

# **NATIONAL BOARD OF ACCREDITATION**

## **GUIDELINES AND OPERATING PRACTICES FOR ACCREDITATION VISIT AND EVALUATION FOR PG ENGINEERING PROGRAMMES (TIER-I)**



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### INTRODUCTION

The NBA constitutes an evaluation team, comprising one Chairperson and one or two Evaluators, for each programme to be considered for accreditation. The evaluation team members are expected to maintain transparency and confidentiality in the accreditation process. A person should not serve as a Chairperson or an Evaluator of the evaluation team if he/she has a relationship leading to any clash of interest with the educational institution to such an extent that his/her judgment may be unduly influenced by their relationship.

The evaluators are expected to perform the following functions:

- study the SAR provided by the institution/university and identify areas where additional information is required and issues that require an in-depth analysis during the visit. Evaluate the SAR, collect and analyse all information that is detrimental to the quality of the programme.
- assist the Chairperson in conducting the visit.
- ensure that the report of the evaluation team is prepared and submitted to the eNBA at the end of the final day of the visit.

The Chairperson is expected to perform the following functions:

- finalise the schedule of visit.
- chair all meetings, coordinate the visit and provide guidance to the evaluation team.
- to address, on behalf of the evaluation team, issues common to all programmes being evaluated, including governance, institutional support and other infrastructural facilities.
- study the SAR provided by the institution/university and coordinate with evaluators to identify areas where additional information is required and issues that require an in-depth analysis during the visit.
- gather necessary information during the visit to support the findings and recommendations of the evaluation team.
- guide the evaluators to arrive at recommendations with consensus
- chair the exit meeting with the Head of the Institution/Departments. The findings of the evaluation team shall be informed to the Head of the Institution/Departments.
- ensure that the report of the evaluation team is submitted to the eNBA, at the end of the final day of the visit.
- prepare the final Chairperson's Report of the evaluation team and submit it to the eNBA within a week from the last date of the visit.

In order to avoid possible conflict of interest, the Chairperson and the Evaluators are not expected to:

- (i) have personal or financial interest in the university/institution; or
- (ii) have or have had a close, active association with the programme or faculty/school/department in the university/institution that is being considered for accreditation.

Some of the close/active associations may be:

- a) serving as faculty or consultant, either currently or within the past 3 years, for the university/institution whose programme is being considered for accreditation;
- b) being an alumnus or receipt of honorary degree from the university/institution whose programme is being considered for accreditation;
- c) holding membership of a board of the university/institution or any advisory committee of the programme which is being considered for accreditation.

Please note that the above list is illustrative, and not exhaustive.

## **ACCREDITATION VISIT**

The Evaluation Team will visit the institution seeking accreditation of its programme(s), and evaluate and validate the assessment of the institute / department through the SAR of the programme concerned as per specified accreditation criteria. The evaluators may obtain such further clarifications from the institution as they may deem necessary. Although it may not be possible to adequately describe all the factors to be assessed during the onsite visit, some of the common ones are the following:

- (i) Outcome of the education provided;
- (ii) Quality assurance processes, including internal reviews;
- (iii) Assessment;
- (iv) Activities and work of the students;
- (v) Entry standards and selection for admission of students;
- (vi) Motivation and enthusiasm of faculty;
- (vii) Qualifications and activities of faculty members;
- (viii) Infrastructure facilities;
- (ix) Laboratory facilities;
- (x) Library facilities;
- (ix) Industry participation;
- (x) Organisation.

In order to assist the Evaluation Team in its assessment, the educational institution should arrange for the following:

**(i) Discussions with**

- a) the Head of the institute/Dean/Heads of Department (HoD)/Programme and course coordinators
- b) a member of the management (to discuss how the programme fits into the overall strategic direction and focus of the institution, and management support for continued funding and development of the programme)
- c) faculty members
- d) alumni (sans Alma Maters)
- e) students
- f) parents

**(ii) Availability of the following exhibits**

- a) profile of faculty involved in the programme
- b) evidence that the results of assessment of course outcomes and programme outcomes are being applied to the review and ongoing improvement of programme effectiveness
- c) list of publications, consultancy and sponsored/funded research projects by programme faculty
- d) sample materials for theory and laboratory courses
- e) sample test /semester examination question papers for all courses
- f) sample of test/semester examination answer scripts projects, assignments, (including at least one excellent, one good and one marginal pass for each examination) question papers and evidence related to assessment tools for the COs and the POs
- g) student records of three immediate batches of graduates
- h) sample project and design reports (excellent, good and marginal pass) by students
- i) sample student feedback form
- j) sample for industry- institute interaction
- k) results of quality assurance reviews
- l) records of employment/higher studies of graduates
- m) records of academic support and other learning activities
- n) any other documents that the Evaluation Team/NBA may request

**(iii) Visits to**

- a) classrooms
- b) laboratories pertaining to the programme
- c) central and department library
- d) computer centre
- e) hostel and dispensary

The Evaluation Team should conduct an exit meeting with the Management Representative, the Head of the institute, the Head of Department and other key officials at the end of the onsite visit to present its findings (strengths, weaknesses, and scope for the improvement). The institution will be given a chance to withdraw one or more programmes from the process of accreditation. In this case, the Head of the institution will have to submit the withdrawal in writing to the Chairperson of the Evaluation Team during the exit meeting.

The entire process of an accreditation visit comprises four activities.

- A. Pre-visit activities
- B. Activities during the visit
- C. Writing report
- D. Seeking 360<sup>0</sup> feedback

### A. Pre-visit Activities

The standard operating practices to be followed by the accreditation team during the period prior to scheduled visit is given below:

- a. e-NBA shall provide a domain on the NBA's web portal to each evaluator and chairperson. Each evaluator/chairperson may transit business with the NBA using their ID and password.. The evaluators/chairperson shall have access to all personal information on his/her page that may be amended by the evaluators time to time as required. e- NBA shall give access to the evaluators and chairperson all information pertaining to the visit they have conducted/participated.
- b. . The date for the visit requested by the institutions, availability of the evaluators/chairperson for the visit, the discipline, programme details and other necessary parameters may be used by e-NBA as filters to constitute the team for the visit. The NBA shall contact the chairperson and evaluators approximately 30-45 days before the scheduled date of accreditation visit to the university/institute asking for consent. On receipt of the notification through e-NBA, the evaluators/chairperson may reconfirm his/her availability.
- c. Once team members are finalised through e-NBA, i) the NBA shall inform the evaluators and chairperson approximately 30-45 days prior to the scheduled visit and send all details, including the SAR. The chairperson and the evaluators will submit a declaration that there is no conflict of interest with the institution. They shall also submit an agreement of confidentiality. ii) e-NBA shall inform the Travel Coordinator for travel arrangements to the institutions.. All such details will be communicated to the evaluators and the chairperson prior to the visit.
- d. The evaluators shall study the SAR, if any additional documents/information for evaluating SAR is required, the same , may be obtained from the institution through the NBA.
- e. The evaluators should correlate syllabus/course contents, etc. vis-à-vis Graduate Attributes and Programme Specific Criteria prior to the date of the visit, Evaluators are required to discuss the matter pertaining to accreditation visit between them as well as with the chairperson.A pre-visit meeting shall be convened in the afternoon/evening of the day prior to the commencement of the visit with all the evaluators and the chairperson, to discuss preliminary findings from the SAR, and issues/concerns they would like to concentrate on during the visit.
- f. The chairperson can also contact the NBA in case the SAR is incomplete or any information provided in the SAR is not available or ambiguous. This feedback is to be received by the chairperson from the evaluators during the pre-visit discussion.
- g. The evaluators shall draw up a plan for evaluation of the SAR and programme in consultation with the chairperson.

## **B. Activities during the visit**

The standard operating practices to be followed by the accreditation team during the visit are given below. Table 1 presents the summary of activities during the visit.

