

**SELF ASSESSMENT REPORT (SAR)
TIER - II UG Engineering Programs
First Time Accreditation
(From 1st June, 2015)**

Dr. J.N. Jha

Principal

MIT, Muzaffarpur

SAR Contents

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PART A: Institutional Information

1. Name and Address of the Institution:
2. Name and Address of the Affiliating University:
3. Year of establishment of the Institution:
4. Type of the Institution:

University Deemed

University Government

Aided Autonomous

Affiliated

PART A: Institutional Information

5. Ownership Status:

Central Government

State Government

Government Aided

Self financing

Trust

Society

Section 25 Company

Any Other (Please specify)

Provide Details:

6. Other Academic Institutions of the Trust/Society/Company etc., if any:

Name of the Institution(s)	Year of Establishment	Programs of Study	Location

* **Note:** Add rows as needed

7. Details of all the programs being offered by the institution under consideration:

S.No.	Program Name	Year of Start	Intake	Increase in intake, if any	Year of increase	AICTE Approval	Accreditation Status*

Note: Add rows as needed

7. Details of all the programs being offered by the institution under consideration

S.N.	Program Name	Year of start	Intake	Increase in Intake if any	Year of Increase	AICTE Approval	Accreditation status
1	Civil	1954	60	NA	NA	Yes	Applying first time
2	Mechanical	1960	60	NA	NA	Yes	Applying first time
3	Electrical	1960	60	NA	NA	Yes	Applying first time
4	ECE	2001	40	NA	NA	Yes	Applying first time
5	IT	2001	40	NA	NA	Yes	Applying first time
6	LT	1986	15	NA	NA	Yes	Applying first time
6	Pharmacy	1978	15	NA	NA	Yes	Eligible but not applied
7	Thermal Engineering	2017	18	NA	NA	Yes	Not Eligible
7	Machine Design	2017	18	NA	NA	Yes	Not Eligible

8. Programs to be considered for Accreditation vide this application:

S. No.	Program Name
1	
2	
N	

9.Total number of employees in the institution:

A. Regular* Employees (Faculty and Staff):

Items		CAY		CAYm1		CAYm2	
		Min	Max	Min	Max	Min	Max
Faculty in Engineering	M						
	F						
Faculty in Maths, Science & Humanities	M						
	F						
Non-teaching staff	M						
	F						

* Means –

- Full time on roll with prescribed pay scale. An employee on contract for a period of more than two years AND drawing consolidated salary equal or higher than applicable gross salary shall only be counted as a regular employee
- Prescribed pay scales means pay scales notified by the AICTE/Central Government and implementation as prescribed by the State Government. In case State Government prescribes lesser consolidated salary for a particular cadre then same will be considered as reference while counting faculty as a regular faculty

9.Total number of employees in the institution: A. Regular* Employees (Faculty and Staff):
 (Minimum 75% should be Regular/Full Time faculty and the remaining shall be Contractual)
 Faculty as per AICTE norms and standards)

Items		2013-14		2012-13		2011-12		2010-11	
		Min	Max	Min	Max	Min	Max	Min	Max
Faculty in Engineering	M	70	71	71	72	71	71	69	71
	F	16	16	16	17	16	17	14	17
Faculty in science & Humanities	M	03	03	03	03	03	04	03	04
	F	06	06	06	06	06	06	05	06
Non-teaching staff	M	111	112	140	140	138	140	130	138
	F	16	17	15	16	15	16	15	15

CAY: Current Assessment Year

CAYm1: Current Assessment Year minus 1

CAYm2: Current Assessment Year minus 2

B. Contractual Staff Employees (Faculty and Staff): (Not covered in Table A):

Items		CAY		CAYm1		CAYm2	
		Min	Max	Min	Max	Min	Max
Faculty in Engineering	M						
Faculty in Maths, Science & Humanities	F						
Non-teaching staff	M						
	F						

Contractual Staff:
 (The contractual faculty who have taught for 2 consecutive semesters in the corresponding academic year on full time)

Items		2013-14		2012-13		2011-12		2010-11	
		Min	Max	Min	Max	Min	Max	Min	Max
Faculty in Engineering	M	51	52	31	34	30	34	22	30
	F	35	35	32	35	31	35	06	06
Faculty in science & humanities	M	03	06	06	06	06	06	06	06
						09	10		
	F	06	06	10	10			05	05
Non-teaching Staff	M	88	88	60	60	57	60	10	10
	F	28	29	14	14	14	14	05	05

10. Total number of Engineering Students:

CAY: Current Assessment Year, CAYm1: Current Assessment Year minus 1

CAYm2: Current Assessment Year minus 2

(separately for undergraduate, postgraduate Program)

Year	CAY	CAYm1	CAYm2	CAYm3
Total no. of boys	546	537	520	530
Total no. of girls	131	140	157	147
Total no. of students	677	677	677	677

11. Vision of the Institution:

12. Mission of the Institution:

- **Vision** (*Typically indicates aspirations*)
 - ✓ To serve the nation and society by providing skilled and well developed human resource through excellence in technical education and research
- **Mission** (*Broad approach to achieve aspirations*)
 - ✓ To provide state-of-the-art undergraduate and postgraduate programs to bright students for overall development.
 - ✓ To promote leadership and professionalism among the students and faculty by providing right ambience.
 - ✓ To encourage the innovation and research by undertaking project and developmental activities with industries, institutions and government.

13. Contact Information of the Head of the Institution and NBA coordinator, if designated:

i Name: Dr. J.N.Jha

Designation: Principal

Mobile No:9872843371

Email id: principal@mitmuzaffarpur.org, jagadanand@gmail.com

ii. NBA coordinator, if designated:

Name: Dr. Akash Priyadarshee

Designation: Assistant Professor (Civil Engg. Deptt.)

Mobile No:9914353124

Email id:akashpriyyadarshee1@gmail.com

PART B - CRITERIA SUMMARY

Criteria No.	Criteria	Weightage /Marks
Programme level Criteria		
1.	Vision, Mission and Program Educational Objectives	60
2.	Program Curriculum and Teaching – Learning Processes	120
3.	Course Outcomes and Program Outcomes	120
4.	Students' Performance	150
5.	Faculty Information and Contributions	200
6.	Facilities and Technical Support	80
7.	Continuous Improvement	50
Institute Level Criteria		
8.	First Year Academics	50
9.	Student Support Systems	50
10.	Governance, Institutional Support and Financial Resources	120

Criteria-1: Vision, Mission and Program Educational Objectives(60)

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

- ✓ Availability (1) + Appropriateness (2) + Consistency (2)

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

- ✓ Availability & Correctness (3to 5)

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

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

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

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

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

- Matrix Préparation (5) + Consistency /Justification (10)

Vision and Mission

- Vision is a **futuristic statement** that the institution / department would like to achieve over a long period of time.
- Mission statements are essentially the **means to achieve the vision (action statement)**.
- Vision statement typically **indicates aspirations** and Mission statement states the broad **approach to achieve aspirations**.
- Institute Vision and Mission statements to ensure consistency with the department Vision and Mission statements .
- **Publish and Disseminate among the stakeholders.**

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

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

Institute (MIT)	Department (Civil Engg. Deptt.)
<p>Vision (Typically indicates aspirations)</p> <ul style="list-style-type: none">• To serve the nation and society by providing skilled and well developed human resource through excellence in technical education and research	<p>Vision (Typically indicates aspirations)</p> <ul style="list-style-type: none">• To get recognized as prestigious civil engineering program at national and international level through continuous education, research and innovation
<p>Mission (Broad approach to achieve aspirations)</p> <ul style="list-style-type: none">✓ To provide state-of-the-art undergraduate and postgraduate programs to bright students for overall development.✓ To promote leadership and professionalism among the students and faculty by providing right ambience.✓ To encourage the innovation and research by undertaking project and developmental activities with industries, institutions and government.	<p>Mission (Broad approach to achieve aspirations)</p> <ul style="list-style-type: none">✓ To create the environment for innovative and smart ideas for generation of professionals to serve the nation and world with latest technologies in Civil Engineering.✓ To develop intellectual professionals with skill for work in industry, academia and public sector organizations and entrepreneur with their technical capabilities to succeed in their fields.✓ To build up competitiveness, leadership, moral, ethical and managerial skill.

