

الهيئة الوطنية
للمؤهلات وصفان جودة التعليم والتدريب
National Authority for Qualifications &
Quality Assurance of Education & Training



Directorate of Higher Education Reviews

Programmes-within-College Reviews Report

**Bachelor of Science in Computer Science
College of Computer Studies
AMA International University Bahrain
Kingdom of Bahrain**

Date Reviewed: 28–30 January 2013

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Acronyms

ABET	Accreditation Board for Engineering and Technology
ACM	Association for Computing Machinery
AI	Artificial Intelligence
AMA-IUB	AMA International University Bahrain
BSCS	Bachelor of Science in Computer Science
CCS	College of Computer Studies
Cisco	Cisco Systems, Inc.
CQI	Continuous Quality Improvement
DHR	Directorate of Higher Education Reviews
HEC	Higher Education Council of the Ministry of Education, Kingdom of Bahrain
ILO	Intended Learning Outcome
MIS	Management Information Systems
MSCS	Master of Science in Computer Science
PEO	Programme Education Objectives
PIAP	Programme Industry Advisory Panel
QA	Quality Assurance
QQA	National Authority for Qualifications & Quality Assurance of Education & Training
SER	Self-Evaluation Report
SO	Student Outcome
VLE	Virtual Learning Environment

1. The Programmes-within-College Reviews Process

1.1 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 National Authority for Qualifications & Quality Assurance of Education & Training (QQA) 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 QQA, 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	

1.2 The Programmes-within-College Reviews Process at the AMA International University Bahrain

A Programmes-within-College review of the College of Computer Studies (CCS) was conducted by the DHR of the QQA in terms of its mandate to review the quality of higher education in Bahrain. The site visit took place on 28-30 January 2013 for the academic programmes offered by the college, these are: Bachelor of Science in Computer Science (BSCS); and Master of Science in Computer Science (MSCS).

This report provides an account of the review process and the findings of the Panel for the Bachelor of Science in Computer Science (BSCS) based on the Self-Evaluation Report (SER) and appendices submitted by the AMA International University Bahrain (AMA-IUB), the supplementary documentation made available during the site visit, as well as interviews and observations made during the review site visit.

AMA-IUB was notified by the DHR/QQA in 13 September 2012 that it would be subject to a Programmes-within-College reviews of its College of Computer Studies with the site visit taking place in 28-30 January 2013. In preparation for the review,

AMA-IUB conducted its college self-evaluation of all its programmes and submitted the SER with appendices on the agreed date on 18 November 2012.

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

This Report records the evidence-based conclusions reached by the Panel based on:

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

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

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

1.3 Overview of the College of Computer Studies

The CCS offers its students two academic programmes, the BSCS and the MSCS. There are three departments in the college. These are: Computer Science, Information Technology and Information Management. The college employs a total of 23 full-time academics out of which 19 are holding lecturing positions (one associate professor, 11 assistant professors, and seven lecturers), three full-time heads for the academic departments, and a full-time college Dean. In 2010-2011, 17 students enrolled for an MSCS degree and 493 for a BSCS degree at the institution. In 2011-2012 the number registered for the MSCS dropped to 10 and for the BSCS to 397 students. At the time of the site visit two students were registered for the MSCS and 306 for the BSCS.

1.4 Overview of the Bachelor of Science in Computer Science

The BSCS programme started in 2001, initially with 57 students, the majority of whom were Bahrainis and from the neighbouring country, Saudi Arabia. Today, the programme has 306 students and has graduated 306 students.

The College of Computer Studies has two running curricula, Curriculum 2010-2011 and Curriculum 2012-2013. The Curriculum 2010 – 2011 has 184 trimester credit units distributed as Computing Courses – 114 units; Mathematics - 26 units; Science – 11 units; and General Education – 33 units. The Curriculum, effective 2012-2013 has 198 trimester credit units distributed as Computing Courses – 113 units; Mathematics - 37 units; Science – 21 units; and General Education – 27 units.

