

GENERAL NOTES

This document is a proposed revised version of Section 8.0 and Appendix C of the EAC Manual 2012, and currently being uploaded on EAC's website. It should serve only as **guidelines** and is intended to provide better guidance to IHLs in order to enhance the quality of Self-Assessment Report (SAR), supporting documents, and evidences for accreditation of programmes. Even though this document is very structured in nature, it is hoped that they do not create a perception amongst IHL staff that the emphasis for the submission documents is on quantitative data and pointers to pre-existing documents and publications, rather than qualitative discussion and reflective comment against the accreditation criteria. These documents serve only as non-binding guidelines for the reference of IHLs. The EAC expects better quality Self-Assessment Report (SAR) to be submitted by IHL with substantial discussion or critical reflection and reflective discussion on the many aspects of the accreditation criteria.

8.0 Accreditation Documents

8.1 Introduction

The IHL applying for accreditation must submit documents that provide accurate information and sufficient evidence for the purpose of evaluation. It should not be necessary to develop extensive documentation specifically for accreditation evaluation, since the purpose of accreditation is to evaluate the systems already in place.

For each programme to be accredited or approval, unless otherwise stated, the IHL shall submit the following documents:

- i. Self-Assessment Report (as noted in Section 8.2) – Hardcopy and digital format.
- ii. Supporting Material Documents (as noted in Section 8.3) – Digital format.
- iii. Appendix C (Checklist of Documents for Accreditation/Approval of New Programme and Relevant Information).

The Institutional Documents and Additional Documentation (as noted in Section 8.4) are to be made available during the visit.

8.2 Self-Assessment Report – Hardcopy/Digital Format

A Self-Assessment Report (SAR) is an account of the IHL's plan, implementation, assessment and evaluation of the programme conducted. It reflects the processes with results obtained used in Continual Quality Improvement (CQI) at all levels of the programme's activities. This appropriately bound document, ranging between 50 – 100 pages with all pages numbered and a table of contents, shall provide the information and description about the programme to enable the Evaluation Panel to objectively assess the programme for the purpose of accreditation or approval. The emphasis shall be on qualitative description of each aspect and criterion, and how these meet the standards and expectation as set out in this Manual. In other words, this summary document is a form of Self-Assessment of the IHL's programme.

The general structure of the SAR shall follow the guidelines as described in Sections 8.2.1 to 8.2.9 in conjunction with Appendix C of the Manual. Appendix G provides some prescribed formats for the information. EAC is in no way trying to be prescriptive.

The submission must be comprehensive, easily readable, free standing, and provide a coherent overview with the text addressing each major point in a definitive manner. It must be concise but in sufficient depth and detail in conjunction with the supporting information to appropriately represent the programme. It will not be sufficient to merely provide a collection of disparate items, or point to a web site, and leave the EAC to find the relevant information. The IHL is advised to provide accurate information as required by the Accreditation Manual, since the Evaluation Panel will verify the information during the visit.

8.2.1 General Information and Programme Accreditation History

- (i) Provide general information on the IHL and the specific programme.
- (ii) Provide detailed information on programme history of accreditation (year of accreditation, conditions imposed and actions taken).
- (iii) Describe any self-initiated changes made to the programme and state the year the changes were introduced.

8.2.2 Programme Objectives (PEOs)

- (i) State the vision and mission of the IHL and/or faculty.
- (ii) Describe the PEOs and state where they are published.
- (iii) Describe how the PEOs are consistent with the vision and mission of the IHL and/or faculty and stakeholder requirements.
- (iv) Describe the processes used to establish/formulate/define and review the PEOs, and the extent to which the programme's various stakeholders are involved in these processes.
- (v) Describe how the IHL ensures achievement of the PEOs.
- (vi) Describe the ongoing evaluation of the level of achievement of these PEOs by graduates/alumni, and the extent to which programme's various stakeholders are involved in these processes.
- (vii) Describe results of PEOs achievement by graduates/alumni.
- (viii) Describe how the results obtained from the PEOs evaluation are being used in the CQI to improve the effectiveness of the programme, and the extent to which programme's various stakeholders are involved in these processes.
- (ix) Describe any strength related to PEOs.
- (x) Describe further planned CQI actions in relation to PEOs to be implemented.