1.2. State the Program Educational Objectives (PEOs) (5)- Availability & Correctness (3to 5)

- **Indicative: (Five broad categories)**

- ✓ Preparation (Employment/Higher studies),

- ✓ Core competence(Discipline knowledge)

- ✓ Breadth

- ✓ Professionalism

- ✓ Life long learning(Environment)

- ❖ **Program Education Objectives (PEO):**Preparing the graduates to attain career and professional accomplishments within a few year (3-5 years) of graduation

Program Education Objectives (PEO)- Civil Engineering Department

- ✓ 1. To train the students so that they can work and contribute to the infrastructure development projects being undertaken by Govt. and private or any other sector companies.
- ✓ 2. To train students in such as a way that they can pursue higher studies so that they can contribute to the teaching profession/ research and development of civil engineering and other allied fields.
- ✓ 3. To train students in a manner that they should function effectively in the multicultural and multidisciplinary groups for the sustainable development and growth of civil engineering projects and profession.

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

- Describe where (websites, curricula, posters etc.) the Vision, Mission and PEOs are published
- Detail the process which ensures awareness among internal and external stakeholders
- Effective process implementation
- Internal stakeholders may include Management, Governing Board Members, faculty, support staff, students etc.
- External stakeholders may include employers, industry, alumni, funding agencies etc.

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

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

Adequacy (2) + Process (2) + Extent of Awareness (6)- (*Committee at Institute and Department level*)

- ✓ Department website, Students/Faculty login ID, HOD' office/Class room/Laboratories, Notice boards
- ✓ Dissemination to all stakeholders of programs through
 - Faculty meetings,
 - Student awareness workshops,
 - Student induction programs,
 - Alumni meet,
 - Placement drives,
 - Industry-institute interaction

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

- Articulate 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

Vision and Mission statement development process may include following steps:

- **Formulation of Committee at Institute-department level**

- **Step I – Brainstorming**

- ✓ 1st level - Promoters, Administrators, Faculty

- ✓ 2nd level – Current students

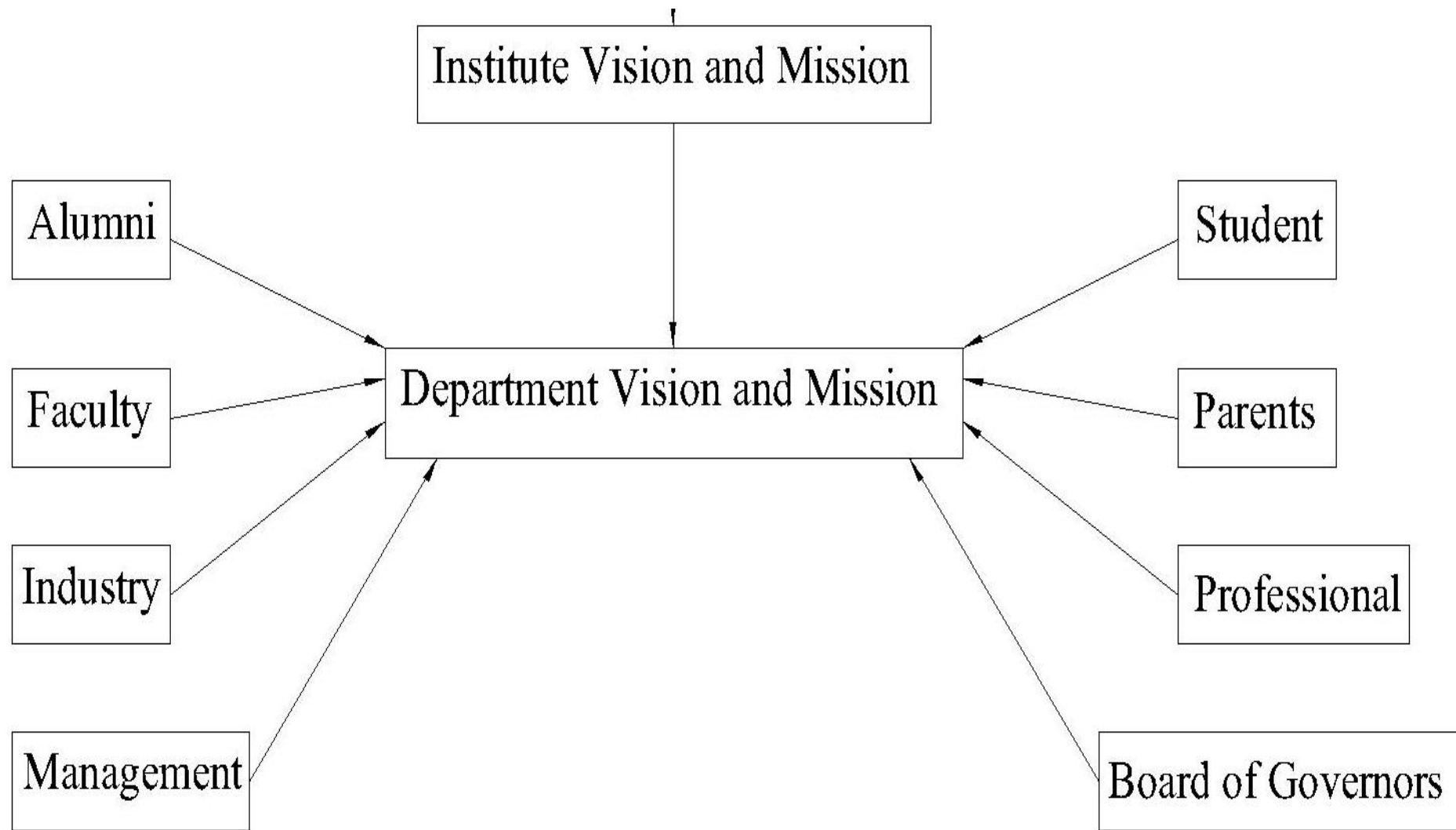
- ✓ 3rd level – Employer, Alumni, Industry Experts

- **Step II – Benchmarking with the similar category Institutions:
Understanding Vision and Mission**

