NBA PEV Orientation Workshop

Self Assessment Report : Overview of Changes

14.05.2016

VJTI, Mumbai

SAR Level Changes - **Differentiators**: 2015/2016 (2013)

1. Concept of First Time and Subsequent accreditation
2. Explicit Seven Program level criteria and Three Institute level criteria
3. No marks on curriculum; content beyond to cover gaps (Tier – II)
4. PEO achievement NOT there / removed
5. PEO – PO mapping matrix NOT there / removed
6. Separate subsection on Course Outcomes attainment
7. Emphasis on effective Teaching – Learning and POs/PSOs attainment
8. Innovations by the Faculty in Teaching - Learning included
9. Institute & Program level – expenditure per student included
10. Research/Consultancy: Expectations from the Program not from individual faculty

SAR Level Changes - **Differentiators**: 2015/2016 (2013)

11. The assessment based on class rooms, faculty rooms, medical, power backup not there / removed

12. Academic Audit, Faculty Performance Appraisal & Development System included

13. Continuous Improvement assessment is qualitative

14. First year admissions – Nos and ranks, both are assessment points

15. Student feedback on T-L and Industry connect assessed at the program level (EG-Tier II)

16. Outcomes Attainment, Student & Faculty put together
    Tier-I: (175+100+200); 475, 47.5% weightage
    Tier-II: (120+150+200); 470, 47% weightage

17. Placement and Higher Studies given equal weightage

18. Examples given; NBA expectations also explicitly mentioned

SAR Contents (Tier – I & Tier – II)

Serial Code & Link to the Item	Item
PART A	Institutional Information
PART B	Criteria Summary
	Program Level Criteria
1	Vision, Mission and Program Educational Objectives
2	Program Curriculum and Teaching – Learning Processes
3	Course Outcomes and Program Outcomes
4	Student's Performance
5	Faculty Information and Contributions
6	Facilities and Technical Support
7	Continuous Improvement
	Institute Level Criteria
8	First Year Academics
9	Student Support Systems
10	Governance, Institutional Support and Financial Resources
PART C	Declaration by the Institution
Annexure- I	**Program Outcomes (POs) & Program Specific Outcomes (PSOs)**

PART B - CRITERIA SUMMARY

Criteria No.	Criteria		Weightage /Marks
Program level Criteria (Tier-I: 780, Tier-II: 780)/1000			
1.	Vision, Mission and Program Educational Objectives	Tier-I	50 (5+5+15+15+10)
		Tier-II	60 (5+5+10+25+15)
2.	Program Curriculum and Teaching–Learning Processes	Tier-I	100 (30+70)
		Tier-II	120 (20+100)
3.	Course Outcomes and Program Outcomes	Tier-I	175 (25+75+75)
		Tier-II	120 (20+50+50)
4.	Students' Performance	Tier-I	100 (20+20+10+30+20)
		Tier-II	150 (20+40+15+15+40+20)

PART B - CRITERIA SUMMARY

Criteria No.	Criteria		Weightage /Marks
Program level Criteria			
5.	Faculty Information and Contributions	Tier-I	200 (70+130) (20+20+20+10+10+10+15 +75+10+10)
		Tier-II	200 (95+105) (20+25+25+25+20+15+30 +30+10)
6.	Facilities and Technical Support	Tier-I	80 (40+10+10+20)
		Tier-II	80 (30+25+10+5+10)
7.	Continuous Improvement	Tier-I	75 (30+15+10+20)
		Tier-II	50 (20+10+10+10)

PART B - CRITERIA SUMMARY

Criteria No.	Criteria		Weightage /Marks
Institute level Criteria (Tier-I: 220, Tier-II: 220) / 1000			
8.	First Year Academics	Tier-I	50 (5+5+10+10+20)
		Tier-II	50 (5+5+10+10+20)
9.	Student Support Systems	Tier-I	50 (5+10+5+5+10+5+10)
		Tier-II	50 (5+10+5+5+10+5+10)
10.	Governance, Institutional Support and Financial Resources	Tier-I	120 (55+15+30+20)
		Tier-II	120 (40+30+30+20)
Total		**1000**	

Details with EG

Tier-II

(with appropriate reference to Tier-I)

CRITERION 1	Vision, Mission and Program Educational Objectives	60

1.1. State the Vision and Mission of the Department and Institute (5)

- Vision statement typically indicates aspirations and Mission statement states the broad approach to achieve aspirations
- Should be written in a simple language, easy to communicate and should define objectives which are out of reach in the present context
- Should be understood and shared by the people within the system
- Department Vision and Mission statements shall be consistent with the Institute Vision and Mission statements

· Availability (1) + Appropriateness (2) + Consistency (2)

1.2. State the Program Educational Objectives (PEOs) (5)

- State the Program Educational Objectives (3 to 5)

  Availability & Correctness

Indicative:

Typically under the following five broad categories:

1. Preparation – Employment/Higher studies
2. Core competence – Discipline knowledge
3. Breadth – ‘T’ Shaped Engineer
4. Professionalism – 3 Ps – Professional value-knowledge-development
5. Life long learning – Environment

1.3.Indicate where the Vision, Mission and PEOs are published and disseminated among stakeholders (10)

- Observe where (websites, curricula, posters etc.) the Vision, Mission and PEOs are published
- Observe the process which ensures awareness among internal and external stakeholders
- Verify Effective process implementation including involvement of stakeholders

Adequacy (2) + Process (2) + Extent of Awareness (6)

- Availability on Institute website under relevant program link
- Availability at department notice boards
- HoD Chamber
- Department website, if available
- Availability in department level documents
- Documentary evidence

1.4. State the process for defining the Vision and Mission of the Department, and PEOs of the program (25)

- Observe the process for defining the Vision and Mission of the department and PEOs of the program

