

BOARD OF ACCREDITATION FOR
ENGINEERING AND TECHNICAL EDUCATION


ACCREDITATION MANUAL

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Outline

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- Part 1
 - Introduction to new accreditation manual
 - Major changes in decision process
- Part 2
 - Assessment criteria




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Outcomes-based Accreditation Manual

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- In July 2016, a Task Force was formed for Preparing an **Outcomes-based Accreditation Manual**
 1. Prof. SJM Yasin, CE, BUET [Convener]
 2. Prof. Anisul Haque, EEE, EWU & BAETE [Member]
 3. Prof. Md. Sirajul Islam, CE, NSU [Member]
 4. Dr. Salekul Islam, Head, CSE, UIU [Member]
 5. Prof. AFM Saiful Amin, BAETE & CE, BUET [Member]
- Inputs from Mentors from Singapore and Malaysia
- Effective from 1 July 2017




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Outcome Based Education (OBE)

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- A Shift in Focus
- Program structures & curricula are means, not ends.
- From a Input-Based Approach to an Outcome-Based Approach
- OBE is an educational process
- Directed/focused at achieving certain specified outcomes in terms of individual student learning.
- Outcomes - key things students should understand and be able to do or the qualities they should develop.



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Paradigm shift

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Old paradigm

- Input based assessment
- Quantitative assessment
- CQI not important
- No formal channel for institution to disagree

New paradigm

- Outcome based assessment
- Holistic assessment
- Strong emphasis on CQI
- Institution can correct errors in facts or can appeal



Objectives of accreditation

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- To ensure that graduates acquire a required set of attributes of national and international standards
- Identify specific engineering educational programs that meet national and international standards
- Continual improvement of existing engineering programs through evaluation and feedback.



Sectoral Committees

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- Sectoral Committees for different engineering programs
- Three members, one of whom serves as the Chair, for a period of three years
- Sectoral Committee members should not be a member of a current Evaluation Team or the Board
- Responsibilities:
 - A member may accompany the Evaluation Team for on-site moderation
 - Scrutinize the report submitted by the Evaluation Team
 - Submit independent recommendations and forwards the report of the Evaluation Team to the Board



Appellate Committee

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- Newly introduced, an independent committee
- Three members, including the Chair
- If an institution is not satisfied with the accreditation decision, it may apply for a review
- Members are appointed by the President, IEB after discussion with the Chair of the IEB Ethics Committee
- Selected from former members of the Board, Sectoral Committee members or Chairs of the Evaluation Teams



Who can apply?

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- Program approved by an appropriate authority
- Program duration is four years
- Admission after at least 12 years of schooling
- At least one batch has graduated
- **Program follows Outcome-Based-Education**
- Minimum total credit hours is 130
(1 credit of lecture \geq 750 minutes of formal contact)
(1 credit of lab \geq 1500 minutes of formal contact)



Calculating Minimum Credit Hours

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- For example a 3 credit theory course has 160 minutes/week, a trimester has 13 weeks classes
 - In total, the course has $160 \times 13 = 2080$ minutes
 - This 3 credit theory will be equivalent to 2.77 credit
- Another example a 1 credit lab/sessional course has 150 minutes/week, a trimester has 13 weeks classes
 - In total, the course has $150 \times 13 = 1950$ minutes
 - This 1 credit lab will be equivalent to 1.30 credit
- A program may offer more/less than 130 credits
- 1 credit theory (lab) classes may be more/less than 750 (1500) minutes per semester
- Total credits should be mapped following above example and then must be at least 130 credits.



More clarification

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- The program will apply from its own obligation
- Accreditation to a program not to the institution
- The same program at different campuses must be accredited separately
- The title of the degree must reflect the content of the education and must appear on all formal documents
- The accredited and non-accredited program(s) must be distinguishable through names
- Name/title of an accredited program can not be changed without BAETE's approval



New Provisions

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- **Preliminary evaluation of new programs**
Institution may request BAETE to evaluate strengths, weaknesses, opportunities of a new program when senior most batch in the 2nd year. No approval/disapproval
- **Deferment by a short period (< 1 year)**
Recommended by evaluation team when a deficiency can be corrected quickly

Accreditation from the date of application



Important terminologies

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- Compliance
 - Adequately satisfied the benchmark requirements.
 - No corrective measure is required
- Concern
 - Broadly in compliance but requires improvement
 - Currently in compliance but there is chance for the situation to change, resulting in noncompliance in future.
- Weakness
 - Lacks strength of compliance, leading to compromise the quality of the program.
 - Corrective measures are required
- Deficiency
 - Either does not exist or is in the elementary stage. Compliance is required.