- **Step III – Validation by the experts from academia and industry**

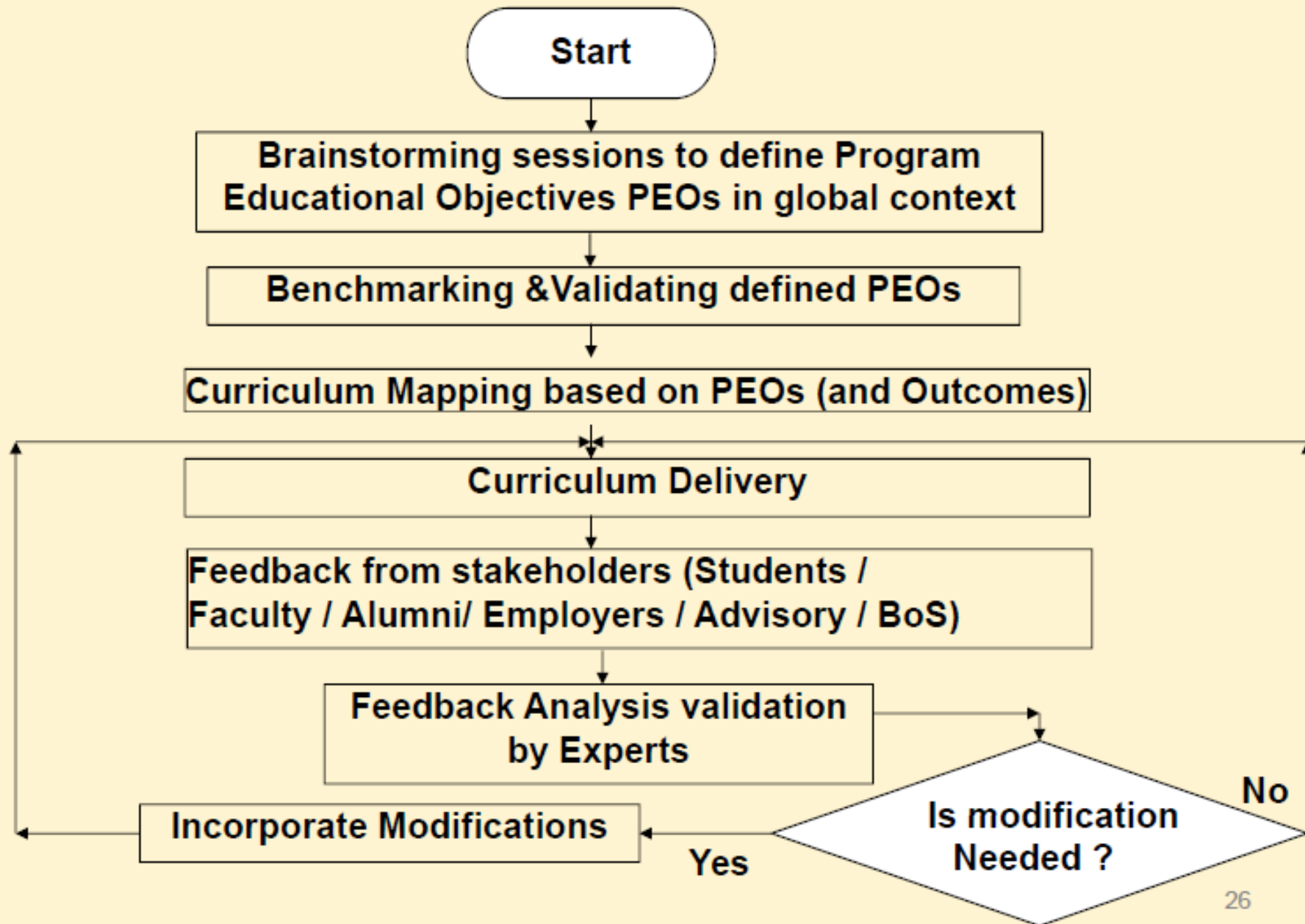
- **Step IV – Wide publicity in the Institution**

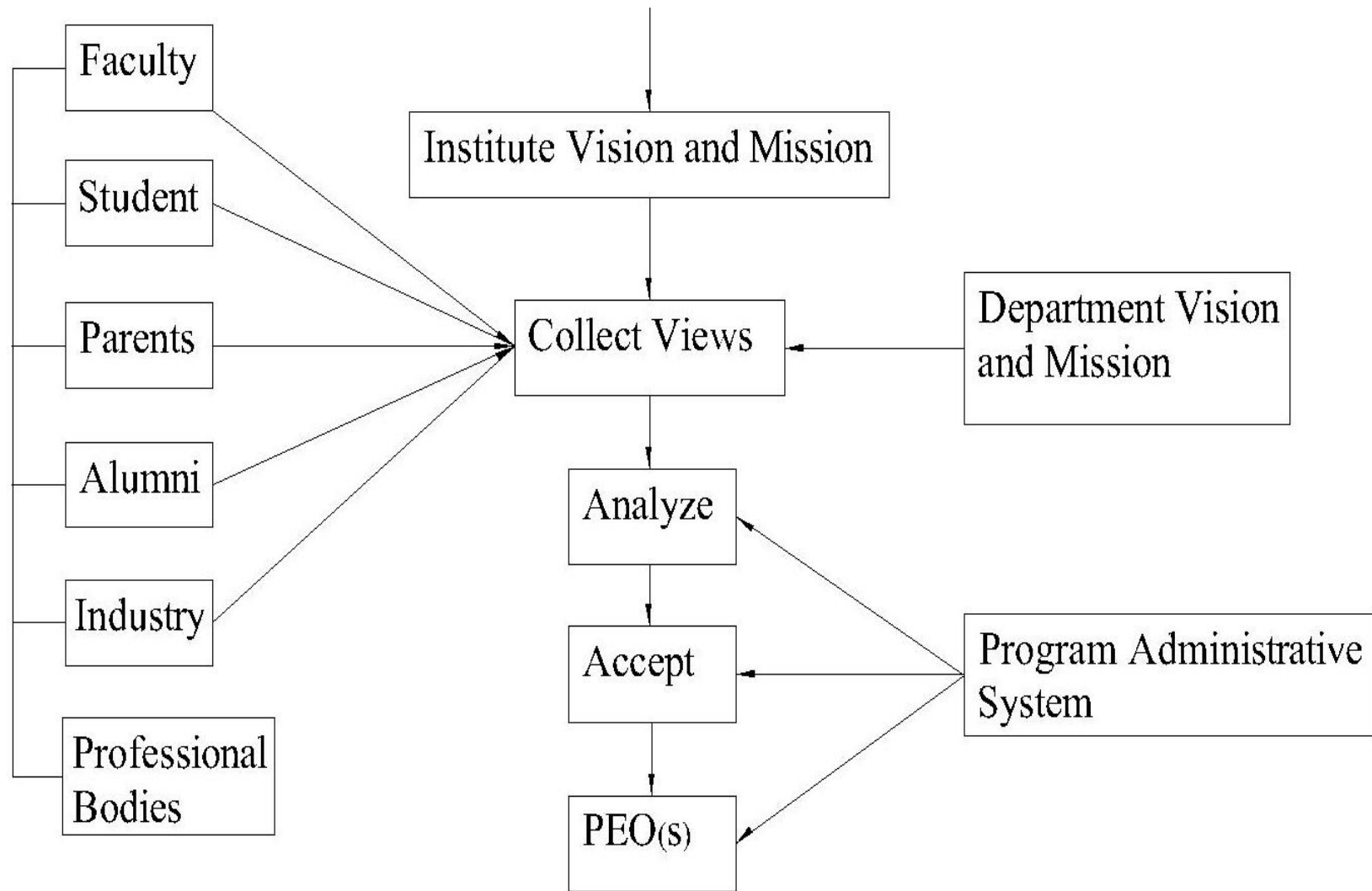
- **Step V –Review in closed loop every 5-7 years**