Vision and Mission process (10) + PEOs process (15)

Process to ensure:

- Effective participation of Stakeholders
- Effective Process implementation

Documentary evidence

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1.5. Establish consistency of PEOs with Mission of the Department (15)

- Generate a "Mission of the Department – PEOs matrix" with justification and rationale of the mapping

PEO Statements	M1	M2	….	Mn
PEO1:				
PEO2:				
PEO3:				
PEO4:				
PEO5:				

Note: M1, M2, . . Mn are distinct elements of Mission statement. Enter correlation levels 1, 2 or 3 as defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

It there is no correlation, put "-"

Matrix Preparation (5) + Consistency/Justification (10)

CRITERION 2	Program Curriculum and Teaching – Learning Processes	120

2.1. Program Curriculum (20)

2.1.1. State the process used to identify extent of compliance of the University curriculum for attaining the Program Outcomes and Program Specific Outcomes as mentioned in Annexure I. Also mention the identified curricular gaps, if any (10)

- State the process details
- Mention identified curricular gaps
- Extent of compliance

Effective Process implementation (6) + Curricular Gaps (4)

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Note: If no gaps then marks of 2.1.2 will be merged with 2.1.1.

2.1.2. State the delivery details of the content beyond the syllabus for the attainment of POs & PSOs (10)

- Details of the additional course/learning material/content/laboratory experiments/projects etc. to cover the gaps

Institute to provide inputs to the Affiliating University regarding curricular gaps and possible addition of new content/add-on courses in the curriculum to better attain program outcome(s)

Intimation to the University (2) + Delivery details (5) + Mapping (3)

CAY, CAYm1, CAYm2

S.No.	Gap	Action taken	Date-Month-Year	Resource Person with designation	No. of students present	Relevance to POs, PSOs

- Documentary evidence
- Availability & Appropriateness of Mapping

Tier - I Program Curriculum (30)

Process – 10

Structure – 5 - Course code, Title, Contact Hours (L-T-P), Credits

Components – 5 - BS, ES, HSS, Core, Electives, Open Electives, Projects, Internship, Other(s)

POs & PSOs attainment – 10, Process to identify extent of compliance

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2.2. Teaching-Learning Processes (100)

2.2.1. Describe Processes followed to improve quality of Teaching & Learning (25)

Processes may include adherence to academic calendar and implementation of pedagogical initiatives such as –

- Real life examples
- Collaborative learning
- Quality of laboratory experience with regard to conducting experiments
- Recording observations
- Analysis of data etc
- Encouraging bright students
- Assisting weak students etc
- ICT supported learning
- Interactive classrooms

Academic Calendar (3) + Pedagogical initiatives (3) + Weak and Bright students (4) + Classroom teaching (3) + Experiment (3) + Continuous Assessment in Lab (3) + Student feedback of T-L and action taken thereof (6)

Documentary evidence

2.2.2. Quality of internal semester Question papers, Assignments and Evaluation (20)

Mention the initiatives, Implementation details and analysis of learning levels related to –

- Quality of Semester Question papers
- Assignments
- Evaluation
- Relevance to COs

Process to ensure quality (5)

Process to ensure quality of question paper from outcomes/learning perspective (5)

Evidence of COs coverage (5)

Quality of assignments and relevance to COs (5)

2.2.3. Quality of student projects (25)

- Consideration to factors including, but not limited to –
  - Environment
  - Safety
  - Ethics
  - Cost
  - Type (application, product, research, review etc.)
  - Standards
  - Processes related to project identification, allotment, continuous monitoring, evaluation
  - Demonstration of working prototype sand enhancing the relevance of projects.
  - Mention Implementation details including details of Pos and PSOs addressed with justification

Identification of projects and allocation methodology (3)

Types and relevance of the projects and their contribution towards attainment of POs(5)

Process for monitoring and evaluation (5)

Process to assess individual and team performance (5)

Quality of completed projects/working prototype(5)

Evidences of papers published /Awards received by projects etc. (2)

2.2.4. Initiatives related to industry interaction (15)

- Industry supported laboratories (5)
- Industry involvement in the program design and partial delivery of any regular courses for students (5)
- Impact analysis of industry institute interaction and actions taken thereof (5)

2.2.5. Initiatives related to industry internship/summer training (15)

- Industrial training/tours for students (3)
- Industrial /internship /summer training of more than two weeks and post training Assessment (4)
- Impact analysis of industrial training (4)
- Student feedback on initiatives (4)

- Type of Industries, planned or non-planned activity
- Objectives clearly defined
- No. of students participated; Relevant area of training
- Visit report documented

(To be verified during interaction with students)

CRITERION 3	Course Outcomes and Program Outcomes	120

3.1. Establish the correlation between the Courses and the Program Outcomes (POs) and Program Specific Outcomes (PSOs) (20)

3.1.1. Course Outcomes (COs)

SAR should include course outcomes of One course/Semester (3rd to 8th) of study, however, should be prepared for all courses and made available as evidence, if asked) (05)

Number of Outcomes for a Course is expected to be around 6.

Course Name: Ciii Year of Study: YYYY – YY; for ex. C202 Year of study 2013-14

C202.1	<Statement>
C202.2	<Statement>
C202.3	<Statement>
C202.N	<Statement>

Evidence of COs being defined for every course (5)

Appropriateness of the statements

3.1.2. CO-PO matrices of courses selected in 3.1.1 (six matrices to be mentioned; one per semester from 3rd to 8th semester) (05)

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C202.1												
C202.2												
C202.3												
C202.N												
C202												

Note:
Enter correlation levels 1, 2 or 3 as defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

It there is no correlation, put "-"

Similar table is to be prepared for PSOs

Justification of the mapping

3.1.3. Program level Course-PO matrix of all courses INCLUDING first year courses(10)

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C101												
C202												
C303												
....												
....												
C4...												