Accreditation decision

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- No marking system
- No grades, like 'A', 'B' or 'C'
- Either 'Accredited' or 'Not Accredited'
- If Accredited then maximum length is 6 years
- Evaluation will be evidence based
- Recommendations of the Evaluation Team must be supported with reasons



Accreditation decision

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Deficiency	Weakness	Decision
None	None	Maximum 6 years
None	Weakness found in not more than three criteria	Shorter than 6 years
Any deficiency identified in any criterion	-	Not Accredited (NA)

An NA program may reapply after 1 year



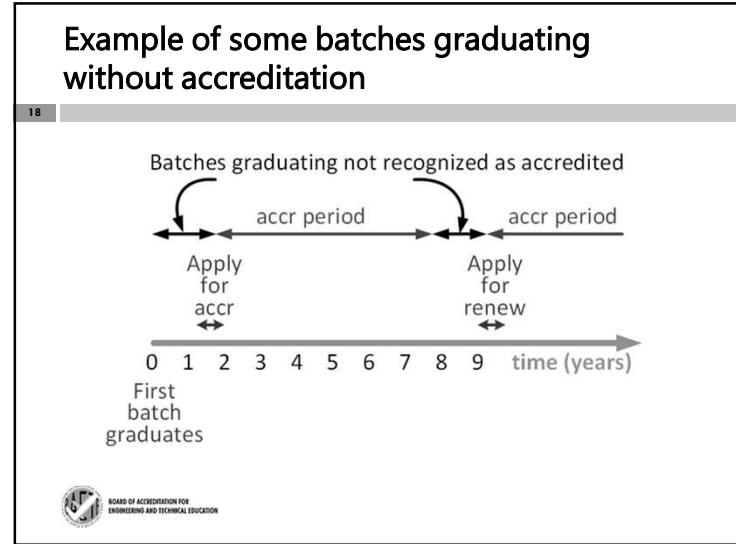
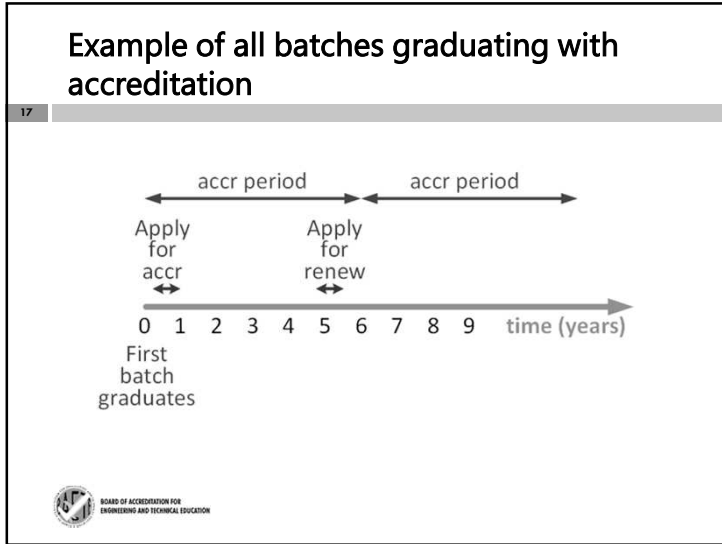
Renewal

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- An accredited program needs to reapply at least 6 months before the expiry of current accreditation
- Application and evaluation processes for renewal are the same as the processes for new application
- SAR needs to describe how shortcomings identified in the previous evaluation have been addressed, particularly through CQI

Failure to apply/reapply on time may lead to graduation of non-accredited batches





Steps in Accreditation Procedure

Steps	Expected time
Formation of evaluation team	3 weeks
Reservation from institution	1 week
On-site visit	12 weeks
Evaluation team report	3 weeks
Scrutiny by sectoral committee	2 weeks
Fact correction by institution	1 week
Recommendation by sectoral committee	2 weeks
Decision of the Board	16 weeks

- ### The Evaluation Team
- Consisting of a Chairperson and two members
 - The Chairperson will be a senior academician or a practicing professional with adequate experience in the accreditation process.
 - At least one of the members will be from the industry.
 - The institution may express reservations about any member identifying any conflict of interest
 - The Evaluation Team members are required to declare possible conflicts of interest