1.5 Summary of Review Judgements

Table 2: Summary of Review Judgements for the Bachelor of Science in Computer Science

Indicator	Judgement
1: The Learning Programme	satisfies
2: Efficiency of the Programme	does not satisfy
3: Academic Standards of the Graduates	does not satisfy
4: Effectiveness of Quality Management and Assurance	does not satisfy
Overall Judgement	no confidence

2. Indicator 1: The Learning Programme

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

- 2.1 The aims and objectives of the BSCS programme are linked to the Mission and Vision of the AMA-IUB and of the CCS, as apparent from the submitted documents. The programme's main aim is to enable graduates to practice as successful computing professionals. This is in line with the AMA-IUB of producing professionals and leaders responsive to the needs of the Kingdom of Bahrain and its vision to be a dominant provider of relevant and globally-recognized IT-based education in the kingdom and globally.
- 2.2 The CCS submitted evidence of two curriculum plan changes the first for 2010-2011 and the second for 2012-2013, however the Panel cited evidence from AMA-IUB's web site that there were four different curriculum plan changes in the past five years. This is unusually high and can be unsettling for the staff who have to deliver the curriculum, and for the students, especially if a student has to defer for a period of time. Also, with so rapid a change of curriculum, it is not possible to gain experience of the effect of the changes on a cohort of students before the next set of changes are introduced. The Panel recommends that CCS ensures a period of stability in the curriculum before yet more revisions are introduced.
- 2.3 The curriculum is organised in terms of progression, and generally balanced between knowledge and skills and between theory and practice. There are skills-based courses, for example in programming and networking, and knowledge-based courses, for example in Software Engineering and Algorithm Design & Analysis. The 2012–2013 curriculum introduced more theoretical courses, such as Genetic Algorithms and Algorithms & Complexity. However, it has now much more credit hours than the previous curriculum. It includes many courses not relevant to the programme such as Euthenics, Chemistry and Biology, and a number of low-level mathematics courses, such as College Algebra. The Panel heard during interviews with the programme management and faculty members that this was because of the weak background of the students. The Panel recommends that when the programme is revised next it to be brought in line to similar programmes offered locally, regionally and internationally.
- 2.4 The syllabus meets current norms in the field and follows current trends. However, there is a larger than expected number of non-Computer Science courses in the curriculum as discussed in section 2.3. Furthermore, the Panel found that networking courses are very heavily based on Cisco (Cisco Systems, Inc.) course materials and practical work. Although such practice has some practical benefits for the students, it

is very important that they have a sound theoretical introduction to the subject that is independent of any individual vendor. Therefore the Panel recommends that the networking courses be revised so that they are not so heavily oriented to Cisco.

- 2.5 The course ILOs (Intended Learning Outcome) for most of the courses are in general appropriate for the aims and levels of the courses and are mapped to the courses and programme. The Panel examined the course portfolios which showed that there is an appropriate mapping from programme ILOs through course ILOs to students outcomes. However, a number of flaws in mapping was found in the 2012–2013 curriculum especially with the science courses that showed no relevance to the programme ILOs. This needs to be addressed.
- 2.6 There is an element of work-based learning, the Practicum, that contributes to the achievement of learning and receives credit according to a clear formal policy. Students undertake 240 hours of on-site training and work. This is appropriately assessed by an evaluation form completed by the training supervisor and an accomplishment report completed by a representative from the place where the student worked. The Panel appreciates that the College has introduced this opportunity for students to gain experience of the workplace, which is particularly valuable in the software profession.
- 2.7 There is a policy on teaching, learning and assessment. It states that teaching methods include conventional lectures, practical and laboratory-based sessions, tutorials and group working, and the Practicum and Major Project. These teaching methods were acknowledged by students during interviews. During the site tour the Panel was presented with the Virtual Learning Environment (VLE) and the software provided by Cisco and Oracle to support laboratory work. The Panel learned from interviews with faculty members that students are also encouraged in their personal responsibility for learning particularly through exposure to professional practice through the Practicum, and in their development of independent learning through the Major Project. All of these activities support the attainment of the programme aims and the ILOs.
- 2.8 There is formative and summative assessment of students with a clear policy on marking that provides transparent mechanisms for grading students' achievements with fairness. Staff and students are familiar with the assessment methods. The Panel heard during interviews with students that they are provided with prompt feedback on their progress and performance. However, examination of existing and recently graduated students' work suggests that some of the assessments are too straightforward and simple, therefore inappropriate for the set ILOs. (This matter is further discussed in section 4.3.)

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

- The programme aims and objectives are linked to the Mission and Vision of the AMA-IUB and of the CCS.
- The Practicum part of the programme in the final year provides a valuable opportunity for students to gain experience of the workplace.
- There is a variety of teaching methods that should support the attainment of programme ILOs.
- There is a clear and transparent assessment policy.
- The curriculum is generally balanced between theory and practice.
- There is appropriate mapping from programme ILOs through course ILOs.