Note:

Enter correlation levels 1, 2 or 3 as defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

It there is no correlation, put "-"

It may be noted that contents of Table 3.1.2 must be consistent with information available in Table 3.1.3 for all the courses.

Similar table is to be prepared for PSOs

Justification of the mapping

3.2. Attainment of Course Outcomes (50)

3.2.1. Describe the assessment processes used to gather the data upon which the evaluation of Course Outcome is based (10)

- *Examples of data collection processes may include, but are not limited to –*

  - *Specific exam/tutorial questions*
  - *Assignments*
  - *Laboratory tests*
  - *Project evaluation*
  - *Student portfolios*

- *A portfolio is a collection of artifacts that demonstrate skills, personal characteristics, and accomplishments created by the student during study period, internally developed assessment exams, project presentations, oral exams etc.*

List of Assessment process (2)

Quality and relevance of processes and tools (8)

3.2.2. Record the attainment of Course Outcomes of all courses with respect to set attainment levels (40)

- Program shall have set Course Outcome attainment levels for all courses
- The attainment levels shall be set considering average performance levels in the University Examination or any higher value set as target for the assessment years
- Attainment level
  - ➢ Student performance in internal assessments with respect the Course Outcomes
  - ➢ Performance in the University Examination

Methodology to define attainment levels and its compliance, data collection, verification, analysis and decision making

Measuring Course Outcomes attained through University Examinations

*Note: For cases where the **University does not provide** useful indicators like average or median marks etc., the program may choose an attainment level on its own with justification*

Example related to attainment levels Vs. targets:
(The examples indicated are for reference only. Program may appropriately define levels)

***Attainment Level 1:** **60%** students scoring more than University average percentage marks or set attainment level in the final examination*

***Attainment Level 2:** **70%** students scoring more than University average percentage marks or set attainment level in the final examination*

***Attainment Level 3:** **80%** students scoring more than University average percentage marks or set attainment level in the final examination*

- *Attainment is measured in terms of actual percentage of students getting set percentage of marks*
- *If targets are **achieved** then all the course outcomes are attained for that year Program is expected to set higher targets for the following years as a part of continuous improvement*
- *If targets are **not achieved** the program should put in place an action plan to attain the target in subsequent years*

Measuring CO attainment through Internal Assessments:

(The examples indicated are for reference only. Program may appropriately define levels)

Target may be stated in terms of percentage of students getting more than class average marks or set by the program in each of the associated COs in the assessment instruments (midterm tests, assignments, mini projects, reports and presentations etc. as mapped with the COs

Example

Mid-term test 1 addresses C202.1 and C202.2. Out of the maximum 20 marks for this test 12 marks are associated with C202.1 and 8 marks are associated with C202.2

Examples related to attainment levels Vs. targets:

Attainment Level 1: 60% students scoring more than 60% marks out of the relevant maximum marks

Attainment Level 2: 70% students scoring more than 60% marks out of the relevant maximum marks

Attainment Level 3: 80% students scoring more than 60% marks out of the relevant maximum marks

- *Attainment is measured in terms of actual percentage of students getting set percentage of marks*
- *If targets are achieved then the C202.1 and C202.2 are attained for that year. Program is expected to set higher targets for the following years as a part of continuous improvement*
- *If targets are not achieved the program should put in place an action plan to attain the target in subsequent years*
- *Similar targets and achievement are to be stated for the other midterm tests/internal assessment instruments*

Course Outcome Attainment:

For example:

Attainment through University Examination: Substantial i.e. 3

Attainment through Internal Assessment: Moderate i.e. 2

Assuming 80% weightage to University examination and 20% weightage to Internal assessment, the attainment calculations will be (80% of University level) + (20% of Internal level) i.e. 80% of 3 + 20% of 2 = 2.4 + 0.4 = 2.8

Note: Weightage of 80% to University exams is only an example. Programs may decide weightages appropriately for University exams and internal assessment with due justification

50% - 50% Weightage = 1.5+1=2.5

Program may decide five attainment levels instead of three

For ex. - Attainment levels:

- Level 5 – Very High - Score from >2.5 to 3
- Level 4 – High - Score from >2 to 2.5
- Level 3 – Medium - Score from >1.5 to 2
- Level 2 – Low - Score from >1 to 1.5
- Level 1 – Very Low- Score from 0.5 to <1

3.3. Attainment of Program Outcomes and Program Specific Outcomes (50)

Program Specific Outcomes - Programming

The student will –

- Participate in planning, implementing and evaluating language-specific team programming solutions to specific business problems
- Complete individual practical experiences in a variety of programming languages and situations
- Employ deductive logic skills to analyze malfunctioning computer programs and use proper debugging and testing skills, modifying them so that they function correctly
- Create computer program documentation through the use of: flow charts, IPO charts, pseudo code, internal program comments, and user instructions
- Demonstrate knowledge of, and the ability to write programs for, the World Wide Web

www….