1. The chairperson and the evaluators will reach the destination a day prior to the visit. They will hold a meeting among themselves to discuss the schedule and the plan of activities during the visit.
2. The actual visit will commence in the morning of the next day.
3. On Day-1, the evaluation team will go to the institution in the morning. The Head of the Institution will make a comprehensive presentation and the team members will be introduced to the management and the Head of the Departments of the institution.
4. The team will, then, inspect all central facilities during the pre-lunch session.
5. After a working lunch, the evaluators will go to the respective departments. The Head of Department should present a summary of various activities of the department to the evaluators.
6. The evaluators will visit the library, computing centre, laboratories and other facilities such as seminar/conference halls, faculty rooms, class rooms, teaching aids, video conferencing, internet/intranet, etc. They are also expected to see that whether the above facilities have been adhered to as per AICTE norms.
7. The evaluators will meet the faculty members, technical/supporting staff in order to verify the data supplied in the SAR by the programme. The evaluators should have the objective of gathering maximum information and evidence in support of their report.
8. The evaluators should go for silent observation of teaching practices in the classrooms.
9. The evaluators will interact with students in the class in the absence of faculty members to assess the level of comprehensiveness of a course. The evaluators should frame questions for students in such a way that the information needed from them may be revealed. Questions may also be posed to students regarding teaching practices, quality of lecturers, their usefulness, tutoring, mentoring, academic support, etc.
10. The evaluators should identify students in small groups (not more than 5-6) for interaction to gather information about various aspects which are related to accreditation parameters.
11. At the end of Day-1 visit, the evaluators will meet privately to discuss and clarify their observations.
12. On Day-2, the evaluators will visit the respective departments again in order to verify documents and the items of the SAR. All institution-specific and programme-specific given in the SAR will be checked and verified, besides other evidence, satisfying criteria laid out in the SAR.
13. The evaluators will verify the mapping of COs, POs, PEOs and Mission of the department and institute.



14. After lunch, the evaluators along with the chairperson shall meet the stakeholders - alumni, parents, entrepreneurs and employers as per the schedule. The evaluators may ask about the relevance of course and programme; suitability of course or programme to the job; professional work/profession in practice; suggestion for improvement; interaction, relation and cooperation between them and institute.
15. The evaluators along with the chairperson shall interact with Head of the Department / Head of the Institution / Management representative with questions on academic administration, academic and financial resources, laboratory equipments and their maintenance. Evidence to be collected and corroborated with the findings during interaction with teachers, students as well as their parents, employees and alumni.
16. At the end of Day-2, the evaluators will sit privately and complete the evaluation process and prepare the report. The findings and evidence collected must be used and refined by evaluators in their report.
17. On Day-3, an exit meeting will be conducted.
  - The chairperson of the evaluation team will chair the meeting.
  - The Evaluation team should conduct an exit meeting with the Head of the Institution, Head of Departments and other key officials of the institute. If two or more programmes are being evaluated concurrently at the institution, the exit meetings should be conducted separately by each evaluation team preferably. However, before the evaluation teams carry out their exit meetings, the chairperson may chair a private meeting with all evaluation teams to arrive at a consensus of their findings.
  - At the exit meeting, findings of the evaluation team should be given orally to the Head of the Institute/Head of the Department and his key officials. The nature and scope of the exit meeting could include items such as:
    - Stating the outcome of the visit. As the final decision on the award of accreditation is made by the NBA, the evaluation team should only declare what they will be recommending to the NBA.
    - The exit meeting should not include discussion of the outcome of the accreditation.
  - The institute will be given a chance either to continue with the accreditation process or to withdraw the application for any programme.
  - In case the institute opts to withdraw any programmes, it must be given in writing immediately by the head of the institution to the chairperson of the committee and the same will be forwarded to the NBA.

TABLE 1 SUMMARY OF ACTIVITIES DURING THE VISIT

Day	ACTIVITIES	Duration
0	Meeting among team members	45 minutes
	Discuss the schedule and plan of activities	15 minutes
I	Meeting with Management Representative, Head of the Institution, Head of the Department	30 minutes
	Visit to central facilities	2 hours
	Lunch	
	Presentation by Head of the Department	30 minutes
	Visit to laboratories, library, computing centre and other facilities	1 hour
	Visit to classes	30 minutes
	Interaction with students	30 minutes
	Meeting among team members	30 minutes
II	Verification of programme documents/evidence	2 hours
	Interaction with faculty members	30 minutes
	Lunch	
	Interaction with Management Representative, Head of the Institute, Head of the Department	30 minutes
	Interaction with stakeholders: alumni, parents, employers	1 hour 30 minutes
	Preparation of the evaluator's report	30 minutes
III	Conduct of exit meeting	1 hour
	Submission of the evaluator's online report to the NBA before departure	1 hour

18. The video recording of the visit shall be made. The evaluation team members are not expected to pass any remark leading to confrontation or debate etc. If there is no consensus between two evaluators, the views of each must be recorded with reasoning. Feedback 360<sup>0</sup> form must be filled and mailed in confidence.
19. All members are required to maintain dignity and sanctity of the process as well as confidentiality.
20. Under no circumstance are the team members to be involved in lengthy meetings, arguments, make suggestions, mentoring of faculty of the institute.

### C. Report Writing

The standard operating practices to be followed by the accreditation team at the time of report writing are given below

1. The worksheet i.e., awarding of point must be used for report writing. The report should not be in contradiction with point sheet/guidelines with points awarding. All point sheet/guidelines with marks awarded must be signed by evaluators.
2. The report of the evaluators must not contradict the marks/points awarded, the strengths may be in an area where the score is more than 80%; the weaknesses may be in an area where the score is less than 70%. In case of a disagreement between two evaluators, the reasons for disagreement must be recorded with reasoning and, if possible, with evidence.
3. The report of the chairperson should contain the gist of conversation with the evaluators on phone and/or video conferencing; gist of discussion and strategy drawn on the evening prior to the commencement of visit; common strengths and weaknesses reported by evaluators of various programmes; comments on the findings or disagreements. In case of a disagreement, the reasons must be recorded with reasoning and with evidence, if possible.
4. The evaluation team of each programme will submit online consolidated evaluation report which is given in the NBA website along with electronic signatures of the evaluators of that programme and the chairperson. The online format of the consolidated evaluation report should have the following structure:
  - a. General information: Inputs which include name and address of the institution, description of programme(s) evaluated, dates of visit and names and affiliation of the evaluators and the chairperson.
  - b. Evaluation Report: This report contains points awarded by the evaluators to each items in all criteria along with the remarks.
  - c. Evaluation Summary Sheet: It contains the evaluator's report about the strengths, weaknesses and deficiencies, if any; additional remarks, if any, and summary of evaluation, along with specific remarks for those criteria in which points awarded are less than the qualifying points.
  - d. Chairperson's Report: It contains the chairperson's report on the strengths, weaknesses and deficiencies, if any.

#### **D. Seeking 360<sup>0</sup> feedback**

This 360<sup>0</sup> feedback will enable the NBA to improve its accreditation system and enhance its effectiveness. It will help in bringing transparency and objectivity in the evaluation process which, in turn, improves the quality of the accreditation process. The 360<sup>0</sup> feedback shall be available online to the institution, and to the chairperson and the evaluators on the website of the NBA. They can have the flexibility to either fill the form online or download the form and submit the same by mail within 3 days.

Form A is to be filled by the Head of the institution. This format mainly focuses on the feedback on the evaluation team comprising both chairperson and evaluators regarding the accreditation and evaluation process seeking comments about the general behavior of the evaluation team.

Form B is to be filled by the chairperson. This format mainly focuses on the feedback on the performance of the evaluators and also about the cooperation and coordination rendered by the institution at the time of the accreditation visit.

Form C is to be filled by the evaluators. This format mainly focuses on the feedback on the chairperson, co-evaluators and also about the cooperation and coordination rendered by the institution at the time of the accreditation visit.

Form D is to be filled by the chairperson / evaluators. This format mainly focuses on the feedback on the performance of the service providers during the visit of accreditation.

