussions and approval by the College Council, then to the EMSE-OCP Board for further feedback and approval. The review resulted in some major changes, such as adding real-life local cases, upgrading the assessment methods of some courses and adding new topics. Major changes are sent to the HEC, if required.
- CAQA is responsible for monitoring and ensuring effective implementation of the annual and periodic reviews. The Panel was provided with evidence showcasing effective implementation and monitoring.

Indicator 4.4: Benchmarking and Surveys

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

Judgement: Addressed

- AU benchmarked the MSEM programme with similar regional and international programmes. The benchmarking criteria covered the programme structure, and courses' titles, content, and credits. This is conducted every three years to feed into the periodic review process. The benchmarking resulted in a number of recommendations and pointed out the need to enrich the courses with topics related to manufacturing, process management, and supply chain management, which was taken into consideration and implemented as seen in the submitted Course Specification documents after obtaining the necessary approvals by GWU and AU.

- The Processes for Developing, Reviewing and Closing Academic Programmes Policy documents indicates that gathering internal and external stakeholders' feedback through surveys is required for the programme review process. The Centre for Measurement and Evaluation (CME) at AU is responsible for conducting such surveys, mainly for the students, alumni, employers. The CME analyses the results of the surveys in a form of a report forwarded to the College Council for taking the necessary actions.
- AU conducts satisfaction surveys to measure the students, employers and alumni satisfaction with the programme. The results of all satisfaction surveys were positive. According to the SER, AU communicates the implemented updates to the programme to alumni through regular gatherings, to students during classes, and to the External Advisory Board during its meetings. The Panel noted during the interviews that only the External Advisory Board is aware of the implementation progress, but there was insufficient evidence that students, alumni and employers receive feedback on actions taken following their feedback. Therefore, the Panel recommends that AU should develop and implement a formal mechanism to ensure that improvements made to the programme are communicated to all stakeholders.

Indicator 4.5: Relevance to Labour market and Societal Needs

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

Judgement: Addressed

- To ensure continuous scoping of the labour market needs and the currency of the programme, AU has an active College External Advisory Board. Its members include industry representatives and alumni, and their roles and responsibilities are clearly documented. Feedback of the External Advisory Board is obtained twice a year through meeting discussions. The feedback is discussed in the College Council and EMSE-OCP Board meetings for review and decision making. The Panel finds that there is sufficient evidence of implementing the recommendations based on the gathered feedback to improve the programme relevance to the local context. The Panel appreciates AU's efforts in tracking and embedding the local requirements into the programme through engagement with the External Advisory Board.
- Market needs analysis was conducted in the early stages of the programme development according to the mechanism stated in the Policy on Needs Assessment and Analysis. Market scoping is also conducted for the purpose of the periodic programme review to maintain an up-to-date awareness of market and societal needs, stakeholders' demands and the future employment opportunities in the relevant field of study. The Panel was provided with the Market Needs Assessment report conducted in 2022 for the MSEM programme. The report covers statistics and information gathered from local and

international sources suitable to assess the need for the programme and its graduates. The results were discussed in the College Council and EMSE-OCP Board meetings for approving the necessary actions.

V. 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 Academic Programme Reviews (Cycle 2) Handbook, 2020*:

There is Confidence in the Master of Science Degree in Engineering Management of the College of Business and Finance offered by Ahlia University.

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

1. The extent of engagement of The George Washington University and the mutually beneficial partnership between both universities.
2. The achievements of graduates in terms of published papers, professional certificates, and employability.
3. The efforts by Ahlia University in tracking and embedding the local requirements into the programme through engagement with the External Advisory Board.

In terms of improvement, the Panel recommends that Ahlia University and/or the College of Business and Finance should:

1. Ensure in the next revision of the Memorandum of Agreement with The George Washington University that the agreement covers all the roles and responsibilities assigned to the two institutions to ensure that the programme is of comparable quality.
2. Review, in cooperation with The George Washington University, the recommended reading lists for students to provide more up-to-date supporting references.
3. Include minimum English language test scores for non-native English speakers in the admission requirements.
4. Ensure that the admission requirements for cross-border programmes are regularly revised in light of student performance and national and international benchmarks.
5. Revise the policies and procedures to include the induction process for newly appointed staff as well as the related roles and responsibilities and ensure consistent implementation.
6. Ensure that systematic career guidance and support is provided to MSEM students to facilitate their career development.

7. Ensure that all types of student support services are appropriately and regularly monitored and improved in line with students' needs.
8. Ensure that all academic misconduct and plagiarism cases are formally recorded, and appropriate actions are taken.
9. Ensure including all the implemented mechanisms for evaluating the effectiveness of the internal and external verification and moderation processes in the Assessment Manual.
10. Ensure implementing more rigorous mechanisms to monitor the assessment of the research course and prevent grade inflation.
11. Develop and implement a formal mechanism to ensure that improvements made to the programme are communicated to all stakeholders.