Flow Chart of Defining Vision and Mission of the Department

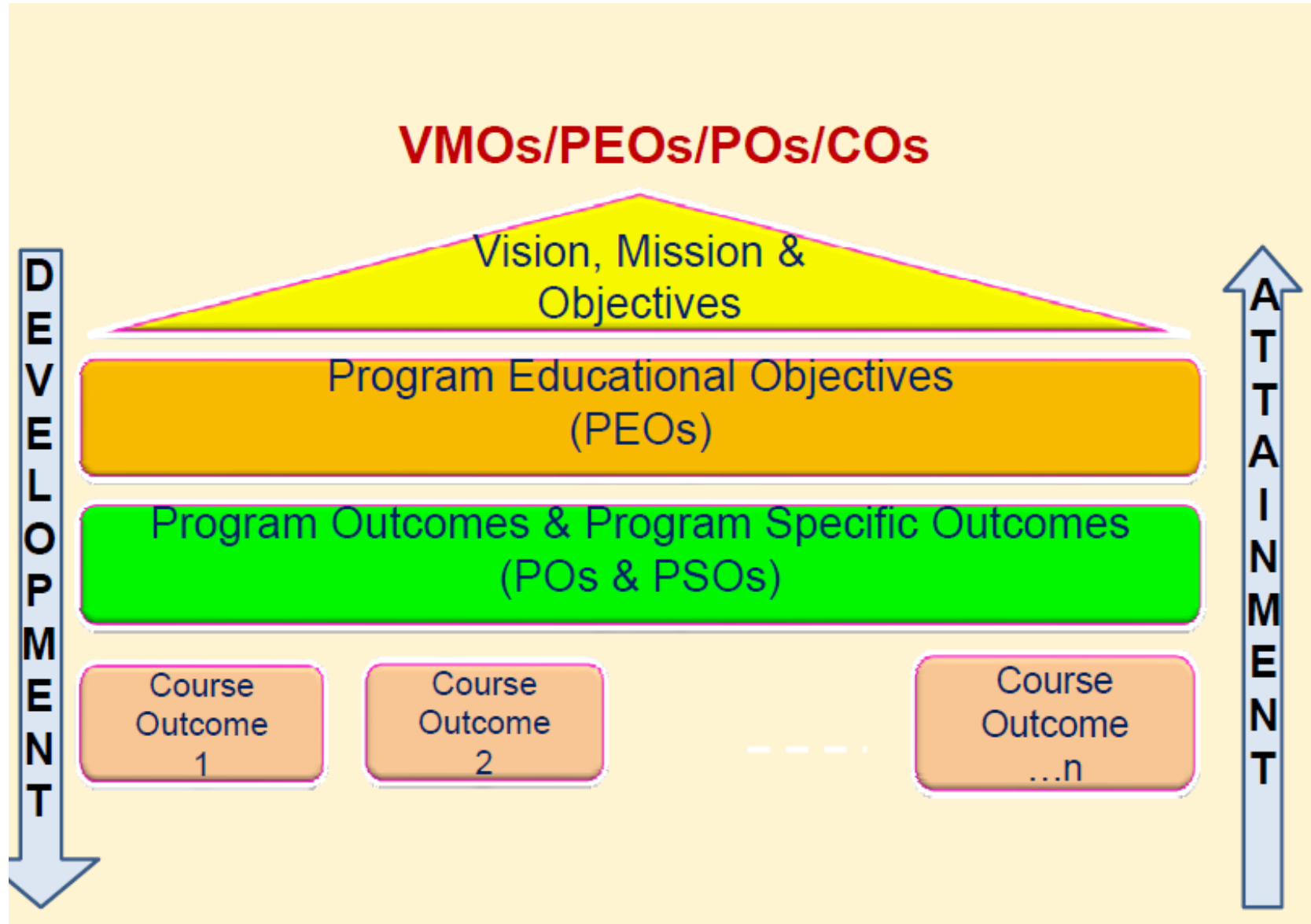
PEOs Creation & Validation Process



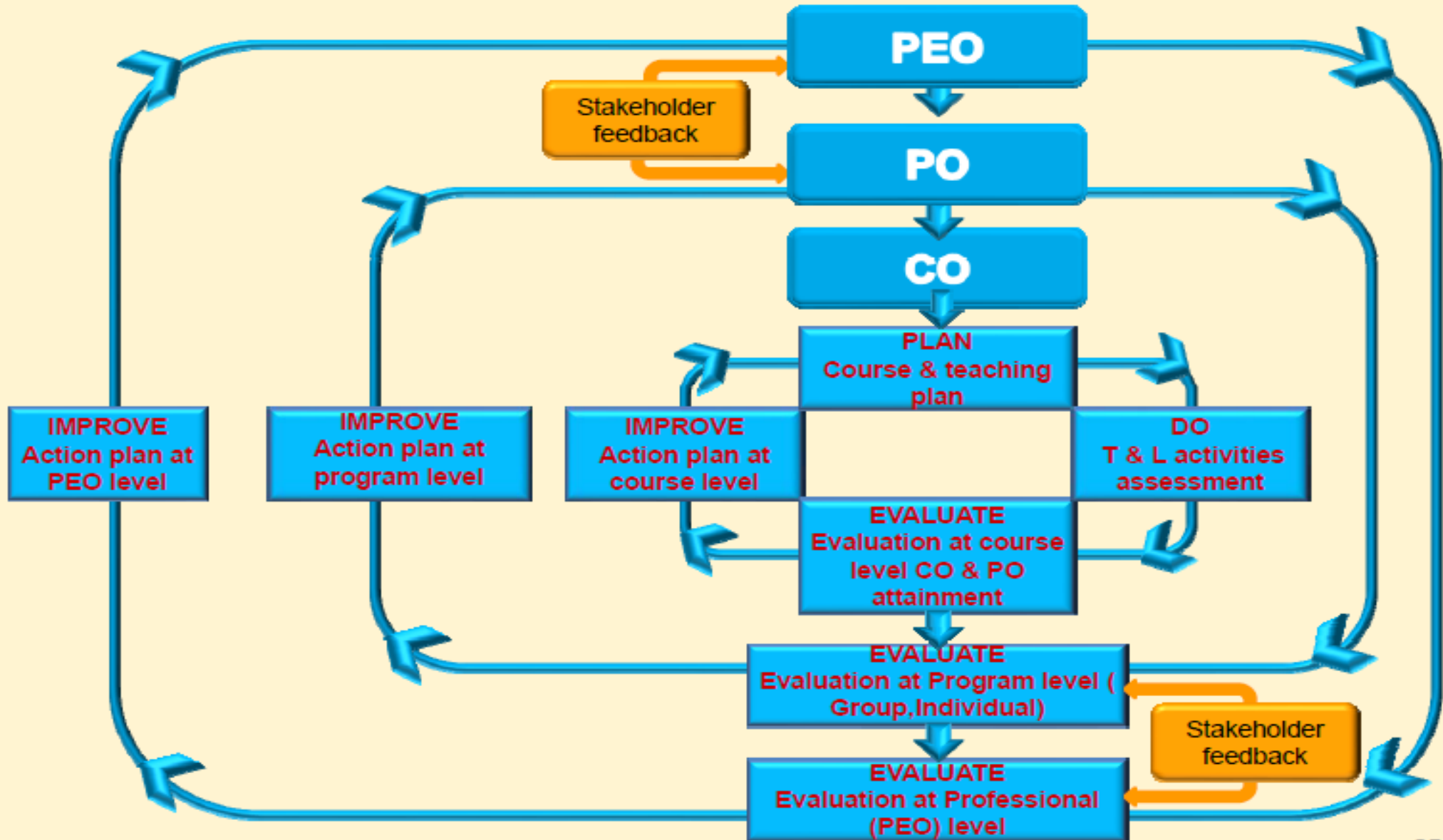


Flow Chart of Defining Program Education Objectives (PEO) of the Department

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



Process Cycles



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

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

(Generate a “Mission of the Department – PEOs matrix” with justification and rationale of the mapping)

- M1, M2, . . . Mn are distinct elements of Mission statement.
- Enter correlation levels 1, 2 or 3 defined as: 1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

PEO Statements	M1	M2	...	Mn
PEO1:				
PEO2:				
PEO3:				

1.5. Establish consistency of PEOs with Mission of the Department (15) : Matrix Préparation (5) + Consistency /Justification (10)- Example

- **Program Education Objectives (PEO)- Civil Engineering Department**

- ✓ 1. To train the students so that they can work and contribute to the infrastructure development projects being undertaken by Govt. and private or any other sector companies.
- ✓ 2. To train students in such as a way that they can pursue higher studies so that they can contribute to the teaching profession/ research and development of civil engineering and other allied fields.
- ✓ 3. To train students in a manner that they should function effectively in the multicultural and multidisciplinary groups for the sustainable development and growth of civil engineering projects and profession

- **Mission Statements**

- ✓ To create the environment for innovative and smart ideas for generation of professionals to serve the nation and world with latest technologies in Civil Engineering.
- ✓ To develop intellectual professionals with skill for work in industry, academia and public sector organizations and entrepreneur with their technical capabilities to succeed in their fields.
- ✓ To build up competitiveness, leadership, moral, ethical and managerial skill.