## Form - A

### Feedback Form to be filled by the Institution Regarding Accreditation Visit

#### Purpose

*This form is designed to have a fair opinion of the institution about the team which has visited your institution. This will enable the NBA to improve its system and make it more effective. We thank you in advance for the time and effort you are investing in filling out this form.*

1. Name of the Institution: \_\_\_\_\_
2. Programme(s) evaluated: \_\_\_\_\_
3. Date(s) of visit: \_\_\_\_\_
4. Name of Chairperson: \_\_\_\_\_
5. Names of Evaluators:
 

1. _____	2. _____	3. _____
4. _____	5. _____	6. _____
7. _____	8. _____	9. _____
10. _____	11. _____	12. _____
6. Please comment on the evaluation methodology adopted by the team during the visit.
7. Whether the evaluators have tendered any advice to improve the system? If yes, please specify.
  - (i) Name of the Evaluator:
  - (ii) Advice:
8. Whether any of the evaluators were specific about the relevant topics related to the programme? If no, please specify.
9. Whether the evaluators interacted with students and faculty in groups or with students and faculty in private? If yes, please specify the name of the students/faculty.
10. Whether the head of the institute or any representative of the management was also present during the interaction? If yes, please specify.
  - (i) Name of the representative:
  - (ii) Observation of the representative about interaction:

11. Whether evaluators have been facilitated by the institute for outdoor activity? If yes, please specify.
- (i) On whose insistence:
  - (ii) What activity:
12. Whether the exit meeting met the purpose i.e., to share the visiting team's perceptions and general observations about the institution and programmes.
13. Specify the participants of the exit meeting.
14. Please comment on the general behaviour of the visiting team (Chairperson and evaluators) during the visit? Whether hospitality was extended to the visiting team? If yes, please specify the participants and the kind of hospitality offered.

Signature of the Head of Institution

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Thank you for your feedback!

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## Form - B

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### Feedback Form to be filled by the Chairperson about the Institution and Team Members

#### Purpose

*This form is designed to have a fair opinion about the team members who have assisted you during the visit. This will enable the NBA to improve its system and make it more effective. We thank you in advance for the time and effort you are investing in filling out this form.*

1. Name of the Institution: \_\_\_\_\_
2. Programme(s) evaluated: \_\_\_\_\_
3. Date (s) of visit: \_\_\_\_\_
4. Name of Chairperson: \_\_\_\_\_
5. Name of Evaluators: 1. \_\_\_\_\_ 2. \_\_\_\_\_  
4. \_\_\_\_\_ 5. \_\_\_\_\_ 6. \_\_\_\_\_  
7. \_\_\_\_\_ 8. \_\_\_\_\_ 9. \_\_\_\_\_  
10. \_\_\_\_\_ 11. \_\_\_\_\_ 12. \_\_\_\_\_
6. Please comment on the evaluation methodology adopted by the evaluators.
7. Whether the evaluator has tendered any advice to improve the system? If yes, please specify.
  - i) Name (s) of the Evaluator: \_\_\_\_\_
  - ii) Advice: \_\_\_\_\_
8. Whether the evaluators were specific about the relevant topics related to the programme? If no, please specify.
9. Whether the evaluator interacted with students and faculty in groups or with students and faculty in private? If yes, please specify the name of the students/faculty.
10. Whether the evaluator has been facilitated by the institution for outdoor activity? If yes, please specify.
  - i) On whose insistence: \_\_\_\_\_
  - ii) What activity: \_\_\_\_\_
11. Please comment on the general behaviour and etiquette of the evaluators during the visit.
12. Please comment on the general behaviour and etiquette of the Head of the institution/other key officials.
13. Please comment on the cooperation and coordination rendered by the institution. If yes, please specify.

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Signature of the Chairperson

Thank you for your feedback!

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## Form - C

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### Feedback Form to be filled by the Evaluator about the Institution, Co-evaluator and Chairperson

#### Purpose

*This form is designed to have a fair opinion about the team members who have assisted you during the visit. This will enable the NBA to improve its system and make it more effective. We thank you in advance for the time and effort you are investing in filling out this form.*

1. Name of the Institution : \_\_\_\_\_
2. Programme (s) evaluated : \_\_\_\_\_
3. Date (s) of visit : \_\_\_\_\_
4. Name of Chairperson : \_\_\_\_\_
5. Name of Evaluator : \_\_\_\_\_
6. Name of Co-Evaluator : \_\_\_\_\_

7. Please comment on the ability of the chairperson to resolve disputes, if any, between the evaluators.

8. Whether the chairperson has tendered any advice to improve the system? If yes, please specify.

9. Whether the chairperson has extended openness with the evaluators? If no, please specify.

10. Whether the chairperson has been facilitated by the institute for outdoor activity? If yes, please specify.

i) On whose insistence:

ii) What activity:

11. Please comment on the general behaviour and etiquette of the chairperson during the visit.

12. Please comment on the general behaviour and etiquette of the Head of the institution / other key officials.

13. Please comment on the general behaviour and etiquette of the co-evaluator.

14. Please comment on the cooperation rendered by the co-evaluator.

15. Please comment on the cooperation and coordination rendered by the institution.

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Signature of the Evaluator

Thank you for your feedback!





## GUIDELINES AND OPERATING PRACTICES FOR ACCREDITATION VISIT AND EVALUATION

### Form - D

#### Feedback Form to be filled by the Chairperson/Evaluator(s) about Service Provider

##### Purpose

*This form is designed to have a fair opinion about the Service Provider hired by the NBA. This will enable the NBA to improve its system and make it more effective. We thank you in advance for the time and effort you are investing in filling out this form.*

1. Name of the Institution:

2. Date (s) of visit:

3. Name of the Chairperson/Evaluator\*:

4. Name of the Service Provider:

##### Assessment of the Service Provider

- I How was your overall experience with the service provider?
  
- II Please comment on customer service, travel management and consulting services.
  
- III Please comment on the travel and lodging requirements met during the visit.
  
- IV Please comment on your travel documentation.
  
- V Are you satisfied with the service provided by the Service Provider? If no, please specify.

\*Please strike out whichever is not applicable

Signature of the Chairperson/Evaluator

Thank you for your feedback!

## Evaluation Guidelines

### Criterion 1: Vision, Mission and Programme Educational Objectives (75)

Minimum qualifying points: 45

Item no.	Item description	Points	Evaluation guidelines/ award of marks
1.1	Vision and Mission	5	<ul style="list-style-type: none"> <li>• Listing and articulation of the vision and mission statements of the institute and department (1)</li> <li>• Description of media (e.g. websites, curricula books) in which the vision and mission are published and how these are disseminated among stakeholders (2)</li> <li>• Articulation of the process involved in defining the vision and mission of the department from the vision and mission of the institute (2)</li> </ul>
1.2	Programme Educational Objectives	10	<ul style="list-style-type: none"> <li>• Listing and articulation of the programme educational objectives of the programme under accreditation (1)</li> <li>• Description of media (e.g. websites, curricula books) in which the PEOs are published and how these are disseminated among stakeholders (1)</li> <li>• Listing of stakeholders of the programme under consideration for accreditation and articulation of their relevance (1)</li> <li>• Description of the process that documents and demonstrates periodically that the PEOs are based on the needs of the programme's stakeholders (3)</li> <li>• Description as to how the Programme Educational Objectives are consistent with the Mission of the department (4)</li> </ul>
1.3	Achievement of Programme Educational Objectives	20	<ul style="list-style-type: none"> <li>• Description of the broad curricular components that contribute towards the achievement of the Programme Educational Objectives (10)</li> <li>• Description of the committees and their functions, working processes and related regulations (10)</li> </ul>