- (xi) Self-assess on programme performance related to PEOs based on the following scale (with justifications):

*Poor/Satisfactory/Good

8.2.3 Programme Outcomes (POs)

- (i) List down the POs and state where they are published.
- (ii) Describe how the POs relate to the PEOs.
- (iii) Describe how the POs encompass the POs requirements of Section 4.0 of this Manual.
- (iv) Describe the POs by giving definition/performance indicators of each PO explicitly (PO by PO). In other words, give the programme's expectation of measurable students' ability to be achieved in each PO.
- (v) Describe the processes used to establish/formulate/define and review the POs, and the extent to which the programme's various stakeholders are involved in these processes.
- (vi) Describe the overall big-picture planning to deliver and assess the POs, and the processes undergone in establishing the plan. This may include courses to POs mapping matrix showing courses mapped to relevant POs, with some courses probably only to deliver, while some are to deliver and contribute to assessment, etc. Describe the indicators adopted in the matrix.

The overall 'Courses to POs' sample matrix in Appendix G of the Manual to identify and track the contribution of the courses to the POs may be referred to as a guiding template.

- (vii) Describe the processes to ensure successful execution of the plan described in (vi) above, involving Planning, Doing, Checking and Acting (PDCA) until CQI both at course and programme levels.

Include the 'What, Who, Where, Why, When, and How?' of each process.

- (viii) Describe the method/model to calculate individual students' achievement of each PO.
- (ix) Describe the individual graduating student's POs achievement 'pass/fail' indicator(s).
- (x) Describe the programme's 'POs delivery' performance indicator(s), i.e. how to decide whether the programme has performed or not in delivering students' achievement of the POs.
- (xi) Describe any POs related established management system (computer software etc.).
- (xii) Describe the evidences and results of POs achievement by students (especially graduating ones). For programmes on new-cycle accreditation, it is expected at least results for two (2) different cohorts are discussed. Critically analyse and evaluate the results.

- (xiii) Describe how the results of assessments and evaluations in Item (xii) above are used for the CQI at both courses and programme levels in a harmonised and holistic manner, and how these processes have driven continual or sustained improvement (involving at least a few cohorts of students) of the programme.
- (xiv) Describe the extent to which the programme's various stakeholders are involved in the POs' assessment, evaluation, and CQI processes.
- (xv) Describe any strength related to POs.
- (xvi) Describe further planned CQI actions to be implemented.
- (xvii) Self-assess on programme performance related to POs based on the following scale (with justifications):

*Poor/Satisfactory/Good

8.2.4 Academic Curriculum

- (i) Describe the programme structure and course contents to show how they are appropriate to, consistent with, and support the development of the range of intellectual and practical skills and attainment or achievement of the POs, and how they meet the EAC requirements in terms of minimum total credits, minimum credits for engineering courses, covering the broad areas of Engineering sciences, principles, and applications of the respective disciplines (as per Appendix B EAC, Manual 2012), knowledge profile, etc. The information required to be provided in this part of the SAR should include but is not limited to the following:
 - A matrix linking courses to POs to identify and track the contribution of each course to the POs. This is linked to the Courses to POs mapping matrix Section 8.2.3 (vi) requested earlier.
 - Distribution of the engineering courses according to areas specific to each programme (refer to Appendix B underpinning Engineering Sciences, Principles, and Applications).
 - Distribution of the related non-engineering (general education) courses.
 - Distribution of the courses offered according to semester.
(Note: Samples of above table formats are available in Appendix G).
 - Distribution of the courses according to the Knowledge Profile (refer to IEA Graduate Attributes and Professional Competencies: Version 3: June 2013 that has now superseded relevant sections in Appendix B of the EAC Manual 2012 with some minor corrections).
- (ii) Describe the programme delivery and assessment methods and how these are appropriate to, consistent with, and support the development of the range of intellectual and practical skills and attainment or achievement of the POs.
- (iii) Describe steps taken by the programme to ensure sufficient breadth and depth of professional engineering education and implementation of Complex

Problem Solving (CPS) and Complex Engineering Activities (CEA) in reference to the requirement of CPS and CEA as stipulated in the IEA Graduate Attributes and Professional Competencies: Version 3: June 2013 that has now superseded relevant sections in Appendix B of the EAC Manual 2012 with some minor corrections).