Program Specific Outcomes - Network Computer Management

The student will –

- Examine the elements supporting data communications and systems
- Show how the various IT components interact to support the Network Communications Management field
- Demonstrate an ability to use the conceptual and applied information to solve business related technological problems and issues
- Recognize and understand the dynamic nature of information technology

Program Specific Outcomes – System Administrator

The student will –

- Design and implement fundamental network security solutions; Configure WLAN products including access points, bridges, client devices and accessories
- Demonstrate proficiency in hardware and software installation and configuration
- Design and implement LAN and WAN infrastructures
- Manage server resources, monitor server performance, and safeguard data

3.3.1. Describe assessment tools and processes used for measuring the attainment of each of the Program Outcomes and Program Specific Outcomes (10)

- *Describe the assessment tools and processes used to gather the data upon which the evaluation of each of the Program Outcomes and Program Specific Outcomes is based indicating the frequency with which these processes are carried out*
- *Describe the assessment processes that demonstrate the degree to which the Program Outcomes and Program Specific Outcomes are attained and document the attainment levels*

List of Assessment tools and processes (5)
Quality/Relevance of assessment tools and processes (5)

- *Direct and Indirect Assessment Tools & Processes*
- *Effective implementation*
- *Assessment methodology*
- *Indirect assessment formats/collection/analysis*
- *Decision making*

3.3.2. Provide results of evaluation of each PO & PSO (40)

- *Program shall set Program Outcome attainment levels for all POs and PSOs*

- The attainment levels by direct (student performance) and indirect (surveys) are to be presented through Program level Course-PO & PSO matrix as indicated

PO Attainment: *Similar table is to be prepared for PSOs*

Results and level of attainment of each PO/PSO (24)

Overall levels of attainment (16)

- *Appropriate attainment levels*

- *Documentary evidences*

- *Attainment from Core courses*

- Direct attainment level of a PO & PSO is determined by taking average across all courses addressing that PO and/or PSO. Fractional numbers may be used for example 1.55
- Indirect attainment level of PO & PSO is determined based on the student exit surveys, employer surveys, co-curricular activities, extracurricular activities etc.

Example:

1. It is assumed that a particular PO has been mapped to four courses C2O1, C3O2, C3O3 and C4O1

2. PO attainment level will be based on attainment levels of direct assessment and indirect assessment

3. For affiliated, non-autonomous colleges, it is assumed that while deciding on overall attainment level 80% weightage may be given to direct assessment and 20% weightage to indirect assessment through surveys from students(largely), employers (to some extent). Program may have different weightages with appropriate justification

4. Assuming following actual attainment levels:

Direct Assessment

- C201 –High (3)
- C302 – Medium (2)
- C303 – Low (1)
- C401 – High (3)

Attainment level will be summation of levels divided by no. of courses 3+2+1+3/4= 9/4=2.25

Indirect Assessment

- Surveys, Analysis, customized to an average value as per levels 1, 2 & 3.
- Assumed level – 2

5. PO Attainment level will be 80% of Direct Assessment + 20% of Indirect Assessment i.e. 1.8 + 0.4 = 2.2, Moderate/Medium level of attainment

Note: Similarly for PSOs

CRITERION 4	Students' Performance	150

Differentiators: 2015 (2013) – Tier - II

Weightage: 150 (100)

Parameters: 6 (4)

1. Enrolment Ratio: Added; based on First year; 20 (--)
2. Success Rate: without backlog added; 40 (30)
3. Academic Performance: Third year (Final Year); 15 (20)
4. Academic Performance: Added; Second year; 15 (--)
5. Placement, Higher Studies & Entrepreneurship: 'E' Added; 40 (30)
6. Professional Activities: 20 (20)

CRITERION 4	Students' Performance	150

Item *(Information - cumulatively for **all the shifts with explicit headings**)*	CAY	CAYm1	CAYm2
Sanctioned intake of the program (***N***)			
Total number of students admitted in first year *minus* number of students migrated to other programs/institutions plus no. of students migrated to this program (***N***1)			
Number of students admitted in 2nd year in the same batch via lateral entry (***N***2)			
Separate division students, if applicable (N3)			
Total number of students admitted in the Program (N1 + N2 + N3)			

Note: PIO/FN quota students, if admitted, details TO BE OBSERVED

Year of entry	***N***1 + ***N***2 + N3 (As defined above)	Number of students who have successfully graduated without backlogs in any semester/year of study (Without Backlog means no compartment or failures in any semester/year of study)			
		I Year	II Year	III Year	IV Year
CAY					
CAYm1					
CAYm2					
CAYm3 (LYG)					
CAYm4 (LYGm1)					
CAYm5 (LYGm2)					

Similarly another table With Backlog

4.1. Enrolment Ratio (20)

Enrolment Ratio= N1/N

Item (Students enrolled at the First Year Level on average basis during the period of assessment)	Marks
>= 90% students	**20**
>= 80% students	18
>= 70% students	16
>= 60% students	14
Otherwise	0

4.2. Success Rate in the stipulated period of the program (40)

4.2.1. Success rate without backlogs in any semester/year of study (25)

SI = (Number of students who have graduated from the program without backlog)/ (Number of students admitted in the first year of that batch and admitted in 2nd year via lateral entry and separate division, if applicable)

Average SI = Mean of Success Index (SI) for past three batches
Success rate without backlogs in any year of study = 25 × Average SI

4.2.2. Success rate in stipulated period (15)

SI= (Number of students who graduated from the program in the stipulated period of course duration)/ (Number of students admitted in the first year of that batch and admitted in 2nd year via lateral entry and separate division, if applicable)

Average SI = mean of Success Index (SI) for past three batches

Success rate = 15 × Average SI

Note: If 100% students clear without any backlog then also total marks scored will be 40 as both 4.2.1 & 4.2.2 will be applicable simultaneously

Data is to be verified for each of the Assessment years

4.3. Academic Performance in Third Year (15)

*Academic Performance = 1.5 * Average API (Academic Performance Index)*

***API** = ((Mean of 3rd Year Grade Point Average of all successful Students on a 10 point scale) or (Mean of the percentage of marks of all successful students in Third Year/10)) x (number of successful students/number of students appeared in the examination)*