Matrix Préparation (5) + Consistency /Justification (10)-

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

PEO	Mission of the Department		
	I	II	III
1	M	H	L
2	H	H	M
3	M	M	H

PEOs and Mission Statement mapping - justification:

Mapping	Justification
PEO1 with M1 and Mn	
PEO2 with M2	
PEOn with M3 & M4	

Mapping and justification of PEOs and Mission Statement of Civil Engg. Deptt.

Mapping and Justification			
Mission	PEO1	PEO2	PEO3
To create the environment for innovative and smart ideas for generation of professionals to serve the nation and world with latest technologies in Civil Engineering.	Work for the development of Infrastructure for Govt. /Private sector	Contribute to the research and development of civil engineering	
To develop intellectual professionals with skill for work in industry, academia and public sector organizations and entrepreneur with their technical capabilities to succeed in their fields	Work for the development of Infrastructure for Govt. /Private sector	Pursue higher studies so that can contribute to the teaching profession	Function effectively in the multicultural and multidisciplinary groups for the civil engineering projects and profession
To build up competitiveness, leadership, moral, ethical and managerial skill.	Work for the development of Infrastructure for Govt. /Private sector		Function effectively in the multicultural and multidisciplinary groups for the civil engineering projects and profession

Query/question, if any,Please

Acknowledgement

All the known or unknown sources used during making the presentation are duly acknowledged, without the use of their data/information, the presentation would not have been so informative.

Thank you
for
listening!



Handwritten signature in red ink.

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TIER - II UG Engineering Programs
First Time Accreditation
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PART B - CRITERIA SUMMARY

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10.	Governance, Institutional Support and Financial Resources	120

Criteria -2-120

2- Program Curriculum and Teaching – Learning Processes

Definitions

- **Course Outcomes (CO):** Student is expected to know and be able to do at the end of each course

Program Specific Outcomes (PSO): What the graduates of a specific UG Program should be able to do at the time of graduation.

- **Program outcomes (PO):** What the graduates of a UG Program should be able to do at the time of graduation.

Program outcomes (PO)

1.	Engineering knowledge	7.	Environment and sustainability
2.	Problem analysis	8.	Ethics
3.	Design/development of solutions	9.	Individual and team work
4.	Conduct investigations of complex problems	10.	Communication
5.	Modern tool usage	11.	Project management and finance
6.	The engineer and society	12.	Life-long learning

- **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

- **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Program Specific Outcomes

Program Specific Outcomes (PSOs):

- Beyond POs
- Specific to the particular program
- 2 to 4 in number
- Must have a process for arriving at them
- Must be realistic
- Program Curriculum and other activities during the program must help the achievement of PSOs as with POs!

Program Specific Objectives (PSO)-Civil

- **Understanding:** Graduates shall demonstrate sound knowledge in analysis, design, laboratory investigations and **construction aspects of civil engineering infrastructure**, along with good foundation in mathematics, basic sciences and technical communication.
- **Broadness and Diversity:** Graduates will have a broad understanding of economical, environmental, societal, health and safety factors involved in **infrastructural development**, and shall demonstrate ability to function within multidisciplinary teams with competence in modern tool usage.
- **Self-Learning and Service:** Graduates will be motivated for continuous self-learning in **engineering practice and/or pursue research in advanced areas of civil engineering** in order to offer engineering services to the society, ethically and responsibly.

Program Specific Objectives (PSO)-Electronics and Communication Engineering (ECE)

- Specify, design prototype and test modern electronics systems and perform analog and digital processing function
- Architect, partition and select appropriate technologies for implementation of a specified communication system
- Design essential elements (circuit and antennas) of modern RF/ Wireless communication system

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 Outcome**
- Also mention the identified **curricular gaps** if any (10)

- *Effective Process Implementation (6)*
- *Curricular Gaps (4)*

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

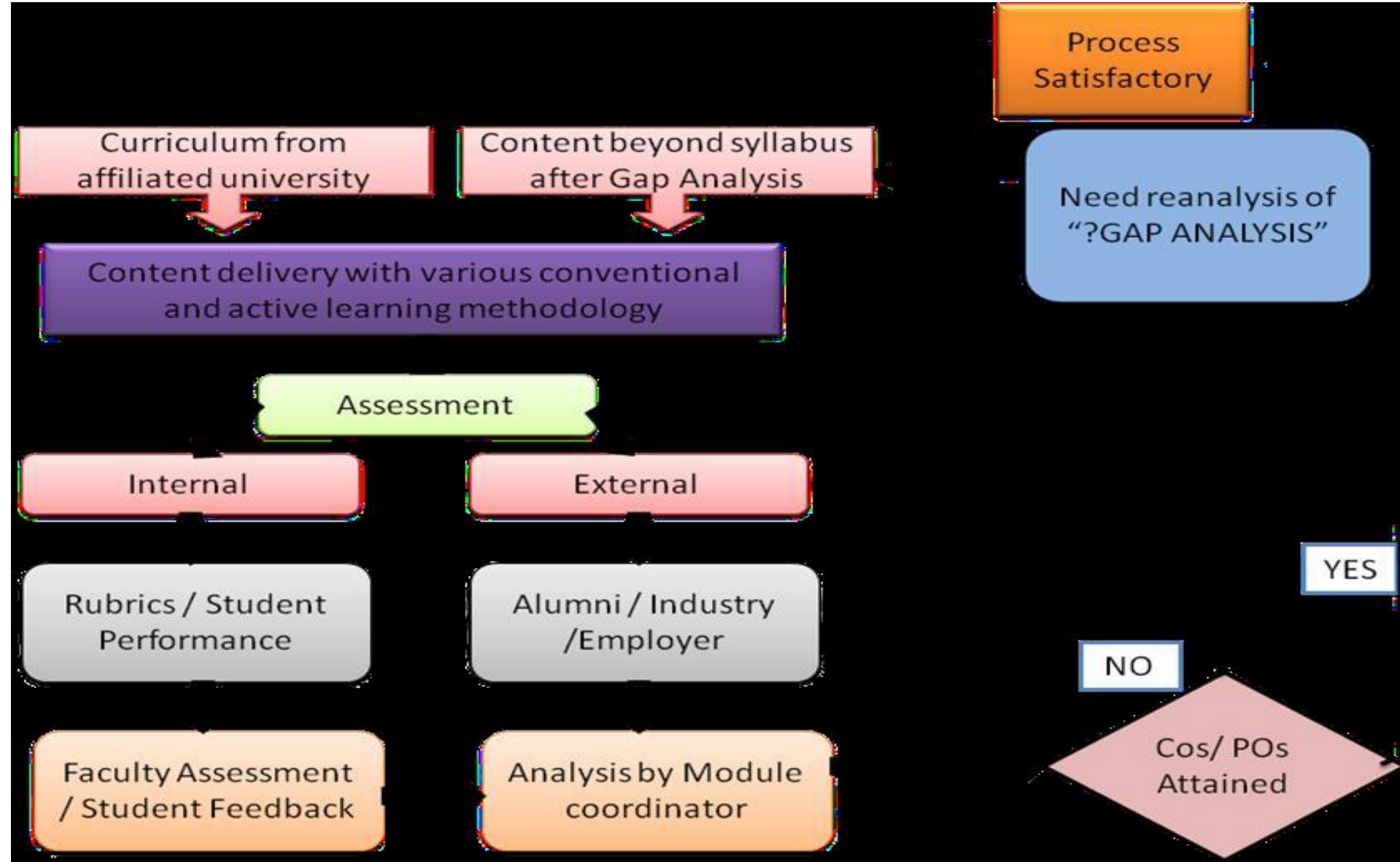
S.No.	Gap	Action taken	Date-Month-Year	Resource Person with designation	No. of students present	Relevance to POs, PSOs