- (iv) Describe actual implementation of Complex Problem Solving (CPS) and Complex Engineering Activities (CEA). Cite examples of CPS and CEA.
- (v) Describe laboratory exercises, related POs, and approach to deliver and assess. Give examples of open-ended laboratories.
- (vi) Describe industrial training scheme and related POs. Cite examples of industrial training experiences.
- (vii) Describe exposure to professional practice and related POs. Cite some examples of exposure to professional practice activities.
- (viii) Describe Final Year Projects (FYP), related POs, and how FYP fulfils the specific requirements stipulated in the Manual.
- (ix) Describe Integrated Design Projects (IDP), related POs, and how IDP fulfils the specific requirements stipulated in the Manual.
- (x) Describe the 'Condition for Passing Courses', and how the programme fulfils the specific requirements stipulated in the Manual.
- (xi) Describe any strength related to Academic Curriculum.
- (xii) Describe the extent to which the programme's various stakeholders are involved in the curriculum development and review processes.
- (xiii) Describe further planned CQI actions in relation to Academic Curriculum to be implemented.
- (xiv) Self-assess on programme performance related to Academic Curriculum based on the following scale (with justifications):

*Poor/Satisfactory/Good

8.2.5 Students

- (i) Describe the distribution of students' enrolment for all academic years for the past four years (refer to Table 6 in Appendix G).
- (ii) Describe the entry qualifications for final year students of the current year (refer to Table 7 in Appendix G).
- (iii) Describe the requirement and process for admission of students to the programme.
- (iv) Describe the policies and processes for credit transfer/exemption.
- (v) Describe students' counselling services.
- (vi) Describe students' workload.

- (vii) Describe students' activities and involvement in student organisations that provide experience in management and governance, representation in education and related matters and social activities.
- (viii) Describe students' performance in relation to POs from overall holistic perspective involving both curricular and co-curricular activities, such as winning competitions and awards, etc.
- (ix) Describe any strength related to Students.
- (x) Describe further planned CQI actions in relation to Students to be implemented.
- (xi) Self-assess on programme performance related to Students based on the following scale (with justifications):

*Poor/Satisfactory/Good

8.2.6 Academic and Support Staff

- (i) Describe the adequacy and competencies of the academic staff in covering all curricular areas of the programme, and in implementing the Outcome-Based Education (OBE). The overall competence of Academic staff is viewed from their diversity of background, academic qualification, academic and professional practice experiences, including their track record in teaching, research, publications, administration and service to the society, ability to communicate, enthusiasm for developing more effective programmes, level of scholarship, participation in professional societies and attainment of Professional Engineer status or as Corporate Members of Learned Bodies.
- (ii) Describe how the overall staff workload enables effective teaching, student-staff interaction, student advising and counselling, IHL service and research activities, professional development and interaction with industries.
- (iii) Describe sufficiency and competency of technical and administrative staff in providing adequate support to the educational programme.
- (iv) The information required in items (i) to (iii) should include but is not limited to the following:
 - A breakdown in terms of numbers of academic staff (full-time, part-time and inter-programme) by year for the past four years (Table 8 in Appendix G).
 - An analysis of all academic staff (Table 9 in Appendix G).
 - A summary of the academic qualifications of academic staff (Table 10 in Appendix G).
 - A summary of the professional qualifications and membership in professional bodies/societies of academic staff (Table 11 in Appendix G).
 - A summary of the posts held by full time academic staff (Table 12 in Appendix G).

- A summary of teaching workload of academic staff for the current semester (Table 13 in Appendix G).
 - An analysis of all support staff (Table 14 in Appendix G).
 - A summary of the posts held by support staff (Table 15 in Appendix G).
 - The staff: student ratio by year for all academic years for the past four years (Table 16 in Appendix G).
 - A listing of lecturers/invited speakers from industry/public bodies and their level of involvement.
- (v) Describe the implemented professional training scheme and incentives for academic staff. List down academic staff who have undergone or still undergoing training. Provide future projected professional training programme.
- (vi) Describe any strength related to Academic and Support Staff.
- (vii) Describe further planned CQI actions in relation to Academic and Support Staff to be implemented.
- (viii) Self-assess on programme performance related to Academic and Support Staff based on the following scale (with justifications):