Successful students are those who are permitted to proceed to the Final year

4.4. Academic Performance in Second Year (15)

*Academic Performance Level = 1.5 * Average API (Academic Performance Index)*

***API** = ((Mean of 2nd Year Grade Point Average of all successful Students on a 10 point scale) or (Mean of the percentage of marks of all successful students in Second Year/10)) x (number of successful students/number of students appeared in the examination)*

Successful students are those who are permitted to proceed to the Third year

Data is to be verified for atleast one of the Assessment years

4.5. Placement, Higher Studies and Entrepreneurship (40)

Assessment Points = 40 × average placement

Item	CAY	CAY*m*1	CAY*m*2
Total No. of Final Year Students (N)			
No. of students placed in companies or Government Sector (x)			
No. of students admitted to higher studies with valid qualifying scores (GATE or equivalent State or National Level Tests, GRE, GMAT etc.) (y)			
No. of students turned entrepreneur in engineering/technology (z)			
x + y + z =			
Placement Index : (x + y + z)/N	P1	P2	P3
Average placement= (P1 + P2 + P3)/3			

Data is to be verified for atleast one of the Assessment years

4.6. Professional Activities (20)

4.6.1. Professional societies/chapters and organizing engineering events (5)

- Relevant documentary evidences

Professional Society/Chapters (3)
No. and Quality of Engineering events organized (2)

4.6.2. Publication of technical magazines, newsletters, etc. (5)

- The Department publications along with the names of the editors, publishers, etc

Quality and relevance of the contents and print material (3)
Participation of students from the program (2)

4.6.3 Participation in inter-institute events by students of the program of study (10)

- Awards in the events/conferences organized by other institutes

Within the State (2)
Outside the State (3)
Prized/Awards received (5)

CRITERION 5	Faculty Information and Contributions	200

Differentiators: 2015 (2013) – Tier - II

Weightage: 200 (175)

Parameters: 9 (10)

1. SFR: Intake- First year + Lateral entry + Separate Division 20 (20)
2. Cadre Proportion: No cadre zero mark; 25 (20)
3. Qualification: no marks for BE; 25 (30)
4. Retention: 25 (15)
5. Innovations in T-L: Added; 20 (--)
6. FDPs/STTPs: 15 (15)
7. R&D: 30 (60)
8. FPADS: Added; 30 (--)
9. Visiting/Adjunct: Added; 10 (--)

CRITERION 5	Faculty Information and Contributions	200

Name of the Faculty Member	Qualification			Designation (all the designations since joining the institution)	Date of Joining the institution	Distribution of Teaching Load (%)				Academic Research			Sponsored Research (Funded Research)	Consultancy and Product Development	Specialization
						1st Year	UG		PG	Faculty Receiving Ph.D. during the Assessment Years	Ph.D. Guidance	Research Paper Publications			
	Degree (starting from highest degree)	University	Year of Graduation				In program	Other Program							

To observe cumulative information for all the shifts for three assessment years

5.1. Student-Faculty Ratio (SFR) (20)

S:F ratio = N/F; N=No. of students= 3x where x is (approved intake + 20% lateral entry intake+ separate division, if any)

F = No. of faculty = (a + b – c) for every assessment year

a: Total number of full-time regular Faculty serving fully to 2nd, 3rd and 4th year of the this program

b: Total number of full-time equivalent regular Faculty(considering fractional load) serving this program from other Program(s)

c: Total number of full time equivalent regular Faculty(considering fractional load) of this program serving other program(s)

Marks to be given proportionally from a maximum of 20 to a minimum of 10 for average SFR between 15:1 to 20:1, and zero for average SFR higher than 20:1

Note:

No. of Regular faculty calculation considering Regular faculty definition and fractional load; Faculty appointment letters, time table, subject allocation file, salary statements

Faculty Qualification as per AICTE guidelines shall only be counted

5.2. Faculty Cadre Proportion (25)

The reference Faculty cadre proportion is 1(F1):2(F2):6(F3)

$$\text{Cadre Proportion Marks} = \left[\left[\frac{AF1}{RF1} \right] + \left[\frac{AF2}{RF2} \times 0.6 \right] + \left[\frac{AF3}{RF3} \times 0.4 \right] \right] \times 12.5$$

- If AF1 = AF2= 0 then zero marks

- Maximum marks to be limited if it exceeds 25

Example: Intake = 180; Required number of Faculty: 12; RF1= 1, RF2=2 and RF3=9

Case 1: AF1/RF1= 1; AF2/RF2 = 1; AF3/RF3 = 1;

Cadre proportion marks = (1+0.6+0.4) x12.5 = 25

Case 2: AF1/RF1= 1; AF2/RF2 = 3/2; AF3/RF3 = 8/9;

Cadre proportion marks = (1+0.9+0.3) x12.5 = limited to 25

Case 3: AF1/RF1=0; AF2/RF2=1/2; AF3/RF3=11/9; To be observed carefully

Cadre proportion marks = (0+0.3+0.49) x12.5 = 9.87

Faculty Qualification and experience required as per AICTE norms/guidelines for cadre posts shall only be considered

5.3. Faculty Qualification (25)

FQ =2.5 x [(10X +6Y)/F)] where x is no. of regular faculty with Ph.D., Y is no. of regular faculty with M.Tech., F is no. of regular faculty required to comply 1:15 Faculty Student ratio (no. of faculty and no. of students required are to be calculated as per 5.1) Documentary Evidence – Qualification

5.4. Faculty Retention (25)

No. of regular faculty members in CAYm2= CAYm1= CAY=

Item (During the period of assessment keeping CAYm2 as base year)	Marks
>=90% of required Faculty members retained	25
>=75% of required Faculty members retained	20
>=60% of required Faculty members retained	15
>=50% of required Faculty members retained	10
<50% of required Faculty members retained	0