- Documentary evidence
- Availability & Appropriateness of Mapping

Identification of extent of compliance of the University curriculum for attaining the PO and PSO and curricular gaps

- **Brain storming** session of faculty of the respective department
- ✓ ***Identify the extent of compliance of university curriculum for attaining PO and PSO***
- ✓ ***Identify the curriculum gap and introduce content beyond syllabus concept to meet the attainment of PO and PSO***
- Workshop with external experts to **validate** the above
- **Notification** by the competent authority regarding the same after finalization
- An **awareness** workshop for students and other stakeholders

Identification of extent of compliance of the university curriculum for attaining the PO/CO and curricular gap



List of the courses along with the extent of compliance/Gap

Course	Unit L-T-L	Extent of Compliance of university curriculum								Corrective measure
		PO (P/A/G/E)/ PSO (P/A/G/E)				Gap (Yes/No)				
		Th.	Lab.	Test/ Assgn.	Proj/ Ind. visit	Th.	Lab.	Test/ Assgn.	Proj/ Ind. visit	
Semester- 8th										
CE-402	3-1-2	G		A		N		Y		1 Assg. & 2quiz
CE-406	3-1-2	A		A		Y		Y	Y	2 quiz & Ind. Visit
CE-408	3-1-2	G		A		N		Y		1 Assg. & 2quiz
CE-410	3-1-2	G		A		Y		Y		2 Assg. & 2quiz
CE-412	3-1-2	G		A		N		Y		1 Assg. & 2quiz
CE-416	0-0-3		G				N			2quiz
CE-418	0-0-2		G				N			Virtual lab
CE-414	0-0-4				A				Y	Live project

Curricular gaps - *Add on Courses* for compliance of PO

Relevance to POs	Curricular Gap identified	Courses/ Areas	Duration
PO12, PO1, PO2	Necessary for higher studies and communicated to BOS (14-10-2014) & conducted a course	Control System (Course not in curriculum)	Inclusion in Third Year Syllabus (wef. 2015-2016)
PO7, PO12, PO1, PO4, PO5, PO8, PO10	Industry Exposure	PLC & SCADA	1 Month
PO12, PO8, PO9, PO10	Ethics, Communication, Individual & Team work	General Aptitude & Soft Skill	3 Months
PO3, PO6, PO11, PO1, PO2	Design/Development of solutions	Hands on for product development	2days

Delivery details of content beyond syllabus

- ✓ Library/internet assignments on contemporary topics of the subject
- ✓ Additional laboratory experiments
- ✓ Pre-placement Training
- ✓ Training on Soft skills and value added programs
- ✓ Creative /Projects
- ✓ Guest lectures
- ✓ Workshops/conference
- ✓ Industrial Visits and internships
- ✓ Additional Course

CAY- 2015-16

S.No.	Gap	Action taken	Date- Month- Year	Resource Person with designation	% of students	Relevance to POs, PSOs
1	.Net	Seminar	03.02.18	Mr. Md Ismail,software Development	90%	PO8,9,10 PSO 1,3
2	Higher Studies in abroad	Seminar	03.03.16	Mayank RM VISU ACADEMIC LTD	90%	PO8,9,10 PSO 1,3
3	Cloud Computing	Seminar	04.03.16	Dr. Mohan	90%	PO8,9,10 PSO 1 3

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

Academic Calendar (3)

(Memo no. 012/Acad/01-04/ AKU2015-1233 Date 31.03.2018)

S.N.	Activity	Odd Semester	Even Semester
1.	Commencement of Academic Session	01.08.2018	Jan.2019
2.	Mid semester Examination		
3.	Weekly Test	2 nd half Every Monday	2 nd half Every Monday
4.	Annual Athletic Meet		4 th /1 st week of Feb./March
5.	Annual outdoor Sport Meet	4 th /1 st week of Sept./Oct.	
6.	Annual cultural meet	3 rd week of Nov.	
7.	Annual Technical Fest		3 rd week of March
8.	University Examination	Dec. 18	July 2019
9.	Publication of Result	Jan. 2019	August 2019

Pedagogical Initiatives (3)

- **Use of Blooms taxonomy in class room teaching**
- **Motivational way of learning**
- **Computer-assisted learning**
- **Lecture method and Interactive learning**
- **Thinking class room**

Pedagogical Initiatives

- **Use of Blooms taxonomy in class room teaching**

- ✓ To understand the concept/principles/ theory / problems during lecture in the classroom keeping in view various cognitive levels of learning like, remembering, understanding, applying, analyzing, synthesis, evaluation and creativity.

- **Motivational way of learning**

- ✓ Inspiring the students through the examples of legendary persons like Sir.M.Visvesvaraya, quoting of their life time contributions

- ✓ Motivating the students by helping them to improve their personal management skills like 4Cs viz., *communication, collaborative learning, creativity and critical thinking.*

Pedagogical Initiatives.....Cont....

- **Computer-assisted learning:**

- ✓ Use of NPTL videos and Open source courseware for improved and effective delivery of course contents
- ✓ Use of computational facility and the internet based resources. This concept gains momentum during the project phase.
- ✓ Using ICT tools such as AUTOCAD, StaddPro, Matlab, NISA, Etabs, GIS , E-Surveying software, virtual labs, films from You tube and standard videos etc to help quick learning.

- **Lecture method and Interactive learning:**

- ✓ Use chalk and board, audio visual aids in teaching.
- ✓ Visit to site will clarify the doubts if any.
- ✓ Live examples surrounding class room/learning environment: eg. Hinge of door to explain the principle of mechanics, Series of chinks kept parallel and supporting the duster to deliver the concept of a roller support

- **Thinking class room**

- ✓ Project based learning during Survey camp and major/minor project to teach students the habit of thinking vital for collaborative learning in class room.

Initiative to motivate weak and bright students: (4)

Weak Students: Reason

- Lack of self confidence/Distraction
- Poor communication
- Poor participation in class room and other academic activities
- ✓ ***Tracking Students performance and attendance (Co-relation)***
- ***Poor Teaching/Improper sequencing of curricula***
- Inadequate exposure of students to real world situation (such as Industrial visit)
- Inadequacy of discussion on performance counselling (No mechanism for proper feedback to the students)
- Timing of Repeat Examination and Remedial Classes

Improving Class Room Practice

Initiative	Experience /outcome
Start teaching with some familiar material/topic and gradually moving to a new or difficult topic	Positive
Explain the relevance of topic to real world/industry	Positive
Explain difficult concepts by giving practical examples	Positive
Move around the class room and interact with the student while solving problems	Positive
Use Chalk and Board (Encourages active learning) along with teaching aid (PPT and Videos)	Positive
Speak clearly and loudly (Be expressive and smiling)	Positive
Uploading answer of Midterm question paper /Assignment on college/department website	Positive
Give feedback to students on their performance and how to improve <i>(Weak students rarely get constructive feedback to improve academic performance)</i>	Positive

Improving Students Participation in class Room (Active Learning)

Initiative	Experience/ Outcome
Ask students question at the beginning of each class about the previous lesson/class	Positive
Ask the students what they have understood after 20-30 minutes (Difficult to maintain the attention)	Positive
Involve the students in solving a problem	Positive
Encourage the students to ask a question (Set ur room in U Shape if possible)	Positive
Move the backbencher to the front	Positive
Undertake continuous assessment (Tie your assessment to your course objectives)	Positive
Divide the students in group and ask them to present seminar/ group discussion	Positive
Involve your students in your teaching. Ask for feedback	

Improving Teachers Effectiveness

Initiative	Response
Fostering positive behavior in teachers	Positive
Participating in Peer teaching	Positive
Faculty Appraisal system <ul style="list-style-type: none">✓ Development of e-enabling courses (Manuals/e-books)✓ Helping to improve/create teaching facilities (Laboratories/Library)✓ Helping students in training and placement✓ Teaching new courses✓ Helping department to become Centre of Excellence	Positive
Updating domain knowledge and training in pedagogy	Positive
Inclusion of students in assessment	Positive
Development of learning objectives and outcomes	Positive

Initiative to motivate bright Students

- **Teacher a role model for student interest , Get them on board**
- **Know your students:** Able to better tailor your instruction to the students' concerns and backgrounds
- **Use examples freely** (why a concept or technique is useful) and inform how this course prepares them for future opportunity
- **Use a variety of student-active teaching activities**
- ✓ **Teach by discovery:** Students find reasoning through a problem and discovering the underlying principle on their own
- ✓ **Cooperative learning activities :** Particularly effective as they also provide positive social pressure
- **Set realistic performance goals :**Design assignments that are appropriately challenging in view of the experience and aptitude of the class.
- **Place appropriate emphasis on testing and grading:** Avoid grading on the curve
- **Be free with praise and constructive in criticism:** Offer non-judgmental feedback on students' work
- **Give students as much control over their own education as possible:** Assess students in a variety of ways and Give them the options for how assignments are weighted.