*Poor/Satisfactory/Good

8.2.7 Facilities

- (i) Describe the adequacy of teaching and learning facilities such as classrooms, learning-support facilities, study areas, information resources (library), computing and information-technology systems, laboratories and workshops, and associated equipment to cater for multi-delivery modes.
- (ii) For programmes offered wholly or partly in distance mode, or at multiple or remote locations, describe how the facilities provided are equivalent to those provided for on-campus students.
- (iii) Describe the adequacy of support facilities such as hostels, sport and recreational centres, health centres, student centres, and transport in facilitating students' life on campus and enhancing character building.
- (iv) The information required in items (i) to (iii) should be provided in the supporting documents but is not limited to the following:
- A summary, in tabulated form, of the lecture facilities (give number, capacity, and audio video facilities available).
 - A summary, in tabulated form, of the laboratories (list down the equipment available in each laboratory).
 - A summary, in tabulated form, of the workshops (list down the equipment/machinery available in each workshop).

- A summary, in tabulated form, of the computer laboratories (list down the hardware and software available).
 - A summary, in tabulated form, of the other supporting facilities such as the library (list down the titles of books/journals/magazines/standards of relevance to the programme).
 - A summary, in tabulated form, of recreational facilities.
 - A summary, in tabulated form, of information on recent improvements and planned improvements in these facilities.
- (v) Describe procedures and monitoring of health and safety aspects of facilities including lecture halls, laboratories, equipment, etc. Describe further planned CQI actions in relation to Facilities to be implemented.
- (vi) Describe maintenance and calibration aspects of facilities and equipment/apparatus in the laboratories or elsewhere.
- (vii) Describe any strength related to Facilities.
- (viii) Describe further planned CQI actions in relation to Facilities to be implemented.
- (ix) Self-assess on programme performance related to Facilities based on the following scale (with justifications):

*Poor/Satisfactory/Good

8.2.8 Quality Management Systems

- (i) Describe the Quality Management Organisation to oversee and monitor the overall achievement of the programme. Include the QMS organisational chart for the IHL and programme.
- (ii) Describe the commitment and level of adequacy of institutional support, operating environment, and financial resources in assuring (i) quality and continuity of the programme, (ii) well-qualified academic and support staff attracted, retained, and rewarded, and (iii) facilities and equipment acquired, maintained, and operated. These can be reflected through IHL's vision and mission statements, strategic plans, constructive and high qualified and experienced leadership and senior staff in sufficient numbers, adequate policies (e.g. policies related to appointing, retaining and rewarding well-qualified staff, provision of professional development, staff training, etc.), mechanisms and budget (capital and operating) that can drive quality and continuity of programme including maintaining and updating infrastructure and support services to achieve PEOs and assure continuity of the programme.
- (iii) Describe the mechanism for programme quality management and planning involving curriculum development, curriculum and content review, responding to feedback and inputs from stakeholders including Industry Advisory Panel (IAP), students and alumni; tracking the contribution of individual courses to the POs; tracking outcomes of performance through assessment; responding to

External Examiners, etc. comments; reviewing of PEOs and POs; and Continual Quality Improvement (CQI). Where these are discussed elsewhere in the report, specify their locations. For a new programme, the IHL also needs to discuss the processes surrounding the decision to introduce the programme.

- (iv) Summarise External Examiners' reports and IHL's responses to comments made, and how the programme has benefited from them.
- (v) Describe Quality Management Systems (QMS) for quality assurance of (not limited to):
 - System for Examination Regulations including Preparation and Moderation of Examination Papers: The programme has established a working system for examination regulations including preparation and moderation of examination papers.
 - System of Assessment for Examinations, Projects, and Industrial Training: The programme has established a working system for assessment of examinations, projects, industrial training and other forms of learning delivery. The scope of assessment is wide enough to cover the achievement of POs.
 - System for student admission and teaching and learning: The programme has established a working system for student admission and teaching and learning.

Quality assurance can be reflected through proper and sufficient policies/rules/regulations/ procedures in the Department/Faculty or IHL, and whether those systems are implemented.

There should be a review carried out on the benchmarking visit and report highlighting differences, lesson learn, best practices etc. The IHL should also deliberate on how the outcome of the benchmarking exercise has contributed to the CQI of the programme.