Faculty date of joining; salary statements for each of the assessment years

5.5. Innovations by the Faculty in Teaching and Learning (20)

Contributions to teaching and learning are activities that contribute to the improvement of student learning. These activities may include innovations not limited to-

- *Use of ICT*
- *Instruction delivery*
- *Instructional methods*
- *Assessment*
- *Evaluation and inclusive class rooms that lead to effective, efficient and engaging instruction*

Any contributions to teaching and learning should satisfy the following criteria:

- *The work must be made available on Institute website* ***(4)***
- *The work must be available for peer review and critique* ***(4)***
- *The work must be reproducible and developed further by other scholars* ***(2)***
- *Statement of clear goals, use of appropriate methods, significance of results, effective presentation* ***(10)***

The department/institution is expected to set up appropriate processes for making the contributions available to the public, getting them reviewed and for rewarding

5.6. Faculty as participants in Faculty development/training activities/STTPs (15)

- A Faculty scores maximum five points for participation
- Participation in 2 to 5 days Faculty development program: 3 Points
- Participation >5 days Faculty development program: 5 points

Name of the Faculty	Max. 5 per Faculty		
	CAY	CAY***m***1	CAYm2
Sum			
RF= Number of Faculty required to comply with 15:1 Student-Faculty ratio as per 5.1			
Assessment = 3 × (Sum/0.5RF) (Marks limited to 15)			
Average assessment over three years (Marks limited to 15) =			

5.7. Research and Development (30)

5.7.1. Academic Research (10)

Academic research includes research paper publications, Ph.D. guidance, and faculty receiving Ph.D. during the assessment period.

- Number of quality publications in refereed/SCI Journals, citations, Books/Book Chapters etc. (6)
- Ph.D. guided /Ph.D. awarded during the assessment period while working in the institute (4)

5.7.2. Sponsored Research (5)

- Funded research from outside
- Provide a list with Project Title, Funding Agency, Amount and Duration

Funded research from outside; Cumulative during Assessment years:

- Amount >20 Lacs – 5 Marks
- Amount >=16Lacs and < =20 Lacs – 4 Marks
- Amount >=12 Lacs and < 16 Lacs – 3 Marks
- Amount >=8 Lacs and < 12 Lacs – 2 Marks
- Amount >=4 Lacs and < 8 Lacs – 1 Mark
- Amount < 4 Lacs – 0 Mark

5.7.3. Development activities (10)

Provide details:

- Product Development
- Research laboratories
- Instructional materials
- Working models/charts/monograms etc.

5.7.4. Consultancy (from Industry) (5)

- Provide a list with Project Title, Funding Agency, Amount and Duration

Funded research from outside; Cumulative during Assessment years:

- Amount >10 Lacs – 5 Marks
- Amount >=8Lacs and <=10 Lacs – 4 Marks
- Amount >=6 Lacs and < 8 Lacs – 3 Marks
- Amount >=4 Lacs and < 6 Lacs – 2 Marks
- Amount > =2 Lacs and < 4 Lacs – 1 Mark
- Amount < 2 Lacs – 0 Mark

Tier - I
Sponsored Research (20)

Funded research from outside; Cumulative during Assessment years:

- Amount > 50 Lacs – 20 Marks,
- Amount > 40 and ≤ 50 Lacs – 15 Marks,
- Amount >30 and ≤ 40 Lacs – 10 Marks,
- Amount ≥ 15 and ≤30 Lacs– 5 Marks,
- Amount< 15 Lacs – 0 Marks

Consultancy (from Industry) (20)

Funded research from outside; Cumulative during Assessment years:

- Amount>10 Lacs – 20 Marks,
- Amount≤10 and ≥ 8 Lacs – 15 Marks,
- Amount< 8and≥6 Lacs– 10 Marks,
- Amount < 6 and ≥4 Lacs–5 Marks,
- Amount< 4 and ≥2 Lacs– 2 Marks,
- Amount <2 Lacs – 0 Mark

5.8. Faculty Performance Appraisal and Development System (FPADS) (30)

The assessment is based on:

- A well-defined system for faculty appraisal for all the assessment years (10)
- Its implementation, transperancy and effectiveness (20)

5.9. Visiting/Adjunct/Emeritus Faculty etc. (10)

Adjunct faculty also includes Industry experts. Provide details of participation and contributions in teaching and learning and /or research by visiting/adjunct/Emeritus faculty etc. for all the assessment years:

- Provision of inviting visiting/adjunct /Emeritus faculty (1)
- Minimum 50 hours per year interaction with adjunct faculty from industry/retired professors etc.

Minimum 50 hours interaction in a year will result in 3 marks for that year; 3 marks x 3 years = 9 marks

CRITERION 6	Facilities and Technical Support	80

Differentiators: 2015 (2013) – Tier - II

Weightage: 80 (125)

Parameters: 2 (4)

1. Laboratories: 65 (60; Class Rooms-30, Faculty Rooms-20)
2. Technical Manpower Support: 15 (15)

CRITERION 6	Facilities and Technical Support	80

6.1. Adequate and well equipped laboratories, and technical manpower (30)

S N	Name of the Laboratory	No. of students per setup (Batch Size)	Name of the Important equipment	Weekly utilization status (all the courses for which the lab is utilized)	Technical Manpower support		
					Name of the technical staff	Designation	Qualification
1.							
N.							

6.2. Additional facilities created for improving the quality of learning experience in laboratories (25)

Sr. No.	Facility Name	Details	Reason(s) for creating facility	Utilization	Areas in which students' are expected to have enhanced learning	Relevance to POs/PSOs
1.						
N.						