Activities of the Evaluation Team

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- Pre-visit activities
 - ▣ If significant deficiencies are found in the SAR, the Evaluation Team may recommend Not Accredited (NA) before the visit
- Accreditation Visit
 - ▣ Will be discussed in detail during the afternoon session
- Post-visit activities
 - ▣ Submitting the recommendation report



A program will be considered for accreditation only if

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1. Both Institution and Program are approved by an appropriate authority
2. Duration of the program is four years
3. Admission to the program requires a minimum of 12 years of schooling
4. The program follows an outcome-based education approach
5. Minimum 130 credit hours program
6. The VC, Pro-VC and Treasurer are appointed according to the relevant act/statute
7. The statutory bodies (e.g., Syndicate, Academic Council, Finance Committee, Disciplinary Committee, etc.) exist and are functional
8. The department have adequate number of full-time faculty members, including senior faculty members, with relevant academic specialization
9. The institution have adequate laboratory facilities for the program



Required documents

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- i. Latest copy of the prospectus of all programs and a copy of the latest academic calendar of the institution.
- ii. Copy of the letter of approval for the establishment of the institution from the authority.
- iii. Copy of the letter of approval for the establishment of the program.
- iv. Copy of statutes/academic ordinances.
- v. List of members of the statutory committees in accordance with the acts/statutes.



Assessment Criteria

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1. Organization and Governance
2. Financial and Physical Resources
3. Faculty
4. Students
5. Academic Facilities and Technical Support
6. Curriculum and Teaching-Learning Processes
7. Program Educational Objectives (PEO)
8. Program Outcomes and Assessment
9. Continuous Quality Improvement (CQI)
10. Interactions with the Industry



Criterion 1: Organization and Governance (1)

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1. Compliance with relevant acts and statutes
2. Statutory positions and bodies of the institution
 - o Appointment of VC, Pro-VC and Treasurer
 - o Formation of the statutory bodies
 - o Function of the statutory bodies
3. Existence of and adherence to policies
 - o Documented (booklet, brochure, webpage) policies: Service rules, academic rules, code of conduct, disciplinary code, recruitment and promotion policies, salary structure, leave rules, and scholarship and financial aid policies
 - o Adherence to policies



Criterion 1: Organization and Governance (2)

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4. Grievance redress system
 - o Existence of a grievance redress mechanism
5. Alumni association
 - o Information about its formation, membership and operating process
6. Convocation



Criterion 2: Financial and Physical Resources (1)

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1. Finance and budget
 - o Assets commensurate with revenue
- | Information | Year 1 | Year 2 | Year 3 |
|-------------------------|--------|--------|--------|
| Total income (BDT) | | | |
| Total expenditure (BDT) | | | |
| Total asset (BDT) | | | |
- o Adequacy of budget
 - o Appropriateness of budgetary allocation
 2. Scholarships and financial aid for students
 3. Accommodations for male and female students



Criterion 2: Financial and Physical Resources (2)

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4. Safety measures: infrastructure, practices, training and compliance
 - o Firefighting policy, facility and rehearsal;
 - o Emergency evacuation and assembly plan and rehearsal;
 - o Campus safety and security measures in place
5. Sports and recreational facilities
6. Placement center



Criterion 3: Faculty (1)

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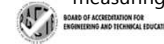
1. Number of full-time faculty members
2. Number of part-time faculty members
3. Class size: minimum/maximum/average class size of all courses/sections in last three years
4. Student-teacher ratio:
 - o For each semester during last three years
 - o No specific method has been proposed, justify the appropriateness of the method being used
5. Involvement of faculty members in research, development and professional activities



Criterion 3: Faculty (2)

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6. Role of faculty members in directing the course and the improvements of the program
 - o Faculty involvements in course outcomes, selecting appropriate pedagogical and assessment tools, updating course content, and making decisions regarding quality improvements to the program.
 - o Submit copies of the minutes of relevant faculty meetings
7. Training of faculty members on outcome-based education
 - o training events organized for faculty members in establishing appropriate course outcomes, conducting effective teaching-learning activities, conducting suitable assessments, and measuring outcome achievement



Criterion 4: Students (1)

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1. Admission policy, including admission criteria
 - o State any preference/priority/quota in admission
2. Policy for transfer students
3. Continuous monitoring of student performance
 - o Feedback to students regarding their academic performance and outcome achievement
 - o Corrective measures for students who fall behind
4. Advising and counseling
 - o Any professional counseling support to students in need