- (vi) Describe any strength related to Quality Management Systems (QMS).
- (vii) Describe further planned CQI actions in relation to Quality Management Systems (QMS).to be implemented.
- (viii) Self-assess on programme performance related to Quality Management Systems (QMS).based on the following scale (with justifications):

*Poor/Satisfactory/Good

8.3 Supporting Material Document – Digital Format

The supporting documents are evidences to substantiate claims made in the SAR by IHL. These documents are to be submitted in digital format as Appendices to the SAR as follows:

8.3.1 General Information and Programme Accreditation History

- (i) Provide official publications relating to the Faculty/School/Department/Programme, undergraduate prospectus and other information accessible through website.
- (ii) Provide programme's previous accreditation history, reports, relevant letters, and other relevant documents.

8.3.2 Programme Objectives (PEOs)

- (i) Provide documented evidences of publication of vision and mission statements.
- (ii) Provide documented evidences of publication of PEO statements.
- (iii) Provide blank questionnaires/survey forms and/or other tools used to establish/formulate/define and review the PEO.
- (iv) Provide minutes of meetings and/or other documented evidences of processes to establish/formulate/define and review the PEO, and involvement of various internal and external stakeholders.
- (v) Provide minutes of meetings, briefing notes, report of workshops, management instructions to staff, and other documented evidences of steps taken by IHL to ensure achievement of PEO.
- (vi) Provide blank questionnaires/survey forms and/or other tools used to evaluate achievement of the PEO.
- (vii) Provide minutes of meetings and/or other documented evidences of involvement of various internal and external stakeholders in the processes to evaluate achievement of the PEO.
- (viii) Provide minutes of meetings and/or other documented evidences of results obtained from the evaluation are being used in the CQI to improve the effectiveness of the programme, and the extent to which the programme's various stakeholders are involved in these processes.
- (ix) Provide documented evidences of PEO related strengths.
- (x) Provide documented evidences of further planned CQI actions in relation to PEO to be implemented.

8.3.3 Programme Outcomes (POs)

- (i) Provide documented evidences of publication of PO statements.
- (ii) Provide blank questionnaires/survey forms and/or other tools used to establish/formulate/define and review the PO.
- (iii) Provide minutes of meetings and/or other documented evidences of the processes to establish/formulate/define and review the PO, and involvement of various internal and external stakeholders.
- (iv) Provide documented evidences of published overall 'Courses to PO' matrix.
- (v) Provide minutes of meetings, management instructions to staff, training workshop reports and materials, briefing notes, reminders, calendars, and/or other documented evidences of serious monitoring of the implementation of the 'Courses to POs' matrix (Item 8.2.3(vi)), etc.
- (vi) Provide sufficient data to demonstrate actual students' PO marks computation.
- (vii) Provide sufficient data to demonstrate actual students' PO achievement computation.
- (viii) Provide sufficient data to demonstrate actual students' PO 'pass/fail' determination.
- (ix) Provide documented evidences of established PO management system (computer software etc.).
- (x) Provide sufficient data to demonstrate actual students' works to reflect deliveries, assessments and achievement of each PO explicitly. In other words, prepare portfolio for each PO.
- (xi) Provide sufficient data to demonstrate the results of assessments and evaluations in are used for the CQI of the programme.
- (xii) Provide minutes of meetings and/or other documented evidences showing programme's various stakeholders are involved in the PO's assessment, evaluation, and CQI processes.
- (xiii) Provide documented evidences showing PO related strengths.
- (xiv) Provide documented evidences showing further planned CQI actions in relation to PO to be implemented.

8.3.4 Academic Curriculum

- (i) Provide documented evidences of multi-delivery and multi-assessment including non-traditional approaches in the Teaching and Learning processes.
- (ii) Provide minutes of meetings, management instructions to staff, training workshop reports and materials, briefing notes, reminders, calendars, CPS and CEA performance indicators, moderation form for taxonomies of assessments, and/or documented evidences showing steps taken to ensure

breadth and depth of professional engineering education, and CPS and CEA being implemented in the programme.