6.3. Laboratories: Maintenance and overall ambiance (10)

Self-Explanatory

6.4. Project laboratory (5)

Mention facility & Utilization

6.5. Safety measures in laboratories (10)

Sr. No.	Name of the Laboratory	Safety measures
1.		
N.		

CRITERION 7	Continuous Improvement	50

7.1. Actions taken based on the results of evaluation of each of the POs & PSOs (20)

- Identify the areas of weaknesses in the program based on the analysis of evaluation of POs & PSOs attainment levels
- Measures identified and implemented to improve POs & PSOs attainment levels for the assessment years

Examples of analysis and proposed action

Sample 1:

- Course outcomes for a laboratory course did not measure up, as some of the lab equipment did not have the capability to do the needful (e.g., single trace oscilloscopes available where dual trace would have been better, or, non-availability of some important support software etc.)

- Action taken-Equipment up-gradation was carried out (with details of up-gradation)

Sample 2:

- In a course on EM theory student performance has been consistently low with respect to some COs
- Analysis of answer scripts and discussions with the students revealed that this could be attributed to a weaker course on vector calculus
- Action taken-revision of the course syllabus was carried out (instructor/text book changed too has been changed, when deemed appropriate)

Sample 3:

- In a course that had group projects it was determined that the expectations from this course about PO3 (like: “to meet the specifications with consideration for the public health and safety, and the cultural, societal, and environmental considerations”) were not realized as there were no discussions about these aspects while planning and execution of the project
- Action taken- Project planning, monitoring and evaluation included in rubrics related to these aspects

POs & PSOs Attainment Levels and Actions for improvement – CAY

	Target Level	Attainment Level	Observations
PO1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.			
Action 1: Action n:			
PO2: Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences			

Similar Tables should be presented for all POs & PSOs

7.2. Academic Audit and actions taken thereof during the period of Assessment (10)

- Assessment shall be based on conduct and actions taken in relation to Continuous Improvement (10)

Assessment criteria, frequency, conduct mechanism, action plan, implementation and effectiveness

7.3. Improvement in Placement, Higher Studies and Entrepreneurship (10)

Assessment is based on improvement in:

- Placement: number, quality placement, core industry, pay packages etc. (5)
- Higher studies: performance in GATE, GRE, GMAT, CAT etc., and admissions in premier institutions (3)
- Entrepreneurs (2)

7.4. Improvement in the quality of students admitted to the program (10)

Assessment is based on improvement in terms of ranks/score in qualifying –

- State level/National level entrances tests
- Percentage marks in Physics, Chemistry and Mathematics in 12th Standard
- Percentage marks of the lateral entry students

CRITERION 8	First Year Academics	50

8.1. First Year Student-Faculty Ratio (FYSFR) (5)

Assessment = (5 × 15)/Average FYSFR (Limited to Max. 5)

8.2. Qualification of Faculty Teaching First Year Common Courses (5)

Assessment of qualification = (5*x* +3*y*)/*RF*
x= Number of Regular Faculty with Ph.D
y = Number of Regular Faculty with Post-graduate qualification
RF= Number of faculty members required as per SFR of 15:1

8.3. First Year Academic Performance (10)

Academic Performance = ((Mean of 1st Year Grade Point Average of all successful Students on a 10 point scale) or (Mean of the percentage of marks in First Year of all successful students/10)) x *(number of successful students/number of students appeared in the examination)*
Successful students are those who are permitted to proceed to the Second year

8.4. Attainment of Course Outcomes of first year courses (10)

8.5. Attainment of Program Outcomes of all first year courses (20)

CRITERION 9	Student Support Systems	50

9.1 Mentoring system to help at individual level (5)

- Type of mentoring: Professional guidance / career advancement / course work specific / laboratory specific / all-round development
- Number of faculty mentors
- Number of students per mentor
- Frequency of meeting

Terms of reference, implementation & effectiveness (during interaction also)

9.2. Feedback analysis and reward /corrective measures taken, if any (10)

- Feedback collected for all courses: YES/NO
- Feedback questionnaire
- Specify the feedback collection process
- Average Percentage of students who participated
- Specify the feedback analysis process
- Basis of reward / corrective measures, if any: Indices used for measuring quality of teaching and learning
- Summary of the index values for all courses/teachers
- Number of corrective actions taken

Implementation & Effectiveness
(during interaction also)

9.3. Feedback on facilities (5)

Assessment is based on -

- Feedback collection
- Analysis and corrective action taken

9.4. Self Learning (5)

The institution needs to specify –

- *Facilities*
- *Materials*
- *Scope for self-learning / learning beyond syllabus*
- *Webinars*
- *Podcast*
- *MOOCs*
- *Evaluate effectiveness*

- *Scope for self learning (2)*
- *Facilities and its effective utilization (3)*

9.5. Career Guidance, Training, Placement (10)

The institution may specify –

- *Facility*
- *Management*
- *Effectiveness for career guidance including counseling for higher studies*
- *Campus placement support*
- *Industry interaction for training/internship/placement, etc.*

Facility (2), Counseling for higher studies (2), Pre-placement training (3) Placement process and support (3)

9.6. Entrepreneurship Cell (5)

The institution may specify –

- *Facility*
- *Management*
- *Effectiveness in encouraging entrepreneurship and incubation*
- *Success stories for each of the assessment years*

Entrepreneurship initiative (1), Students benefit (4)

9.7. Co-curricular and Extra-curricular Activities (10)

The institution may specify –

- *Co-curricular and extra-curricular activities*

CRITERION 10	Governance, Institutional Support and Financial Resources	120

Differentiators: 2015 (2013) – Tier - II

Weightage: 120 (75)

Parameters: 4 (8)

1. Organization, Governance & Transparency: 40 (10)
2. Institute Budget Allocation, Utilization: 30 (10)
3. Program Budget Allocation, Utilization: 30 (10)
4. Library & Internet: 20 (25)