1.4	Assessment achievement of Programme Educational Objectives	of of 35	<ul style="list-style-type: none"> <li>Description of the assessment process that documents and demonstrates periodically the degree to which the Programme Educational Objectives are attained Information on: (a) listing and description of the assessment processes used to gather the data upon which the evaluation of each programme educational objective is based. Examples of data collection processes may include, but are not limited to, employer surveys, graduate surveys, focus groups, industrial advisory committee meetings, or other processes that are relevant and appropriate to the programme; (b) the frequency with which these assessment processes are carried out (5)</li> <li>Details of evidence that the PEO have been achieved: (c) the expected level of achievement for each of the programme educational objectives; (d) summaries of the results of the evaluation processes and an analysis illustrating the extent to which each of the programme educational objectives has been achieved; and (e) how the results are documented and maintained (30)</li> </ul>
1.5	Indicate how the PEOs have been used for redefining PEOs in the past	5	<ul style="list-style-type: none"> <li>Articulation with rationale as to how the results of the evaluation of the PEOs have been used to review/redefine the PEOs (5)</li> </ul>

**Criterion 2: Programme Outcomes (250)**

**Minimum qualifying points: 150**

Item no.	Item description	Points	Evaluation guidelines
2.1	Definition and Validation of Course Outcomes and Programme Outcomes	20	<ul style="list-style-type: none"> <li>• Listing of the course outcomes of the courses in programme curriculum and programme outcomes of the programme under accreditation (1)</li> <li>• Description of media (e.g. websites, curricula books) in which the POs are published and how these are disseminated among stakeholders (1)</li> <li>• Description of the process that documents and demonstrates periodically that the POs are defined in alignment with the graduate attributes prescribed by the NBA (3)</li> <li>• Details as to how the POs defined for the programme are aligned with the Graduate Attributes of the NBA as articulated in the accreditation manual (7)</li> <li>• Correlation of the defined POs of the programme with the PEOs (8)</li> </ul>
2.2	Attainment of Programme Outcomes	75	<ul style="list-style-type: none"> <li>• Correlation between the course outcomes and the programme outcomes. The strength of the correlation is to be indicated. (5)</li> <li>• Description of the different course delivery methods/modes (e.g. lecture interspersed with discussion, asynchronous mode of interaction, group discussion, project etc.) used to deliver the courses and justify the effectiveness of these methods for the attainment of the POs. This may be further justified using the indirect assessment methods such as course-end surveys. (5)</li> <li>• Description of different types of course assessment and evaluation methods (both direct and indirect) in practice and their relevance towards the attainment of the POs. (15)</li> <li>• Justify how the various project works carried as part of the programme curriculum contribute towards the attainment of the POs. (50)</li> </ul>

2.3	Evaluation of attainment of Programme Outcomes	125	<ul style="list-style-type: none"> <li>• Description of the evaluation process that documents and demonstrates periodically the degree to which the Programme Outcomes are being attained. Information on: (a) listing and description of the evaluation processes used to gather the data upon which the evaluation of each the programme outcome is based. Examples of data collection processes may include, but are not limited to, specific exam questions, student portfolios, internally developed assessment exams, senior project presentations, nationally-normed exams, oral exams, focus groups, industrial advisory committee and (b) the frequency with which these evaluation processes are carried out. (25)</li> <li>• Information on: (c)The expected level of attainment for each of the programme outcomes; (d) Summaries of the results of the evaluation processes and an analysis illustrating the extent to which each of the programme outcomes are attained; and (e) How the results are documented and maintained. (100)</li> </ul>
2.4	Use of evaluation results towards improvement of programme	30	<ul style="list-style-type: none"> <li>• Articulation with rationale the curricular improvements brought in after the review of the attainment of the POs. (5)</li> <li>• Articulation with rationale the curricular delivery and evaluation improvements brought in after the review of the attainment of the POs. (10)</li> <li>• Articulation with rationale how the results of the evaluation of the POs have been used to review/redefine the POs in line with the Graduate Attributes of the NBA. ((15)</li> </ul>

**Criterion 3: Programme Curriculum (75)**

**Minimum qualifying points: 45**

Item no.	Item description	Points	Evaluation guidelines
3.1	Curriculum	15	<ul style="list-style-type: none"> <li>• Structure of the curriculum (5)</li> <li>• Articulation with rationale how the structure of curriculum helps in attainment of the POs and the PEOs (10)</li> </ul>
3.2	Indicate interaction with Industry/R&D organisation	40	<ul style="list-style-type: none"> <li>• Details of industry's/R&amp;D organisation involvement in the programme such as industry-attached laboratories and partial delivery of courses and internship opportunities for students (40)</li> </ul>
3.3	Curriculum Development	15	<ul style="list-style-type: none"> <li>• Description of the process that periodically documents and demonstrates periodically how the programme curriculum is evolved considering the PEOs and the POs (5)</li> <li>• Details of the process involved in identifying the requirement for improvement in courses and curriculum and provide evidence of continuous improvement of courses and curriculum (10)</li> </ul>
3.4	Course Syllabi	5	<ul style="list-style-type: none"> <li>• Syllabus for each course and also provide the details of the syllabi format (5)</li> </ul>

**Criterion 4: Students' Performance (100)**

**Minimum qualifying points: 60**

Item no.	Item description	Points	Evaluation guidelines
4.1	Admission intake in the programme	15	<ul style="list-style-type: none"> <li>Assessment will be based on average percentage of seats filled through approved procedure (5)</li> <li>Assessment will be based on quality of the students from their UG/graduation records(5)</li> <li>Assessment will be based on average percentage of students filled through state/GATE entrance exam (5)</li> </ul>
4.2	Success rate	20	<p>Success rate = <math>20 \times \text{Mean of success index (SI) for past three batches}</math></p> <p>SI = (No. of students who cleared the programme in the minimum period of course duration)/(No. of students admitted in the first year and students admitted in that batch via lateral entry)</p>
4.3	Academic performance	20	<p>Assessment = <math>2 \times \text{API}</math></p> <p>where, API = Academic performance index = Mean of CGPA of all the students on a 10-point CGPA system</p> <p>Or = (Mean of the percentage of marks of all students)/10</p>
4.4	Placement and higher studies	20	<p>Assessment = <math>20 \times (x + 3y)/N</math></p> <p>where, <math>x</math> = No. of students placed, <math>y</math> = No. of students admitted for the higher studies, <math>N</math> = No. of students admitted in the first year and students admitted via lateral entry in that batch subject to max. assessment points = 20</p>
4.5	Professional activities	25	<ul style="list-style-type: none"> <li>Membership in professional societies / chapters and organising engineering events (5)</li> <li>Participation and their outcomes in international/national events (5)</li> <li>Publications and awards in international/national events (10)</li> <li>Entrepreneurship initiatives, innovations (5)</li> </ul>

## GUIDELINES AND OPERATING PRACTICES FOR ACCREDITATION VISIT AND EVALUATION

### Criterion 5: Faculty Contributions (200)

Minimum qualifying points: 120

Item no.	Item description	Points	Evaluation guidelines
5.1	Student-teacher ratio	20	<p>Assessment = <math>20 \times 13/STR</math>; subject to max. assessment at 20 where,</p> $STR = (U1+U2+U3+P1+P2)/N1$ <p style="margin-left: 40px;"><math>U1</math> = No. of students in 2nd year of the programme  <math>U2</math> = No. of students in 3rd year of the programme  <math>U3</math> = No. of students in 4th year of the programme  <math>P1</math> = No. of students in PG first year  <math>P2</math> = No. of students in PG second year  <math>N1</math> = Total no. of faculty members in the programme (considering the fractional load)</p>
5.2	Faculty strength in PG programme	20	<p>Assessment = <math>20 \times [X/Y]</math></p> <p><math>X</math> = Number of faculty members with Ph.D available for PG Programme</p> <p><math>Y</math> = Number of faculty members with Ph.D. / M.Tech. / M.E available for PG Programme</p>
5.3	Faculty qualifications	30	<p>Assessment = <math>6 \times FQI</math></p> <p>Faculty qualification index (FQI) = <math>(10x + 6y + 4z_0)/N_2</math>, where, <math>x+y+z_0 \leq N_2, z_0 \leq z</math></p> <p><math>x</math> = No. of faculty members with PhD  <math>y</math> = No. of faculty members with ME/MTech  <math>z</math> = No. of faculty members with BE/BTech/MSc</p>
5.4	Faculty Competencies correlation to Programme curriculum	15	<ul style="list-style-type: none"> <li>• Programme curriculum satisfies the applicable programme criteria specified by the appropriate American professional associations such as ASME, IEEE and ACM</li> <li>• List the programme specific criteria and the competencies (specialisation, research publications, course developments etc.,) of faculty to correlate the programme specific criteria and competencies)</li> </ul>