- (iii) Provide documented evidences showing programme implementation of CPS and CEA within the Teaching and Learning processes.
- (iv) Provide list of laboratory work titles and documented evidences showing open-ended laboratory works.
- (v) Provide list of industrial training companies.
- (vi) Provide list of exposure to professional practice activities and sample students' reports.
- (vii) Provide list of final-year project titles.
- (viii) Provide design (integrated/capstone) project's synopsis and learning outcomes and Course to POs matrix.
- (ix) Provide documented evidences showing programme implementation of the 'Condition for Passing Courses' clause stipulated in the Manual.
- (x) Provide documented evidences showing Academic Curriculum related strengths.
- (xi) Provide minutes of meetings and/or other documented evidences showing programme's various stakeholders are involved in the curriculum development and review processes.
- (xii) Provide documented evidences showing further planned CQI actions in relation to Academic Curriculum to be implemented.

8.3.5 Students

- (i) Provide documented evidences showing the policies and processes for credit transfer/exemption.
- (ii) Provide documented evidences showing students' counselling services.
- (iii) Provide documented evidences showing students' involvement in student organisations that provide experience in management and governance, representation in education and related matters, non-academic or co-curricular activities, and social activities.
- (iv) Provide documented evidences showing students' performance in relation to PO from an overall holistic perspective, from both curricular and co-curricular activities, such as winning competitions and awards, etc.
- (v) Provide documented evidences showing Students related strengths.
- (vi) Provide documented evidences showing further planned CQI actions in relation to Students to be implemented.

8.3.6 Academic and Support Staff

- (i) Provide documented evidences of staff OBE understanding and implementation training, as well as other training such as effective communication ability, teamwork, leadership, etc.
- (ii) Provide documented evidences on the participation of academic staff, support staff and students in the Continual Quality Improvement (CQI) processes.
- (iii) Provide documented evidences showing participation of academic staff professional training and qualifications, and programme's projection/plan on professional training schemes for academic staff.
- (iv) Provide documented evidences showing Academic and Support Staff related strengths.
- (v) Provide documented evidences of further planned CQI actions in relation to Academic and Support Staff to be implemented.

8.3.7 Facilities

- (i) Provide documented evidences of procedures and monitoring of health and safety aspects of facilities including lecture halls, laboratories, equipment, etc.
- (ii) Provide documented evidences of maintenance and calibration of facilities and equipment/apparatus in the laboratories or elsewhere.
- (iii) Provide documented evidences of Facilities related strengths.
- (iv) Provide documented evidences of further planned CQI actions in relation to Facilities to be implemented.

8.3.8 Quality Management Systems (QMS)

- (i) Provide documented evidences of the adequacy and commitment of institutional support, operating environment, and financial resources in ensuring (i) quality and continuity of the programme, (ii) well-qualified academic and support staff attracted and retained, and (iii) facilities and equipment acquired, maintained, and operated. Also, provide documented evidences of the development of staff through opportunities in further education, industrial exposure, as well as research and development.
- (ii) Provide documented evidences of the systematic mechanism for programme planning, curriculum development, and regular review of curriculum and content, content and involvement of of the on-going participation of industry advisors in discussions and forums, professional practice exposure, and collaborative projects.
- (iii) Provide letters of appointment of IAP and relevant committees.
- (iv) Provide External Examiners' reports.

- (v) Provide letters of appointment of External Examiner(s).
- (vi) Provide documented evidences of Quality Management Systems (QMS) for quality assurance.
- (vii) Provide documented evidences of Quality Management Systems (QMS) related strengths.
- (viii) Provide documented evidences of further planned CQI actions in relation to Quality Management Systems (QMS) to be implemented.

8.4 Institutional Documents and Additional Documentation to be Made Available during the Visit

The Institutional Documents and Additional Documentation are to be made available during the visit in hard copies or other tangible forms. They are to support the information/evidences requested in Sections 8.2 and 8.3 as follows:

8.4.1 General Information and Programme Accreditation History

- (i) Provide handbook, undergraduate prospectus, academic calendar, and other official publications (if any) relating to the Faculty/School/Department/Programme not provided in the SAR or CD. Provide programme's previous accreditation history, reports, relevant letters, and other relevant documents.