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

- maintain a period of stability in the curriculum so that the changes introduced recently can be evaluated against a full cohort of students
- revise the networking courses so that they are not so heavily oriented to Cisco
- revise the mapping of science courses' ILOs with the programme ILOs.

2.11 **Judgement**

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

3. 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.

- 3.1 There is an admission policy which is mainly based on an internal examination and interview. To be admitted, a student must obtain a minimum score of 60% in Mathematics, 50% in Science, 60% in English, and 60% in Logical Reasoning. The Panel examined samples of this internal examination and found to be inappropriate to give a sound judgement on whether a student is ready or not for BSCS study. The Panel recommends that AMA-IUB revise its admission examinations so that they are valid and based on international norms. The Panel is of the view that the current admission arrangements permits weak students to be admitted to the programme, a fact that was confirmed in interviews and which motivated the CCS to include many low level mathematics and science courses in the latest curriculum. The Panel suggests that AMA-IUB consider introducing a foundation year to bring the weaker students to a level suitable for the programme.
- 3.2 The profile of admitted students shows a mixture of males and females. In addition, there are full-time as well as part-time students. While there are few international students, the vast majority of students are from Bahrain. All admitted students go through a short orientation programme to get them familiar with the University. The Panel understands that a large proportion of the full-time students are also working full-time. The Panel recommends that the CCS consider lengthening the programme of study for part-time students so that they are in a position to handle their full-time job as well as their education at the same time.
- 3.3 In the current college organization structure the Head of the BSCS programme reports to the Associate Dean who reports to the Dean and the Heads of three academic departments report to the Head of the BSCS programme. Within a department there are course coordinators who report to the head of department and faculty members who report to the course coordinators. The Panel found from interviews with faculty members and programme management that there is limited faculty involvement in decision making related to the running of the programme and its associated activities. The Panel is of the view that the college structure is hindering such involvement. The Panel recommends that mechanisms be put in place to allow for staff involvement in decision making.
- 3.4 There are 19 faculty members contributing to the programme. However, the number of faculty members specializing in computing are only eight. Two of which are PhD holders and the rest are MSc holders. The remaining 11 faculty members associated with the programme specialize in different areas including education, science, and

management. Ten are PhD holders and one is an MSc holder. In addition, the specializations of the computing faculty members do not match what is needed to cover the various courses and areas to be taught in the curriculum. For example, there needs to be faculty members with specializations in Artificial Intelligence (AI), Network Security, and Cryptography. There is a lack of diversity of the faculty especially when considering whether any PhD graduates from internationally recognised universities are recruited. The Panel recommends that CCS recruit more faculty members that are Computer Science PhD graduates, some of which preferably from internationally recognised universities. There is a need to have faculty specializing in AI, Security and Data Mining.

- 3.5 Most of the computing publications submitted to the Panel was carried out by one faculty member. The list of faculty research outputs submitted to the Panel includes research in non-computing fields and titles of research interests that could not be considered as publications. The Panel recommends that CCS implement suitable plans to improve the quality of research output of its faculty members.
- 3.6 There are procedures for the recruitment, appraisal, promotion and retention of academic staff which are known to faculty members. In addition, there is an orientation and mentoring process for newly recruited faculty members. The procedures need to be evaluated for effectiveness. The Panel has some concerns about the quantitative measures associated with the required publications for promotion, i.e. five publications, and suggests that AMA-IUB consider qualitative measures and external evaluation for promotions.
- 3.7 There is an upgraded comprehensive functioning management information system in place that enables informed decision making. It is used by and support the functions including reporting of the administration, faculty members, and students. It consists of subsystems such as, admissions, grading, human resources, registration, students finances, and the advising utility. For example, faculty members can easily enter grades and view the grades of any student. Registration of the students and generating class lists are easily incorporated as well as viewing the students' financial status. Similarly, students are able to see the courses for which they are registered. AMA-IUB implements policies and protocols for ICT disaster recovery as well as policies for data backup in local and remote/off-site locations and restoration. The implementation of these policies and protocols involve the appropriate key stakeholders, which the Panel found satisfactory. The Panel notes the MIS system and its role to service the needs of staff and students.
- 3.8 The physical and material resources in terms of classrooms, teaching spaces, laboratories and other study spaces are adequate, as are the IT facilities and learning resources. Interviewed students and faculty members were satisfied with the library

holdings. There is a tracking system to determine the usage of laboratories, e-learning and e-resources that allows for the evaluation of the utilization of these resources. For instance, logbooks and e-mechanisms are in place to monitor the usage of laboratories, library resources and other resources. The access to the various databases in the library is monitored by the library staff to determine the usage frequency of each and evaluate their importance. This, in turn, will help in deciding on their licence renewal and for library services improvement in general.