## GUIDELINES AND OPERATING PRACTICES FOR ACCREDITATION VISIT AND EVALUATION

5.5	Faculty as participants/resource persons in faculty development/training activities	15	<ul style="list-style-type: none"> <li>• Participant/resource person in two week faculty development programme (5)</li> <li>• Participant/resource person in one week faculty development programme (3)</li> </ul> <p style="text-align: center;">Assessment = <math>3 * \text{Sum}/N</math></p>
5.6	Faculty retention	15	<p>Assessment = <math>3 \times \text{RPI}/N</math></p> <p>Retention point index (RPI) = Sum of the retention points to all faculty members</p> <p>One retention point for each year of experience at the institution, subject to maximum five points to a faculty member.</p>

## GUIDELINES AND OPERATING PRACTICES FOR ACCREDITATION VISIT AND EVALUATION

5.7	Faculty research publications	30	<p>Faculty points in research publications (FRP)</p> <p>Assessment of FRP = <math>6 \times (\text{Sum of the research publication points scored by each faculty member})/N</math></p> <p>(Instruction: A faculty member scores maximum five research publication points each year, depending upon the <i>quality</i> of the research papers published in the past three years.)</p> <p>The research papers considered are those (i) which can be located on internet and/or are included in hard-copy volumes/proceedings, published by well-known publishers, and (ii) the faculty member's affiliation, in the published paper, is of the current institution.</p>
5.8	Faculty intellectual property rights	10	<p>Faculty points in IPR (FIPR)</p> <p>Assessment of FIPR = <math>2 \times (\text{Sum of the FIPR points scored by each faculty member})/N</math></p> <p>(Instruction: A faculty member scores maximum five FIPR points each year. IPR includes awarded national/international patents, books, and copyrights.)</p>
5.9	Funded R&D and consultancy work	30	<p>Funded Points in R&amp;D and consultancy work (FRDC)</p> <p>Assessment of R&amp;D and consultancy projects = <math>6 \times (\text{Sum of FRDC by each faculty member})/N</math></p> <p>Instruction: A faculty member gets maximum five points each year, depending upon the amount of the funds and/or the contributions made. A suggestive scheme is given below for a minimum amount of Rs. 1 lakh:</p> <p>Five points for funding by national agency Four points for funding by state agency/private sector Two points for funding by the sponsoring trust/society</p>
5.10	Faculty interaction with outside world	15	<p>Faculty interaction points (FIP) assessment</p> <p>= <math>3 \times (\text{Sum of FIP by each faculty member})/N</math></p>

## GUIDELINES AND OPERATING PRACTICES FOR ACCREDITATION VISIT AND EVALUATION

### Criterion 6: Facilities and Technical Support (75)

Minimum qualifying points: 45

Item no.	Item description	Points	Evaluation guidelines
6.1	Classrooms in the department	15	<ul style="list-style-type: none"> <li>• Adequate number of rooms for lectures (core/electives), seminars, tutorials, etc., for the programme (5)</li> <li>• Teaching aids---multimedia projectors, etc. (5)</li> <li>• Acoustics, classroom size, conditions of chairs/benches, air circulation, lighting, exits, ambience, and such other amenities/facilities (5)</li> </ul>
6.2	Faculty rooms in the department	15	<ul style="list-style-type: none"> <li>• Availability of individual faculty rooms (5)</li> <li>• Room equipped with white/black board, computer, Internet, and such other amenities/facilities (5)</li> <li>• Usage of room for counselling/discussion with students (5)</li> </ul>
6.3	Laboratories in the department to meet the programme curriculum requirements and the POs	30	<ul style="list-style-type: none"> <li>• Adequate well-equipped laboratories to run all the programme-specific curriculum (10)</li> <li>• Availability of computing facilities for the department exclusively (5)</li> <li>• Availability of research facilities to conduct project works/thesis (5)</li> <li>• Availability of laboratories with technical support within and beyond working hours (5)</li> <li>• Equipments to run experiments and their maintenance, number of students per experimental setup, size of the laboratories, overall ambience, etc. (5)</li> </ul>
6.4	Technical manpower support in the department	15	<ul style="list-style-type: none"> <li>• Availability of adequate and qualified technical supporting staff for programme-specific laboratories (10)</li> <li>• Incentives, skill-upgrade, and professional advancement (5)</li> </ul>

**Criterion 7: Teaching-Learning Process (75)**

**Minimum qualifying points:45**

Item no.	Item description	Points	Evaluation guidelines
7.1	Evaluation process: course work	25	<ul style="list-style-type: none"> <li>• Evaluation Process – Class test / mid-term test schedules and procedures for systematic evaluation, internal assessments (10)</li> <li>• Performance and Feedback (3)</li> <li>• Mechanism for addressing evaluation related grievances (2)</li> <li>• Seminar and Presentation Evaluation (10)</li> </ul>
7.2	Evaluation process: Project work / Thesis	25	<ul style="list-style-type: none"> <li>• Allocation of Students to Eligible Faculty Members (supervisors) (10)</li> <li>• Constitution of Evaluation Committee with at least One External Member (10)</li> <li>• Schedule Showing Thesis Presentation at least twice during Semester (5)</li> </ul>
7.3	Teaching evaluation and feedback system	10	<ul style="list-style-type: none"> <li>• Assessment is based on the effectiveness of the guidelines for student feedback system. (3)</li> <li>• Assessment is based on the methodology being followed for analysis of feedback and its effectiveness (2)</li> <li>• Assessment is based on the effectiveness of the implementation of the corrective measures (5)</li> </ul>
7.4	Self-learning beyond syllabus and outreach activities	15	<ul style="list-style-type: none"> <li>• Scope for self-learning (5)</li> <li>• Generation of self-learning facilities, and availability of materials for learning beyond syllabus (5)</li> <li>• Career Guidance, Training, Placement, and Entrepreneurship Cell (5)</li> </ul>

**Criterion 8: Governance, Institutional Support and Financial Resources (75)**

**Minimum qualifying points: 45**

Item no.	Item description	Points	Evaluation guidelines
8.1	Campus infrastructure and facility	5	<ul style="list-style-type: none"> <li>• Maintenance of academic infrastructure and facilities (2)</li> <li>• Hostel (boys and girls) (1)</li> <li>• Electricity, power backup, telecom facility, drinking water, and security (2)</li> </ul>
8.2	Organisation, Governance, and Transparency	10	<ul style="list-style-type: none"> <li>• Governing body, administrative setup, and functions of various bodies (2)</li> <li>• Defined rules, procedures, recruitment, and promotional policies, etc. (2)</li> <li>• Decentralisation in working and grievance redressal system (3)</li> <li>• Transparency and availability of correct/unambiguous information (3)</li> </ul>
8.3	Budget allocation, utilisation, and public accounting	10	<ul style="list-style-type: none"> <li>• Adequacy of budget allocation (4)</li> <li>• Utilisation of allocated funds (5)</li> <li>• Availability of detailed audited statements of all the receipts and expenditures publicly (1)</li> </ul>
8.4	Programme Specific Budget Allocation, Utilisation	10	<ul style="list-style-type: none"> <li>• Adequacy of budget allocation (3)</li> <li>• Budget allocation for research facilities (4)</li> <li>• Utilisation of allocated funds (3)</li> </ul>
8.5	Library	20	<ul style="list-style-type: none"> <li>• Library space and ambience, timings and usage, availability of a qualified librarian and other staff, library automation, online access, and networking (5)</li> <li>• Titles and volumes per title (4)</li> <li>• Scholarly journal subscriptions specific to the programme (3)</li> <li>• Digital library (3)</li> <li>• Library expenditures on books, magazines/journals, and miscellaneous contents (5)</li> </ul>