Criterion 4: Students (2)

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5. Extra- and co-curricular activities
 - o How these activities are supported institutionally
 - o List students in who participated in student activities
 - o Mention notable achievements, if any.
6. Professional society activities
 - o Professional societies that have a student branch/chapter



Criterion 5: Academic Facilities and Technical Support

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1. Library
 - o Space and hours of operation
 - o Library resources (books, journals, proceedings, etc.)
 - o Modernization of the library
2. Classrooms
3. Laboratories and equipment
 - o Laboratories for all relevant courses of the curriculum
 - o Availability of equipment
4. Full-time technical support staff for laboratories
5. Internet and computing facilities



Criterion 6: Curriculum and Teaching-Learning Processes (1)

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1. Curriculum
 - o Minimum credit hours expressed in contact hours with formula used

Minimum total credit hours for the program is 130
Lecture Classes: One credit = minimum 750 minutes contact hours
Laboratory Classes: One credit = minimum 1500 minutes contact hours

 - o Course content
 - o Flow chart: semester-by-semester flow chart of the program
 - o List of offered courses and lecture plans
 - o Course files:
 - o COs, assessment tools for each CO, and grading policy
 - o Questions and sample for each exam, class test and quiz
 - o Laboratory sheet and examples of laboratory reports
 - o Assessment criteria or rubrics for assignment/project reports
 - o Final grade assigned to each student
 - o **Assessment and analysis of outcome achievement**
 - o **The course instructor's recommendations for CQI**



Criterion 6: Curriculum and Teaching-Learning Processes (2)

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2. Laboratory activities
 - o List of experiments/project/assignment conducted in each lab course
3. Final-year design project
4. Teaching-learning activities
 - o Interactive/non-traditional activities adopted for different courses, noting the course and the activity.
5. Academic calendar



Criterion 7: Program Educational Objectives (PEOs) (1)

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1. Mission and Vision of the institution and the program
2. PEOs: Statements and their relationship or mapping with the institutional vision and mission

No.	PEO statement	Institutional missions			
		Mission statement 1	Mission statement 2		Mission statement n

3. Relationship between the POs and PEOs

No.	PO statements	PEO 1	PEO 2		PEO n



Criterion 7: Program Educational Objectives (PEOs) (2)

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4. Process for PEO measurement
 - o Process used to measure the achievement of each PEO.
 - o Documents (meeting minutes, survey results, etc.) that support the assertion.
 - o How different stakeholders are involved
 - o How the PEO measurement results are used to redefine and improve the PEOs (CQI).



Criterion 8: Program Outcomes (POs) and Assessment (1)

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1. Course outcomes (COs)

- o Statements of COs

Sl. No.	COs	Corresponding POs	Bloom's taxonomy domain/level	Delivery methods and activities	Assessment tools

- o Assessment of COs: how the attainment of COs is assessed, submit evidence of CO assessment

2. Relationship between COs and POs

Course no.	COs	PO1	PO2	POn



Criterion 8: Program Outcomes (POs) and Assessment (2)

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3. Achievement of POs required by the BAETE
 - o Evidence that each PO has been achieved by the time of graduation.
 - o Justify the assessment tools and assessment criteria
4. Achievement of additional POs
 - o required by the department/school/faculty/institution



Criterion 9: Continuous Quality Improvement (CQI) (1)

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1. Feedback from students
 - o Student evaluation of courses
 - o Student survey: department/institution conducts a periodic survey of the students to assess the level of outcome achievements
2. Feedback from course instructors

How all these feedbacks from different stakeholders are utilized to update PEOs/POs/COs/curriculum/delivery and assessment methods. Provide copies of documents (meeting minutes, analysis reports, etc.) that support the given explanation



Criterion 9: Continuous Quality Improvement (CQI) (2)

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3. Feedback from external stakeholders
 - o Feedback from alumni and employers
 - o Provide survey results, meeting minutes
4. CQI loops
 - o For COs, POs and PEOs. How achievements of outcomes and objectives are assessed, analyses are conducted and improvements are made
5. Addressing deficiencies, weaknesses and concerns identified during the previous accreditation visit

	Statement	Remedial actions taken	Improvements made
Deficiencies			
Weaknesses			
Concerns			



Criterion 10: Interactions with the industry

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1. Industrial advisory panel
2. Participation of the industry in academic updates
3. Students' opportunities to gain industrial experience
 - o Internship
 - o Final-year design project
 - o Industry visits