- 3.9 There is appropriate student support available in terms of library, laboratories, e-learning and e-resources, with adequate guidance and support. AMA-IUB has library and IT staff that can help students with their library requirements. Similarly, in the laboratories IT staff provide support to students with their learning needs. In addition, the library has an orientation procedure for new students and staff. Interviewed students were happy with the support they gain while using library services.
- 3.10 There are arrangements in place for orienting newly admitted students, including those who transfer from other institutions. AMA-IUB gives the students all information related to the university policies, facilities and services offered. Students interviewed during the site visit confirmed the suitability of the orientation.
- 3.11 There is an appropriate academic support system in place to track students' progress that identifies students at risk of failure and provides interventions where necessary. In particular, each student is assigned an advisor to mentor and monitor his/her progress. When needed appropriate actions are taken, such as conducting tutorials and make up sessions. The ease of access of faculty members and the appropriate support they provide was acknowledged by the students during the interviews. However, the Panel suggests that the CCS consider reducing the academic load of students at a risk of failing in order to promote their academic achievement.
- 3.12 The learning environment is conducive to expanding the student experience and knowledge especially through the availability of a career day and seminars. The Panel suggests that this aspect can be further strengthened through the encouragement of internships, student-interest clubs and sport activities.
- 3.13 In coming to its conclusion regarding the Efficiency of the Programme, the Panel notes, *with appreciation*, the following:
- The upgraded management information system and environment that provides staff and students up-to-date information for better decision making.
 - The support provided to students including the orientation procedure in place for new students and staff.

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

- ensure that its admission examinations are valid and designed based on international norms and practice
- review the length of study needed for completion of the BSCS for full-time working students
- recruit experienced Computer Science PhD holders with appropriate specializations taking diversity into account
- implement suitable plans to improve the quality of research output of its faculty members.

3.15 **Judgement**

On balance, the Panel concludes that the programme **does not satisfy** the Indicator on **Efficiency of the Programme**.

4. Indicator 3: Academic Standards of the Graduates

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

- 4.1 The programme graduate attributes are clearly stated in the form of learning outcomes for the programme and for each course. They are achieved through a number of assessment strategies that are appropriate to the outcomes being assessed. The Panel reviewed evidence of students outcomes evaluation that uses a number of instruments such as direct assessment, exit surveys, practicum, and final year project.
- 4.2 AMA-IUB has a benchmarking policy and a set of procedures for six levels of benchmarking in place. Starting from institutional level, to college, to programme, to department, to course, down to topic. CCS has indicated that benchmarks and reference points for the programme include Accreditation Board for Engineering and Technology (ABET) Standards, ACM Standards and QAA-UK Subject Benchmark Statements for Computing. However, the drive for international comparison is causing the College to lose sight of more local issues such as the abilities of the students admitted to the programme. The Panel recommends that when the programme is revised next it to be benchmarked at all levels with similar programmes offered locally, regionally, and internationally.
- 4.3 The programme is guided by the Institutional Policy on Teaching, Learning and Assessment. The students are aware of the assessment policies and procedures. In addition, the CCS has strategic assessment arrangements to ensure that there is a matching of assessment and learning outcomes. Interviews with staff indicated that a Continuous Quality Improvement (CQI) committee was established to monitor the consistency of implementation and review of these assessment policies. The Panel received evidence suggesting that faculty committees (CQI and Faculty Committee on Evaluation (FCE)) are established by the college to consider the assessment and evaluation of Student Outcomes (SOs) and these committees attempt periodically to measure attainment of these outcomes by the students. However, the existing policy and procedure does not ensure the alignment of assessments to ILOs for courses. It is based on a sampling process of students outcomes, internal evaluation of senior projects, practicum evaluation, and students surveys. The deficiencies in meeting course ILOs were apparent while examining existing and recently graduated students' work. The Panel recommends that CCS ensure that assessments are rigorous and meet the set course ILOs, especially at the higher levels.
- 4.4 The programme implements the Institution Policy on Examination Moderation that includes arrangements for Internal Moderation and External Examining. Student achievements are determined and monitored through an internal moderation process whereby a moderator examines students' scripts to ensure that the marks provided

are fair and appropriate. However, members of the Panel saw no evidence that assessment instruments are moderated. The Panel recommends that the Examination Moderation policy be reviewed to ensure that all assessments are checked internally for correctness and conformance to the ILOs before being used.