## GUIDELINES AND OPERATING PRACTICES FOR ACCREDITATION VISIT AND EVALUATION

8.6	Incubation facility	5	<ul style="list-style-type: none"> <li>• Details of the specification of the incubation facility in terms of capacity, utilisation terms and conditions, usage by students point missing</li> </ul>
8.7	Internet	05	<ul style="list-style-type: none"> <li>• Sufficient and effective internet access facility with security privacy (5)</li> </ul>
8.8	Safety norms and Checks	05	<ul style="list-style-type: none"> <li>• Checks for wiring and electrical installations for leakage and earthing (1)</li> <li>• Fire-fighting measurements: Effective safety arrangements with emergency/multiple exits and ventilation/exhausts in auditoriums and large classrooms/labs, fire-fighting equipments and training, availability of water and such other facilities (1)</li> <li>• Safety of civil structures/buildings/catwalks/hostels, etc. (1)</li> <li>• Handling of hazardous chemicals and such other hazards (2)</li> </ul>
8.9	Counselling and emergency medical care and first-aid	05	<ul style="list-style-type: none"> <li>• Availability of counselling facility</li> <li>• Arrangement for emergency medical care</li> <li>• Availability of first-aid unit</li> </ul>

## GUIDELINES AND OPERATING PRACTICES FOR ACCREDITATION VISIT AND EVALUATION

### Criterion 9: Continuous Improvement (75)

**Minimum qualifying points: 45**

Item no.	Item description	Points	Evaluation guidelines
9.1	Improvement in success index of students	5	Points must be awarded in proportion to the average improvements in computed SI (in 4.2) over three years.
9.2	Improvement in academic performance index of students	5	Points must be awarded in proportion to the average improvements in computed API (4.3) over three years.
9.3	Improvement in STR	5	Points must be awarded in proportion to the average improvement in computed STR (5.2) over three years.
9.4	Enhancement of faculty qualification Index	5	Points must be awarded in proportion to the average improvement in computed FQI (5.3) over three years.
9.5	Improvement in faculty research publication, R&D, and consultancy work	10	Points must be awarded in proportion to the combined average improvement in computed FRP (5.7) and FRDC (5.9) over three years.
9.6	Continuing education	10	Points must be awarded in proportion to participation in continuing education (contributing to course modules and conducting and attending short-term courses and workshops) programmes to gain and/or disseminate their knowledge in their areas of expertise.
9.7	New facility created	15	New facilities in terms of infrastructure/equipment/facilities added to augment the programme.
9.8	Overall improvement since last accreditation, if any, otherwise, since establishment	20	Points must be awarded based on the strengths and weaknesses mentioned in the last accreditation visit, and how those were addressed and/or efforts were made.

## Evaluation Report

### **Evaluation Report for NBA Accreditation of Postgraduate Engineering Programmes**

**(Note: This report must be in textual form supported by the findings listed for identified in evaluation guidelines)**

Name of the programme:

Name and address of the institution:

Name of the affiliating university:

Dates of the accreditation visit:

Name, designation, and affiliation of programme evaluator 1:

Name, designation, and affiliation of programme evaluator 2:

Name, designation, and affiliation of team chairperson:

Signatures

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(Programme Evaluator1)

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(Programme Evaluator 2)

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(Team Chairperson)



**Criterion - 1: Vision, Mission and Programme Educational Objectives**

Item no.	Item description	Max. points	Points awarded	Remarks
1.1	Mission and Vision	5		
1.2	Programme Educational Objectives	10		
1.3	Attainment of Programme Educational Objectives	20		
1.4	Assessment of attainment of Programme Educational Objectives	35		
1.5	Indicate how results of assessment of achievement of PEOs have been used for redefining PEOs	5		
	<b>Total</b>	<b>75</b>		

Findings:

Signature

**Criterion - 2: Programme Outcomes**

Item no.	Item description	Max. points	Points awarded	Remarks
2.1	Definition and Validation of Course Outcomes and Programme Outcomes	20		
2.2	Attainment of Programme Outcomes	75		
2.3	Assessment of attainment of Programme Outcomes	125		
2.4	Use of assessment results towards improvement of programme	30		
	<b>Total</b>	250		

**Findings:**

**Signature**

**Criterion - 3: Programme Curriculum**

	Item no.	Item description	Max. points	Points awarded	Remarks
	3.1	Curriculum	15		
	3.2	Indicate interaction with industry/R&D organisation	40		
	3.3	Curriculum Development	15		
	3.4	Course Syllabi	5		
		<b>Total</b>	<b>75</b>		

Findings:

Signature

**Criterion - 4: Students' Performance**

Item no.	Item description	Max. points	Points awarded	Remarks
4.1	Admission intake in the programme	15		
4.2	Success rate	20		
4.3	Academic performance	20		
4.4	Placement and higher studies	20		
4.5	Professional activities	25		
	<b>Total</b>	<b>100</b>		

**Findings:**

Signature

**Criterion 5: Faculty Contributions**

Item no.	Item description	Max. points	Points awarded	Remarks
5.1	Student-teacher ratio	20		
5.2	Faculty strength in PG programme	20		
5.3	Faculty qualifications	30		
5.4	Faculty competencies correlation to Programme curriculum	15		
5.5	Faculty as participants/resource persons in faculty development/training activities	15		
5.6	Faculty retention	15		
5.7	Faculty research publications	30		
5.8	Faculty intellectual property rights	10		
5.9	Faculty R&D and consultancy work	30		
5.10	Faculty interaction with outside world	15		
	<b>Total</b>	200		

**Findings:**

Signature

**Criterion 6: Facilities and Technical Support**

Item no.	Item description	Max. points	Points awarded	Remarks
6.1	Classrooms in the department	15		
6.2	Faculty rooms in the department	15		
6.3	Laboratories in the department to meet the programme curriculum requirements and the POs	30		
6.4	Technical manpower support in the department	15		
	<b>Total</b>	<b>75</b>		

Findings:

Signature

**Criterion 7: Teaching-Learning Process**

Item no.	Item description	Max. points	Points awarded	Remarks
7.1	Evaluation process – Course work	25		
7.2	Evaluation process – Project work / Thesis	25		
7.3	Teaching evaluation and feedback system	10		
7.4	Self-learning beyond syllabus and outreach activities	15		
	<b>Total</b>	<b>75</b>		

**Findings:**

Signature

**Criterion 8: Governance, Institutional Support and Financial Resources**

Item no.	Item description	Max. points	Points awarded	Remarks
8.1	Campus Infrastructure and Facility	5		
8.2	Organisation, Governance, and Transparency	10		
8.3	Budget Allocation, Utilisation, and Public Accounting	10		
8.4	Programme Specific Budget Allocation, Utilisation	10		
8.5	Library	20		
8.6	Incubation facility	5		
8.7	Internet	5		
8.8	Safety Norms and Checks	5		
8.9	Counselling and Emergency Medical Care and First-aid	5		
	<b>Total</b>	<b>75</b>		

**Findings:**

Signature



**Criterion 9: Continuous Improvement**

Item no.	Item description	Max. points	Points awarded	Remarks
9.1	Improvement in Success Index of Students	5		
9.2	Improvement in Academic Performance Index of Students	5		
9.3	Improvement in Student-Teacher Ratio	5		
9.4	Enhancement of Faculty Qualification Index	5		
9.5	Improvement in Faculty Research Publications, R&D Work and Consultancy Work	10		
9.6	Continuing Education	10		
9.7	New Facility Created	15		
9.8	Overall Improvement since last accreditation, if any, otherwise, since the commencement of the programme	20		
	<b>Total</b>	<b>75</b>		

**Findings:**

Signature



## GUIDELINES AND OPERATING PRACTICES FOR ACCREDITATION VISIT AND EVALUATION

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### Experts' Report on the Strengths, Weaknesses, and Deficiencies, if any.