Class Room Teaching (3)

• Learning Controlled Teaching

- ✓ Programme Instruction
- ✓ Self directed learning
- ✓ Library Method
- ✓ Computer assisted Instruction
- ✓ Laboratory Method
- ✓ Assignment

• Interactive Procedure of Teaching

- ✓ Question Answer Method
- ✓ Interactive Procedure
- ✓ Group discussion method
- ✓ Tutorial Method
- ✓ Seminar method

• Teacher Controlled Teaching

- ✓ Lecture method
- ✓ Demonstration method
- ✓ Lecture demonstration
- ✓ Team teaching method
- ✓ Individualized instruction
- ✓ Historical

• Group Controlled Teaching

- ✓ Project method
- ✓ Simulation instruction
- ✓ Field trip/ Field work/Field Survey/Field observation
- ✓ Problem based/Problem solving learning
- ✓ Narrative/Buzz session/Story or experience telling

Experiment & Continuous Assessment in Lab

Curriculum Lab and Description	Exclusive/Shared	Space, (Sq. ft) No. of Students	No. of Experiments	Quality of instruments	Lab manual	Content beyond syllabus	Assessment Method
X1	Exclusive	2700, 20	09	Working	Yes	Yes	Regular quiz and checking of Lab record
X2	Exclusive	2300, 20	12	Working	Yes	Yes	Regular quiz and checking of Lab record
X3	Exclusive	1800, 20	11	Working	Yes	Yes	Regular quiz and checking of Lab record
X4	Exclusive	1200, 20	12	Working	Yes	Yes	Regular quiz and checking of Lab record
X5	Exclusive	1600, 20	10	Working	Yes	Yes	Regular quiz and checking of Lab record

Student feedback of T-L and action taken thereof

- **Collection** of subject wise feed back (based on structured Questionnaire)
- **Report preparation** Based on students' responses, a compilation of comments as well as the statistical data from the questionnaire by Departmental Core committee
- Based on the reports senior Professors and the HoD give **constructive comments** to improve the quality of teaching and the teaching- learning process
- **Counseling** by the respective HoD for those faculty members who get negative comments
- **Sharing of experience and ideas** by teacher to develop their courses to increase the students learning in departmental meeting
- **LEQ (Learning Experience Questionnaire)** to create a process among teachers and contribute to enhance the quality of students' learning

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 –

i) Quality of Semester Question papers ii) Assignments

iii) Evaluation iv) 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)**

Process to ensure quality

- **Course File**

- ✓ **Teaching Plan:** The course objectives are defined for each course in line with the POs
- ✓ **Lesson Plan:** The lesson plan encompasses the learning outcomes and the assessment of outcomes.
- ✓ **Question Bank:** Question banks are prepared for each topic in the course based on the course objectives and considering the nature of the university question papers
- ✓ **Assignment questions list and test question papers along with key solutions**

Process to ensure quality of Internal examination/evaluation

COs	T1	T2	T3	QUIZ 1	QUIZ 2	LAB
C01	Q1	-	-	√	√	-
C02	Q2	Q1,Q2	-	-	-	-
C03	-	-	-	-	-	-
C04	Q3, Q4	Q3, Q4	-	-	-	-

Quality of assignments and relevance to COs and Evidence of COs coverage (5)

CO	T1	T2	MSE	Assignment/ Tutorial	ESE
CO1	20%	20%	10%	20%	30%
CO2					
CO3					
CO4	0%	10%	20%	20%	50%

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 .), Standards
- ✓ Processes related to project identification, allotment, continuous monitoring
- ✓ Evaluation including demonstration of working prototype and enhancing the relevance of projects.
- ✓ Mention Implementation details including details of Pos and PSOs addressed through projects and 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)

Identification of projects and allocation methodology

- **Appointment of project coordinator the Head of the department (planning, scheduling and execution of all the activities of project work)**
- **Faculty members declare In-House project statements and interested students approach the concerned teacher.**
- **Once mutually decided between faculty and students and approval of the departmental project coordinator, students starts working on the same.**
- **These project statements are separated domain wise and are distributed among the faculty matching their profile**
- **Students can also approach various industries for the final year projects and work on the same once it has been approved by the department level project coordinator**

Types and relevance of the projects and their contribution towards attainment of POs

- **The student's projects are selected in line with department mission, vision and Program outcomes and mapped to POs and PSOs**
- **Projects broadly categorized/classified (Based on the factors Environment, Safety, Standards and Cost)**
 - ✓ **Industry sponsored projects**
 - ✓ **Institute sponsored projects**
 - ✓ **Application oriented**
 - ✓ **Design oriented**
 - ✓ **Research oriented**
- **Each project is evaluated with internal marks and are graded with their quality and contribution towards attainment of PO's.**

Process for monitoring and evaluation

- Weekly meetings of the students with respective guide is planned on the project day as allotted in the time table and Departmental Project Committee evaluates student group periodically

Review	Agenda	Assessment	Weightage	Overall weightage
Review 1	Project Synopsis/ Proposal Evaluation	Rubric R1	18 (9%)	120 (60%)
Review 2	Mid Term Project Evaluation	Rubric R2	18 (9%)	
Review 3	End Semester Project Evaluation	Rubric R3	30(15%)	
Review 4	Project Report Evaluation	Rubric R4	30(15%)	
Review 5	Evaluation by Guide	Rubric R5	24(12%)	
External Evaluation			80 (40%)	80 (40%)

Project Synopsis/ Proposal Evaluation: Rubric R1 (18)

Parameter	Excellent (6)	Good (5)	Average (4)	Acceptable (3)	Unacceptable (2)	Score
Identification of Problem Domain and Detailed Analysis						
Study of the Existing Systems and Feasibility of Project Proposal						
Objectives and Methodology of the Proposed Work						

Mid-term Project Evaluation: Rubric R2 (18)

Parameter	Excellent (6)	Good (5)	Average (4)	Acceptable (3)	Unacceptable (2)	Score
Design Methodology						
Planning of Project Work and Team Structure						
Demonstration and Presentation						

End Semester Internal Project Evaluation : Rubric R3 (30)

Parameter	Excellent (6)	Good (5)	Average (4)	Acceptable (3)	Unacceptable (2)	Score
Incorporation of Suggestions						
Project Demonstration						
Presentation						

Project Report Evaluation: Rubric R4 (30)

Parameter	Excellent (6)	Good (5)	Average (4)	Acceptable (3)	Unacceptable (2)	Score
Project Report						
Description of Concepts and Technical Details						
Conclusion and Discussion						

Evaluation by Guide : Rubric R5 (24)

Parameter		Excellent (4)	Satisfactory (2)	Unsatisfactory (1)	Score
Self Motivation and Determination					
Working within a Team					
Technical Knowledge and Awareness related to the Project					
Level of Achievement					
Parameter	Excellent (12)	Good (10)	Satisfactory (8)	Unsatisfactory (6)	Score
Regularity					

Process to assess individual and team performance

- Projects evaluation is carried out in 7/8 semester Where students present their work before the guide and experts (DPC) from the same department.
- Evaluation is carried out based on various criterion of Rubrics and general criteria such as
 - ✓ **Understanding and Percent Completion of project,**
 - ✓ **Presentation , Demonstration and Documentation skills,**
- Evaluation is carried out on individual basis as well as on team performance
- Evaluation result is communicated to the students by departmental coordinator for further improvement
- At the end of the academic year, students present and demonstrate their work to the expert from an industry/ Academician from other institution and the project guide

Quality of completed Project/ Working prototypes

- At the end of final year, as per the university schedule, final viva is arranged.
- ✓ **Students demonstrate their project in front of a panel consisting of:**
- ✓ **Internal project guide**
- ✓ **External academia/industry personnel**
- ✓ **Department project coordinator**
- Working prototype, testing results, validation done is presented and judged by the pane
- The projects are evaluated and are awarded internal assessment marks and are graded according to the project contribution towards attainment of PO's and PSO's.