- 4.5 The Examination Moderation Policy is in place whereby arrangements for external examiners for courses are provided. During the site visit, the Panel interviewed the designated external examiner for the courses. However, the external examiner is not responsible for checking assessments other than the final year project. The Panel recommends that reports on all assessments should be sent to the external examiners and they should be required to moderate assessments in each course and report back to the college.
- 4.6 The programme needs to use the arrangements for internal and external moderations to ensure suitable mechanisms for equivalencies of students' knowledge, skills and competencies. The feedback received from the external examiner does not confirm that the students' achievement is equivalent and comparable to students of similar programmes in Bahrain, in the region and internationally. This is evident in the poor practice to assess course ILOs and in the similarly poor achievements of the ILOs by the students. The Panel examined during the site visit samples of students' examinations for the required courses, and found the level of assessment to be inappropriate. Students' critical thinking and analytical skills are not evident in higher level courses. Greater depth-of-knowledge, critical thinking, analysis and more testing of their application is required. The Panel recommends that external examiners should be given a more active role in the moderation of assessment instruments and assessment results.
- 4.7 Cohort analysis of currently enrolled students indicate a relatively poor retention rate, while those who graduated from the programme showed some disparity in terms of length of study period. The Panel recommends that the College undertake an analysis of the retention rate on the programme to understand why there is considerable variation in the length of study period of students and determine whether there is a connection with students in work.
- 4.8 There is a fully developed Work-based Learning Policy and Procedures that include assessment arrangements to ensure that the learning experience is appropriate. A Practicum adviser is assigned to coordinate the Practicum activities with the company supervisor. The Panel found clear evidence of the value that it adds to the programme through interviews with alumni and employers. The skill-based performance evaluation rubrics accomplished by the Practicum supervisor toward the ends of students' internships provides coherence of learning outcomes to assessment.

- 4.9 The programme has established a Programme Industry Advisory Panel (PIAP) with roles of responsibilities. The PIAP is composed of five members including discipline experts, a number of employers and alumni. The Panel finds that this formal structure provides an opportunity to solicit feedback from external advisers ensuring its relevance and adaptability to the needs of the community. However, in interviews the Panel found that the PIAP members were not able to articulate clearly their critical roles in programme development and enhancement. The Panel recommends that the College should engage more fully with the PIAP to maximize fully the functions of this advisory board.
- 4.10 There is evidence that the programme conducts alumni and employer satisfaction surveys periodically. The documents show alumni survey results from 2005-2009 and results from employers for 2005-2011. The results show that alumni are satisfied with the education they gained from the BSCS and that the employers are also satisfied with the programme graduates attributes. During the site visit the Panel met with few employers of the BSCS graduates who are generally satisfied with their employees.
- 4.11 In coming to its conclusion regarding the Academic Standards of the Graduates, the Panel notes, *with appreciation*, the following:
- The Practicum is effectively implemented.
- 4.12 In terms of improvement, the Panel **recommends** that the College should:
- ensure that assessments meet the set course ILOs
 - ensure that the programme when revised next it is benchmarked at all levels and brought in line to similar programmes offered locally, regionally, and internationally
 - review its assessment policies to ensure that all assessments are checked internally for correctness and conformance to the ILOs before being used
 - review the examination moderation policy so that samples of all courses are moderated
 - review its policy so that the external examiner takes a more active role in the moderation of assessment instruments and assessment results
 - undertake a detailed study and analysis of the retention rate on the programme
 - maximize fully the functions of the PIAP.

4.13 **Judgement**

On balance, the Panel concludes that the programme **does not satisfy** the Indicator on **Academic Standards of the Graduates**.

5. 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.