#### Strengths:

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#### Weaknesses:

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#### Deficiencies, if any:

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#### Additional remarks, if any:

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**Summary of Evaluation**

No.	Criterion	Max. points	Qualifying points	Points awarded	Qualified?
1	Vision, Mission and Programme Educational Objectives	75	45		Yes/No
2	Programme Outcomes	250	150		Yes/No
3	Programme Curriculum	75	45		Yes/No
4	Students' performance	100	60		Yes/No
5	Faculty Contributions	200	120		Yes/No
6	Facilities and technical support	75	45		Yes/No
7	Teaching-Learning Process	75	45		Yes/No
8	Governance, Institutional Support and Financial Resources	75	45		Yes/No
9	Continuous Improvement	75	45		Yes/No
	<b>Total</b>	<b>1000</b>	<b>600</b>		

**Specific remarks for those criteria in which points awarded are less than the qualifying points:**

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(Programme Evaluator1)

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(Programme Evaluator 2)

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(Team Chairperson)

**Chairperson's Report**

Name of the programme	
Name and address of the institution	
Dates of the accreditation visit	
Name, designation, and affiliation of programme evaluator 1	
Name, designation, and affiliation of programme evaluator 2	

**(Requested to submit individual report for each programme)**

**Strengths:**

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**Weaknesses:**

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**Deficiencies, if any:**

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**Additional remarks, if any:**

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(Team Chairperson)

## List of documents/records to be made available during the visit ( a tentative list)

**(Instruction: Records of last three years to be made available, wherever applicable)**

The following list is just a guideline. The institution may prepare its own list of documents in support of the SAR that it is submitting. The soft copy of these documents (in the form of statements and list only) may be appended with SAR.

### Institute Specific

- I.1. Land papers, built-plan, and approval, etc.
- I.2. Composition of governing, senate, and other academic and administrative bodies; their functions; and responsibilities. List of all the meetings held in the past three years along with the attendance records. Representative minutes and action taken reports of a few meetings of such bodies along with the list of current faculty members who are members of such bodies.
- I.3. Rules, policies, and procedures published by the institution including service book and academic regulations and others, along with the proof that the employees/students are aware of the rules and procedures.
- I.4. Budget allocation and utilisation, audited statement of accounts.
- I.5. Informative website.
- I.6. Library resources---books and journal holdings.
- I.7. Listing of core, computing, and manufacturing, etc., labs.
- I.8. Records of T&P and career and guidance cells.
- I.9. Records of safety checks and critical installations.
- I.10. Medical care records and usages of ambulance, etc.
- I.11. Academic calendar, schedule of tutorial, and makeup classes.
- I.12. Handouts/files along with outcomes, list of additional topics to meet the outcomes.
- I.13. Set of question papers, assignments, evaluation schemes, etc.
- I.14. Feedback form, analysis of feedback, and corrective actions.
- I.15. Documented feedback received from the stakeholders (e.g., industries, parents, alumni, financiers, etc.) of the institution.
- I.16. List of faculty who teach first year courses along with their qualifications.
- I.17. Results of the first year students.

## Programme Specific

Each programme for which an institution seeks accreditation or reaccreditation must have in place the following:

- P.1 NBA accreditation reports of the past visits, if any
- P.2 Department budget and allocations (past three years data)
- P.3 Admission---seats filled and ranks (last three years data)
- P.4 List/number of students who have cleared the programme in four years (last three years data)
- P.5 CGPA (last three years data of students' CGPA/ percentage)
- P.6 Placement and higher studies (last three years data)
- P.7 Professional society activities, events, conferences organised, etc.
- P.8 List of students' papers along with hard copies of the publications; professional society publications/magazines, etc.
- P.9 Sample best and average project reports/thesis
- P.10 Details of student-faculty ratio
- P.11 Faculty details with their service books, salary details, sample appointment letters, promotion and award letters/certificates
- P.12 Faculty list with designation, qualification, joining date, publication, R&D, interaction details
- P.13 List of faculty publications along with DOIs and publication/citation details
- P.14 List of R&D and consultancy projects along with approvals and project completion reports
- P.15 List and proofs of faculty interaction with outside world
- P.16 List of classrooms, faculty rooms
- P.17 List of programme- specific laboratories and computing facility within department.
- P.18 List of non-teaching staff with their appointment letters, etc.
- P.19 List of short-term courses, workshops arranged, and course modules developed
- P.20 Records of new programme- specific facility created, if any
- P.21 Records of overall programme- specific improvements, if any
- P.22 Curriculum, POs, PEOs, Mission, and Vision statements
- P.23 Correlation of outcomes with the PEOs
- P.24 Correlation of course outcomes with the POs
- P.25 Course files, plan of course delivery, question papers, answer scripts, assignments, reports of assignments, project reports, report of design projects, list of laboratory experiments, reports of laboratory experiments, etc.
- P.26. Rubrics developed to validate the POs
- P.27. Continuous improvement in the PEOs
- P.28. Improvement in curriculum for correlating the POs and the PEOs
- P.29. Direct and indirect assessment methods to show attainment of the POs
- P.30. Stakeholder's involvement in the process of improvement of the PEOs and the POs
- P.31. Collected forms of various indirect assessment tools (e.g. alumni survey, employer survey )
- P.32. Any other documents which may be necessary to evaluate the SAR

## **SAMPLE QUESTIONS**

Sample questions are provided in the accreditation guidelines and operating practices for the interaction with the head of the institution, head of the department, faculty and students with the main objective to have a better understanding of strengths and weaknesses of programmes and to have information on achievements of POs and PEOs in order to appreciate the ground reality. For interviewing the various members, faculty and above mentioned stakeholders some suggestive questions were framed by the NBA for each category. These questions are just illustrative, not exhaustive. The visiting team members are encouraged to frame their own questions with the basic objective of interviewing the stakeholders.

### **TO THE HEAD OF INSTITUTION**

- How is equitable distribution of funds to departments ensured?
- How does research activity have linkages and benefits to undergraduate programme?
- Are research scholars and PG students used in tutorials and laboratory demonstration? Do they receive any training?
- What are faculty workloads like? How do you balance the work load between teaching and research?
- What are the strategic directions for engineering? In which direction is engineering headed at your institution?
- Is the level of industry input to programme design and targeted graduate outcomes adequate?

### **TO THE DEAN / HEAD OF DEPARTMENT / PROGRAMME COORDINATORS**

- How are academic faculty involved in the programme design?
- What is the level of faculty development adapted to improve quality of teaching? How many are involved?
- How many members of the faculty are involved in the internship scheme?
- What happens if somebody is ill or wants to take a period of study leave?
- How many members of the faculty are involved in the Foundations of Teaching and Learning programme?
- Describe your role and responsibilities.
- How many of you are involved in the academic leadership course for Course Coordinators?
- How is the programme review initiated and implemented? When does industry interaction begin?
- How much does programme review involve academic faculty?
- Tell us about the balance between the coverage of discipline-specific and engineering practice in the First Year.
- What are the strategic directions for engineering?
- How do you feel about the quality of laboratories and the level of student engagement?
- What extent laboratories and facilities are useful for practical learning and project work? What might be development directions and prioritisation?