Deleted – Campus Infrastructure, Facilities, Safety norms, emergency medical care and first aid

CRITERION 10	Governance, Institutional Support and Financial Resources	120

10.1 Organization, Governance and Transparency (40)

10.1.1. State the Vision and Mission of the Institute (5)

Vision statement typically indicates aspirations and Mission statement states the broad approach to achieve aspirations

Availability (2)

Appropriateness/relevance (3)

- *Availability of statement on Institute website*
- *Availability at Central facilities such as Library, Computer Centers, Principal Chambers etc.*
- *Availability of one set of statements in each of the departments*
- *Availability in Institute level documents*

10.1.2. Governing body, administrative setup, functions of various bodies, service rules, procedures, recruitment and promotional policies (10)

- List the governing, senate, and all other academic and administrative bodies; their memberships, functions, and responsibilities; frequency of the meetings; and attendance therein (4)
- The published rules including service rules, policies and procedures; year of publication shall be listed (3)
- Minutes of the meetings, Action taken reports, extent of awareness among the employees/students (3)

10.1.3. Decentralization in working and grievance redressal mechanism (10)

- List the names of the faculty members who have been delegated powers for taking administrative decisions (1)
- Grievance Redressal cell (2)
- Action taken report for the above point (7)

10.1.4. Delegation of financial powers (10)

- Institution should explicitly mention financial powers delegated to the Principal, Heads of Departments and relevant in-charges (3)
- Demonstrate the utilization of financial powers for each year of the assessment years (7)

10.1.5. Transparency and availability of correct/unambiguous information in public domain (5)

- Information on policies, rules, processes and dissemination of this information to stakeholders is to be made available on the web site (2)
- Disseminating of information about student, faculty and staff (3)

TIER – I: Institutional Strategic Plan – effective implementation and monitoring

10.2 Budget Allocation, Utilization, and Public Accounting at Institute level (30)

Summary of current financial year's budget and actual expenditure incurred (for the institution exclusively) in the three previous financial years.

Budget formulation, finalization, approval process
Requirement – allocation –adequacy – justification thereof

Total Income at Institute level: For CFY, CFYm1, CFYm2 & CFYm3

For CFY: Similar tables are to be prepared for CFYm1, CFYm2 & CFYm3

Total Income:				Actual expenditure (till …):			Total No. of students:
Fee	Govt.	Grant(s)	Other Sources (specify)	Recurring including Salaries	Non-recurring	Special Projects/Any other, specify	Expenditure per student

Items	Budgeted in CFY	Actual expenses in CFY (till …)	Budgeted in CFY***m***1	Actual Expenses in CFY***m***1	Budgeted in CFY***m***2	Actual Expenses in CFY***m***2	Budgeted in CFY***m***3	Actual Expenses in CFY***m***3
Infrastructure Built-Up								
Library								
Laboratory equipment								
Laboratory consumables								
Teaching and non-teaching staff salary								
Maintenance and spares								
R&D								
Training and Travel								
Miscellaneous expenses *								
Others, specify								
Total								

* Items to be mentioned

10.2.1 Adequacy of budget allocation (10)

- The institution needs to justify that the budget allocated over the years was adequate

Quantum of budget allocation (5), Justification (5)

10.2.2 Utilization of allocated funds (15)

- The institution needs to state how the budget was utilized during assessment years

10.2.3 Availability of the audited statements on the institute's website (5)

- The institution needs to make audited statements available on its website.

Balance sheet; effective utilization; random verification for at least two of the three assessment years

10.3 Program Specific Budget Allocation, Utilization (30)
Total Budget at program level: For CFY, CFYm1, CFYm2 & CFYm3

Budget formulation, finalization, approval, program allocation process Requirement – allocation –adequacy – justification thereof

For CFY: Similar tables are to be prepared for CFYm1, CFYm2 & CFYm3.

Total Budget:		Actual expenditure (till …):		Total No. of students:
Non recurring	Recurring	Non Recurring	Recurring	Expenditure per student

Items	Budgeted in CFY	Actual expenses in CFY (till …)	Budgeted in CFY***m***1	Actual Expenses in CFY***m***1	Budgeted in CFY***m***2	Actual Expenses in CFY***m***2	Budgeted in CFY***m***3	Actual Expenses in CFY***m***3
Laboratory equipment								
Software								
Laboratory consumable								

Items	Budgeted in CFY	Actual expenses in CFY (till …)	Budgeted in CFY*m*1	Actual Expenses in CFY*m*1	Budgeted in CFY*m*2	Actual Expenses in CFY*m*2	Budgeted in CFY*m*3	Actual Expenses in CFY*m*3
R & D								
Training and Travel								
Miscellaneous expenses *								
Total								

* Items to be mentioned

10.3.1. Adequacy of budget allocation (10)

Program needs to justify that the budget allocated over the assessment years was adequate for the program

Quantum of budget allocation (5), Justification (5)

10.3.2. Utilization of allocated funds (20)

Program needs to state how the budget was utilized during the last three assessment years

Balance sheet; effective utilization; random verification for atleast two of the three assessment years

10.4. ***Library and Internet*** (20)

- AICTE zero deficiency report for all the assessment years
- Effective availability
- Purchase records
- Utilization of facilities/equipment
- Documentation

10.4.1. Quality of learning resources (hard/soft) (10)

- Relevance of available learning resources including e-resources (7)
- Accessibility to students (3)

10.4.2. Internet (10)

- Name of the Internet provider
- Available bandwidth (4)
- Wi Fi availability (2)
- Internet access in labs, classrooms, library and offices of all Departments (2)
- Security arrangements (2)

Thanks