8.4.2 Programme Objectives (PEOs)

- (i) Provide responded questionnaires and/or survey forms and other documented evidences of involvement (if any) of various internal and external stakeholders in the processes to establish/formulate/define and review the PEO.
- (ii) Provide additional documented evidences (if any) showing IHL's processes to ensure PEO achievement.
- (iii) Provide responded questionnaires or survey forms and other documented evidences (if any) of involvement of various internal and external stakeholders in the processes to establish/formulate/define and review the PEO.
- (iv) Provide additional documented evidences (if any) showing results obtained from PEO achievements evaluation are being used to improve the effectiveness of the programme, and external stakeholders in the processes to evaluate achievement of the PEO.
- (v) Provide additional documented evidences (if any) showing PEO related strengths.
- (vi) Provide additional documented evidences (if any) showing further planned CQI actions in relation to PEO to be implemented.

8.4.3 Programme Outcomes (POs)

- (i) Provide OBE/PO Manual (if available) containing guidelines for PO implementation including definitions, performance indicators, delivery and assessments approaches, PO marks computing model, PO achievement indicators, etc.
- (ii) Provide responded questionnaires or survey forms and/or other documented evidences of involvement (if any) of various internal and external stakeholders in the processes to establish/formulate/define and review the PO.
- (iii) Provide actual detailed 'Course Outcomes (CO) to PO' matrix compiled for all courses.
- (iv) Provide full report on actual students' PO marks computation.
- (v) Provide full report on actual students' PO achievement computation.
- (vi) Provide full report on actual programme's PO delivery performance computation.
- (vii) Provide actual printouts from PO management system/computer software.
- (viii) Provide full report/portfolio of each of the 12 EAC PO's at programme or 'big-picture' level (PO by PO separately) containing definition, performance indicators, delivery and assessment processes, results, analysis and evaluation of results. To include actual students works – related to delivery and assessment processes.
- (ix) Provide CQI reports, publications, and other documented evidences showing how the results of assessments and evaluations in D12 are used for the CQI at both courses and programme in a harmonised and holistic manner, and how these processes have driven continual or sustained improvement (involving at least for two or three cycles of assessments) of the programme.
- (x) Provide additional documented evidences (if any) showing programme's various stakeholders are involved in the PO's assessment, evaluation, and CQI processes.
- (xi) Provide additional documented evidences (if any) showing PO related strengths.
- (xii) Provide additional documented evidences (if any) showing further planned CQI actions in relation to PO to be implemented.

8.4.4 Academic Curriculum

- (i) Provide course files – for every course offered by the programme, provide the course information to include the targeted course learning outcomes, a matrix linking course outcomes to POs, course synopsis/syllabus, and a list of references (texts used). Final examination papers complete with answer scheme and graded examination papers with low, medium and high grades are also to be provided. Any information with regard to other learning

activities and assessment measures such as projects, quizzes, tutorial questions, assignments, class projects, copies of the course notes (optional), and any other materials used for the course are also to be included. For laboratory courses, provide a copy of the syllabus, experiment instruction sheets, as well as supporting information.

- (ii) Provide training records and materials to enhance Teaching and Learning practices involving academic staff.
- (iii) Provide training and instructional materials and other documented evidences to ensure breadth and depth of professional engineering education, and implementation of CPS and CEA.
- (iv) Provide portfolio of depth, CPS and CEA related tasks.
- (v) Provide laboratories syllabus, experiment instruction sheets, graded student laboratory works with low, medium and high grades, marking schemes/assessment rubrics, as well as other supporting information such as laboratories scheduling for various groups, etc.
- (vi) Provide industrial training reports, guidelines for the training, assessment rubrics/reviews by training providers, as well as the faculty mentors for a sample of students.
- (vii) Provide portfolio of exposure to professional practice activities for the past four years. Include students' reports of professional practice exposure.
- (viii) Provide final-year project reports, instruction sheets, and grade sheets or other evaluations for the project for the past few years.
- (ix) Provide design projects (integrated/capstone) reports.
- (x) Provide additional documented evidences (if any) showing Academic Curriculum related strengths.
- (xi) Provide additional documented evidences (if any) showing programme's various stakeholders are involved in the curriculum development and review processes.

8.4.5 Students

- (i) Documented evidences showing actual selection processes that fulfilled the requirement and process for admission or rejection of students to the programme.
- (ii) Provide credit transfer/exemption policy and records.
- (iii) Provide documented evidences of students' counselling services.
- (iv) Provide portfolio of students' activities and involvement in student organisations that provide experience in management and governance, representation in education and related matters, non-academic or co-curricular activities, and social activities.