- Is the quantum and quality of laboratory practice consistent with the needs of an engineering graduate?
- Are the laboratory equipment and computers properly maintained? Is supporting staff adequate for these activities?
- Are you aware of the specified programme outcomes?
- What progress has been made on tracking the development, throughout the programme, of graduate attributes?
- What do you see as the positives associated with this programme?
- What are the characteristics that make this programme good or unique?
- What are your views on the capabilities of your students at the time they complete their studies?
- What are your views on the employability of your students?
- Where is professional development being delivered (writing, communication and research skills, teamwork, project management, etc)? Is it embedded throughout the programme?
- Is there sufficient student elective choice in the programme? Would more choice be advisable?
- Is the development of engineering design skills adequate? How is design embedded into the programme?
- How are the issues of engineering ethics, sustainability and the environment covered throughout the programme?
- Are the students exposed to issues related to globalisation and changing technologies?
- What proportion of final year projects are industry based? How are they supervised and managed?
- What proportion of final year projects are research-oriented?
- Is the course material made available to students?
- Where do students perform their assignment work? Are separate working spaces for group work available?
- What are the modern tools used for teaching?
- Are students able to learn better from power point presentations?
- How much exposure is to local industry practice such as guest presentations, teaching by visiting faculty, site visits, industry problem solving, case studies, and industry projects occurring? Are these events prescribed as part of the overall educational design, or simply included on the initiative of the local programme/course coordinator?
- How is exposure to professional practice monitored and assessed?
- What kind of site visits are offered? Are site visits active for the students?
- What opportunities are being grasped in industrial design and project work to take advantage of industry topics or input? Are industry-based projects supervised or co-supervised by industry people?
- Does industry sponsor the project work?
- Do all students undertake an internship or industrial training?
- Describe the reporting mechanisms and assessment requirements.
- What are the overall quality mechanisms that ensure appropriateness of outcomes?
- How are academic faculty involved in achieving Graduate Attributes?
- What is the evidence of progress being made on mapping student learning outcome to POs, including mapping of the outcomes to the Graduate Attributes?



- What efforts are made to ensure that assessment truly assesses the student learning outcomes in each subject?
- How are course outcomes and assessment measures at the unit level tracked to close the loop, on delivery of targeted graduate outcomes?
- What are the roles of the Programme Coordinator, course coordinators and academic faculty in programme review and quality improvement?
- How often do faculty meet as a teaching team to discuss programme improvement issues?
- To what extent is improvement made from student feedback?
- Are unit outlines demonstrating closure of the quality loop at unit and programme levels?
- State the level of industry input to programme design and targeted graduate outcomes.
- What is the impact of the advisory committee on contextualising the programme to local and global needs?
- What are the mechanisms available for formal/documented student feedback?
- How is student feedback obtained?
- Do students receive feedback on actions taken?
- Are issues of graduate outcomes, curriculum design and improvement discussed?
- What are the other consultation mechanisms?
- How does the faculty respond to the outcomes of student/unit surveys?
- What changes have been made to the programme as a result of your evaluation?
- What is the process used for making changes to the programme outcomes?
- How do the faculty credentials relate to the PEOs and the POs?
- Is the quantum and quality of laboratory practice consistent with the needs of an engineering graduate?
- How active is the industry-institute interaction partnership cell?
- What programme changes have been made from the input by industry-institute interaction partnership cell?
- What are the strengths and weaknesses of your department and support departments?
- Are any major curriculum changes planned? What? When?
- What are the major needs for growth and development of the curriculum?
- Do you make recommendations for faculty salary and increments?
- How much time is available to the faculty for professional development? What is the budget for faculty professional development?
- Are faculty sent abroad under faculty exchange programme?

## TO FACULTY

- How does research activity have linkages and benefits to undergraduate programme?
- Are research scholars and PG students used in tutorials and laboratory demonstration? Do they receive any training?
- How do you ensure that appropriate assessment techniques are being used?
- What assessment moderation processes are used? Is there any senior project work?
- What professional development (T&L-related) have you received?
- What are faculty workloads like? How do you balance your load between teaching and research?
- What are the good things that are happening in the programme?
- What are the unwanted things that are happening in the programme?
- What programme educational objectives and programme outcomes do the courses you teach support?
- Are you involved in the assessment/evaluation of programme educational objectives and programme outcomes? How?
- Are you involved in programme improvements? How?
- Is there sufficient student elective choice in the programmes? Would more be better?
- How is the Honours' programme different from the graduate programme?
- Is the development of engineering design skills adequate? How is design embedded into the programme?
- How are the issues of engineering ethics, sustainability and the environment, and business studies covered throughout the programme?
- Are the students exposed to issues related to globalisation and changing technologies?
- What proportion of final year projects are industry based? How are they supervised and managed?
- Are lectures recorded and made available to students?
- How do you ensure that appropriate assessment techniques are being used?
- How much time do you spend on professional development?
- What professional society are you a member of? Are you active? Do you hold any office?
- Does the same instructor usually teach both lecture and laboratory portions of related courses? If not, how do they coordinate?
- Is the salary structure satisfactory? What additional benefits are included?
- What unique or unusual teaching methods are used in your department?
- Do you maintain regular contacts with industry? How?
- How has the industrial-institute partnership cell affected the POs?
- Are the support departments providing appropriate educational services for your students?
- Is there adequate secretarial and technician service available to you?
- How do you balance your load between teaching and research?
- Have you acquired any additional qualification to provide effective teaching?
- How is your industrial experience if any relevant to this programme?
- What is your role in the continuous improvement of the programme?
- What are the roles of the Head of the Department, Course coordinators and staff members in programme review and quality improvement?
- How often do staffs meet as a teaching team to discuss programme improvement issues?
- What are the other consultation/grievances mechanisms available ?

## TO STUDENTS

- How has your educational experience measured up to your expectations?
- Comment on facilities such as laboratory, IT access, information resources and project work.
- Are you providing feedback as part of a quality/programme improvement mechanism?
- To what extent does the programme provide for your personal and professional capabilities development? Are there measures of your personal development and performance such as team-work, leadership, management, communication and presentation skills, self learning capacity etc? Are these systematically addressed in subjects studied?
- Have any issues such as globalisation, ethics and sustainable practices been addressed yet?
- What improvement would you make if you had a magic wand?
- Did you make use of online learning facilities? What are they? Do they make a difference?
- Do you feel that you have an understanding of the targeted outcomes for your programme and the real nature of engineering practice in your chosen domain? How was this understanding established?
- How successful are faculty members as role models of the professional engineer?
- How accessible are faculty?
- Did you get exposure to sessions or guest lectures by practising professionals? Are these well-organised and well-presented?
- What do you think are the key attributes an employer would be looking for in a graduate engineer?
- How effective are subject/unit outline documents in communicating and interlinking objectives, learning outcomes, activities and assessment strategies within individual units?
- Is the assessment well-coordinated with objectives and targeted learning outcomes within academic units?
- Are there other avenues of embedded professional practice exposure other than placement activities such as industry visits, field trips, industry assignments, case studies, industry based projects etc.? Is there sufficient exposure to professional practice?
- How effective is laboratory learning? Are experiments prescriptive or open-ended?
- What has been the nature of project-based learning activity in the programme? Have you been confronted with multi-disciplinary, open-ended, complex projects? Has it been necessary to consider factors such as social, environmental, safe practices and ethical matters?
- Have you been involved in any team based learning activities yet? Have you become a good team player and/or team leader? Are you assessed for your team performance?
- What input do you have for the quality system, through surveys, input to the processes of educational design and continuous improvement? Is your feedback effective? Does it bring about change? Do you hear about improvement being made?
- What skills are you expected to acquire at the time of graduation?
- Comment on attainment of program educational objectives.

- To what extent does the program provide for your personal and professional capabilities development? Are there measures of your personal development and performance such as team-work, leadership, management, communication and presentation skills, self learning capacity etc? Are these systematically addressed in subjects studied?
- Are you acquiring the expected / required skills?
- Are the faculty members competent in the subjects they teach?
- Are the faculty members available and helpful to you at times convenient to you?
- Why did you choose this institution/department / programme?
- Are the laboratory equipment/tools/accessories well-maintained?
- How good is the hands-on experience?
- Do you plan to continue your education after graduation? Where? When?
- Do you plan to accept a job after graduation? Where? When?
- What type of job can you get as a graduate of this programme? At what salary?
- What is your overall view of the programme?
- Would you recommend it to a friend?
- Are you providing feedback as part of a quality/programme improvement mechanism?