- 5.1 AMA-IUB has established and implements many policies, procedures and regulations that are generally applied consistently across the College. However, the Panel has some concerns on how effective some of these are. The Panel recommends that the CCS develop and implement a mechanism to monitor the effectiveness of its policies and procedures.
- 5.2 During interviews with faculty members and programme management, the Panel learned that decision making in the college is driven top down rather than through consultation with faculty members. Currently, faculty members involvement and contribution to the programme development and improvement is minimal. As a result, decision making is not always effective. In particular, the Panel recommends that the programme management consistently consult all faculty members rather than informing them about decisions to be implemented.
- 5.3 There is a quality assurance management system that is implemented across the college. This attempts to ensure that, at all levels of the college, there are feedback mechanisms so that activity can be reviewed in a timely manner and appropriate action can be taken for improvement where necessary. However, the Panel found that the quality assurance system is not well understood by all staff as it is centralized and on many occasions based on an *ad hoc* process. For example, many of the recent changes to the curriculum have been imposed from the top management hierarchy within the college with little support from faculty members. The Panel recommends that the college monitor the implementation of the quality management system and ensures the involvement of all stakeholders in this process.
- 5.4 There is a policy and procedure for the development of new programmes to ensure the programmes are relevant. The process includes research, engagement of content experts, consultation with the PIAP, and benchmarking. The CCS presented evidence of consulting the PIAP and external examiners for the development of the new 2012–2013 curriculum. However, the College has deviated from this policy by introducing multiple changes to the curriculum without properly assessing its readiness such as the availability of specialized faculty members and the level of admitted students. The Panel recommends that the College adhere to its own policy and timescales for programme development, review and enhancement.

- 5.5 There is a policy and procedures in place for periodic reviews of the programme. These involve the College Curriculum Review Committee (CCRC) preparing a proposal for revision incorporating the results of market research, academic benchmarking, and consultative meetings with internal and external stakeholders. It is then submitted to the college management for approval and submitted for further approvals of the Head of Academic Affairs and University President. However the 2010-2011 curriculum plan did not undergo a periodic review process in line with this policy, but was superseded by a new curriculum a year later in 2011-2012 which was further superseded by a new curriculum a year later in 2012-2013. The specified periodic review cycle is three years, but none of the recent curriculums has undergone such a process because of their constant replacement. In the Panel's view these are additional violations to the College's own policy for programme development, review, and enhancement to that mentioned in the previous section.
- 5.6 There are mechanisms for collecting feedback from students, alumni and employers. Feedback from students is obtained *via* the Student Satisfaction Surveys and the Senior Exit Surveys carried out at the end of each trimester. Alumni and Employer surveys are carried out annually. These surveys are expected to feed into the programme review process, however there are no mechanisms in place to inform the stakeholders on findings and improvements. The Panel recommends that the CCS develop and implement a policy and procedures to communicate findings and improvements to the different stakeholders.
- 5.7 During interviews with staff members, the Panel was informed that the CCS supports its staff to participate in activities such as, attending international conferences, local workshops such as those conducted by HEC, and in obtaining professional certifications, such as Cisco certificates. However, there is no individual needs assessment for staff development upon which development activities can be based. The Panel recommends that more effort needs to be done in this area to bring the level of faculty to international standards such as assisting faculty members that are currently pursuing PhD degrees.
- 5.8 There is limited scoping of the labour market *via* contact with employers to ensure that the programme is up-to-date. The Panel learned from interviews with faculty members and submitted evidence that this is carried out during discussions with PIAP in their regular meetings and in contact with industry during practicum visits. Therefore, the Panel recommends CCS to widen the area it is scoping including private and public sectors and to diversify its sources of data to inform this process.
- 5.9 In coming to its conclusion regarding the Effectiveness of Quality Management and Assurance, the Panel notes, *with appreciation*, the following:
- There are established policies, procedures and regulations that are applied across the college.

- There are effective mechanisms in place for collecting feedback from students, alumni and employers.

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

- develop and implement a mechanism to monitor the effectiveness of its policies and procedures
- develop and implement an inclusive decision-making process
- ensure that it adheres to its own policy and timescales for programme development, review and enhancement
- develop and implement a policy and procedures to communicate findings and improvements to the different stakeholders
- increase professional development activities for faculty members in areas of real academic value
- widen the area of labour market scoping including private and public sectors and to diversify its sources of data.

5.11 **Judgement**

On balance, the Panel concludes that the programme **does not satisfy** the Indicator on **Effectiveness of Quality Management and Assurance**.

6. 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/QQA *Programmes-within-College Reviews Handbook, 2012*:

There is no confidence in the Bachelor of Science in Computer Science of College of Computer Studies offered by the AMA International University Bahrain.