- (v) Provide PO related materials from overall holistic perspective, from both curricular and co-curricular activities, such as winning competitions and awards, etc.
- (vi) Provide additional documented evidences (if any) showing Students related strengths.
- (vii) Provide additional documented evidences (if any) showing further planned CQI actions in relation to Students to be implemented.

8.4.6 Academic and Support Staff

- (i) Full curriculum vitae for all academic staff. Provide copies of academic and professional qualifications, as well as certificate of registration as graduate engineer with Board of Engineers. Provide documented evidences showing academic staff professional training and qualifications projection/plan.
- (ii) Provide staff - students consultancy scheduling/timetable, details of counselling services, research projects summary/report, details of professional interaction with industries.
- (iii) Provide professional training reports of academic staff.
- (iv) Provide additional documented evidences (if any) showing Academic and Support Staff related strengths.
- (v) Provide additional documented evidences (if any) showing further planned CQI actions in relation to Academic and Support Staff to be implemented.

8.4.7 Facilities

- (i) Provide additional documented evidences (if any) showing procedures and monitoring of health and safety aspects of facilities including lecture halls, laboratories, equipment, etc.
- (ii) Provide documents containing maintenance and calibration aspects of facilities and equipment/apparatus in the laboratories or elsewhere.
- (iii) Provide additional documented evidences (if any) showing Facilities related strengths.
- (iv) Provide additional documented evidences (if any) showing further planned CQI actions in relation to Facilities to be implemented.

8.4.8 Quality Management Systems (QMS)

- (i) Provide hard copies of all relevant policies on Institutional Support, Operating Environment and Financial Resources, incentives, minutes of meetings, instructions, training programmes, etc. that can demonstrate the commitment of management towards quality and continuity of programme, attracting, retaining, and rewarding staff, and to acquire, maintain and operate facilities and equipment.

- (ii) Provide additional relevant documents related to programme quality management planning, doing, checking and acting, including list and names of committee members, minutes of meetings, publications, programme CQI reports etc.
- (iii) Provide External Examiners' report and record of actions taken or response.
- (iv) Provide QMS, ISO procedures and certificates for relevant processes, and programme benchmarking reports, etc.
- (v) Provide additional documented evidences (if any) showing QMS related strengths.
- (vi) Provide additional documented evidences (if any) showing further planned CQI actions in relation to QMS to be implemented.

9.0 Approval Procedure for a New Engineering Programme

9.1 EAC's Initial Evaluation

The evaluation procedure at this stage shall comprise the following steps:

(a) Application for Approval to Conduct a New Degree Programme

The IHL intending to conduct a new programme shall obtain approval from the relevant authorities.

The IHL should submit the complete set of documents (refer to Section 8 and Appendix C) through MQA for initial evaluation by the EAC. The recommendation from the EAC will be forwarded to the relevant authorities.

When the documents are considered to be inadequate, the IHL shall be required to provide further information before an evaluation is carried out. If the required information is not provided within a specified period, it shall be deemed that the IHL no longer intends to conduct the programme.

(b) Initial Evaluation

The EAC shall appoint an Evaluator to evaluate the proposed programme.

The evaluation shall cover the following areas:

- (i) General awareness of current development in engineering education and engineering practice
- (ii) The stated PEOs and POs
- (iii) Involvement of stakeholders
- (iv) The course content
- (v) The quality of staff, the educational culture
- (vi) The teaching facilities
- (vii) The library/resource centre

- (viii) The IHL's quality systems and processes
- (ix) The assessment procedure and examination rules
- (x) Other related activities.

The evaluation may include a visit to the IHL by the Evaluator.

9.2 Report and Recommendation

The report from the Evaluator shall be submitted to EAC within 4 weeks after the appointment/visit.

9.3 EAC's Decision

Based on the evaluation, EAC may decide on one of the following:

- To recommend approval of the programme to be conducted.
- To recommend conditional approval for the programme to be conducted with the provision that the IHL takes certain actions to rectify all the shortcomings indicated in the report within a specified period as determined by EAC.
- Not to recommend approval.

The recommendation from EAC is specific to the programme, location and mode of study. Where the same programme is offered by the IHL at different locations and/or via different modes of delivery, the IHL shall make a separate application for each of the programmes.