Evidences of Papers Published/Awards received by projects

- Every group is encouraged to write a paper or to participate in project competition organized by various engineering colleges in the region
- Students are provided with the 'research article formats' of various conferences or journals.

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)
- **Type of Industries, type of labs, objectives, utilization and effectiveness**
- **Impact analysis**
- **Documentary evidence**

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)

Initiatives related to industry interaction (15)

- **MOU's with Industries**

- ✓ Internship

- ✓ Project Workshop for Students

- ✓ Industrial Visits

- ✓ Students specific Training

- ✓ Faculty Development Program

- Identification and exchange of Resource Persons for Expert talk and Seminar

- Campus Recruitment

Initiatives related to Industry Internship / summer training

- The students are encouraged to take internship program during their semester break
- Faculty also helps the students by interacting with the industrial experts, provide the students recommendation letters and other necessary supports
- The alumni coordinator interacts with alumni working in the industries and request them to provide necessary supports for their junior's internship.
- Industry training/tours for Students
- Industrial /Internship/summer Training of More than two week and Post training Assessment

Impact Analysis of industrial training

- Gain Valuable Work Experience
- An Edge in the Job Market
- Transition into a Job
- Is this the Right Career
- Networking Opportunities
- Application of Classroom Knowledge
- Gain Confidence
- Student feedback on the initiative

Any Question.....?

Acknowledgement

All the known or unknown sources used during making the presentation are duly acknowledged, without the use of their data/information, the presentation would not have been so informative.

Thank you
for
listening!



Handwritten signature in red ink.

**SELF ASSESSMENT REPORT (SAR)
TIER - II UG Engineering Programs
First Time Accreditation**

Dr. J.N. Jha

Principal

MIT, Muzaffarpur

PART B - CRITERIA SUMMARY

Criteria No.	Criteria	Marks
Programme level Criteria		
1.	Vision, Mission and Program Educational Objectives	60
2.	Program Curriculum and Teaching – Learning Processes	120
3.	Course Outcomes and Program Outcomes	120
4.	Students’ Performance	150
5.	Faculty Information and Contributions	200
6.	Facilities and Technical Support	80
7.	Continuous Improvement	50
Institute Level Criteria		
8.	First Year Academics	50
9.	Student Support Systems	50
10.	Governance, Institutional Support and Financial Resources	120

Criteria -3

3.Course Outcomes and Program Outcomes

Definitions

- **Course Outcomes (CO):** Student is expected to know and be able to do at the end of each course (Narrower Statements).
- **Program Specific Outcomes (PSO):** What the graduates of a specific UG Program should be able to do at the time of graduation.
- **Program outcomes (PO):** What the graduates of a UG Program should be able to do at the time of graduation.
- **Program Education Objectives (PEO):** Preparing the graduates to attain career and professional accomplishments within a few year (3-5 years) of graduation

3.1-Establish the correlation between the Courses Outcomes 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 prepare CO for all courses and made available as evidence, if asked) (05)
- Number of Outcomes for a Course is expected to be around 4-6.

Course Outcomes (CO): Students expected to know and be able to do at the end of each course

Digital Logic Circuit Design

- 1) Apply knowledge of number systems, codes and Boolean algebra to the analysis and design of digital logic circuits
- 2) Identify, formulate, and solve engineering problems in the area of digital logic circuit design
- 3) Use the techniques, skills, and modern engineering tools such as logic works and VHDL, necessary for engineering practice
- 4) Function on multi-disciplinary teams through digital circuit experiments and projects
- 5) Design a digital system, components or process to meet desired needs within realistic constraints

Course Outcome (CO) - Students expected to know and be able to do at the end of each course

Site Investigation

- 1) Understand the importance of sub surface soil investigation and learn the various techniques of soil investigation.
- 2) Identify the various soil parameters required for the preparation of geotechnical report using in-situ and laboratory tests.
- 3) Update their skills with regard to the new technology available in the field of geotechnical engineering.
- 4) Sufficient exposure about the soil investigation for off-shore structure using modern instruments.

Program outcomes (PO): What the graduates of a UG Program should be able to do at the time of graduation.

1.	Engineering knowledge	7.	Environment and sustainability
2.	Problem analysis	8.	Ethics
3.	Design/development of solutions	9.	Individual and team work
4.	Conduct investigations of complex problems	10.	Communication
5.	Modern tool usage	11.	Project management and finance
6.	The engineer and society	12.	Life-long learning

Site Investigation- CO-PO Matrix

CO	PO
<p>Understand the importance of sub surface soil investigation and learn the various techniques of soil investigation.</p>	Engineering knowledge
	Problem analysis
	Design/development of solutions
<p>Identify the various soil parameters required for the preparation of geotechnical report using in-situ and laboratory tests.</p>	Conduct investigations of complex problems
	Modern tool usage
	The engineer and society
<p>Update their skills with regard to the new technology available in the field of geotechnical engineering.</p>	Environment and sustainability
	Ethics
	Individual and team work
<p>Sufficient exposure about the soil investigation for off-shore structure using modern instruments.</p>	Communication
	Project management and finance
	Life-long learning

3.1.2. CO-PO matrices of courses selected in 3.1.1

(one course per semester from 3rd to 8th semester) **(05)**

Correlation Level: High-3, Medium-2, Low-1

Subject - Site Investigation

CO/PO	1	2	3	4	5	6	7	8	9	10	11	12
CO-1	H-3	M	H	M	H	H	L	H	M	L	H	H
CO-2	H-3	H	H	M	H	H	L	L	M	L	H	H
CO-3	H-3	H	H	M	H	H	H	H	M	L	H	H
CO-4	M-2	L	H	L	M	M	M	M	L	L	H	H
Av	2.75	2.25	3	1.75	2.75	2.75	1.75	2.25	1.75	1	3	3

Program Specific Outcomes

Program Specific Outcomes (PSOs):

Graduates of a specific UG Program should be able to do at the time of graduation

- Beyond POs
- Specific to the particular program
- 2 to 4 in number
- Must have a process for arriving at them
- Must be realistic
- Program Curriculum and other activities during the program must help the achievement of PSOs as with POs!

PSO- Civil Engineering

- Graduates shall demonstrate sound knowledge in analysis, design, laboratory investigations and **construction aspects of civil engineering infrastructure**, along with good foundation in mathematics, basic sciences and technical communication
- Graduates will have a broad understanding of economical, environmental, societal, health and safety factors involved in **infrastructural development**, and shall demonstrate ability to function within multidisciplinary teams with competence in modern tool usage
- Graduates will be motivated for continuous self-learning in **engineering practice and/or pursue research in advanced areas of civil engineering** in order to offer engineering services to the society, ethically and responsibly

Site Investigation- CO-PSO Matrix

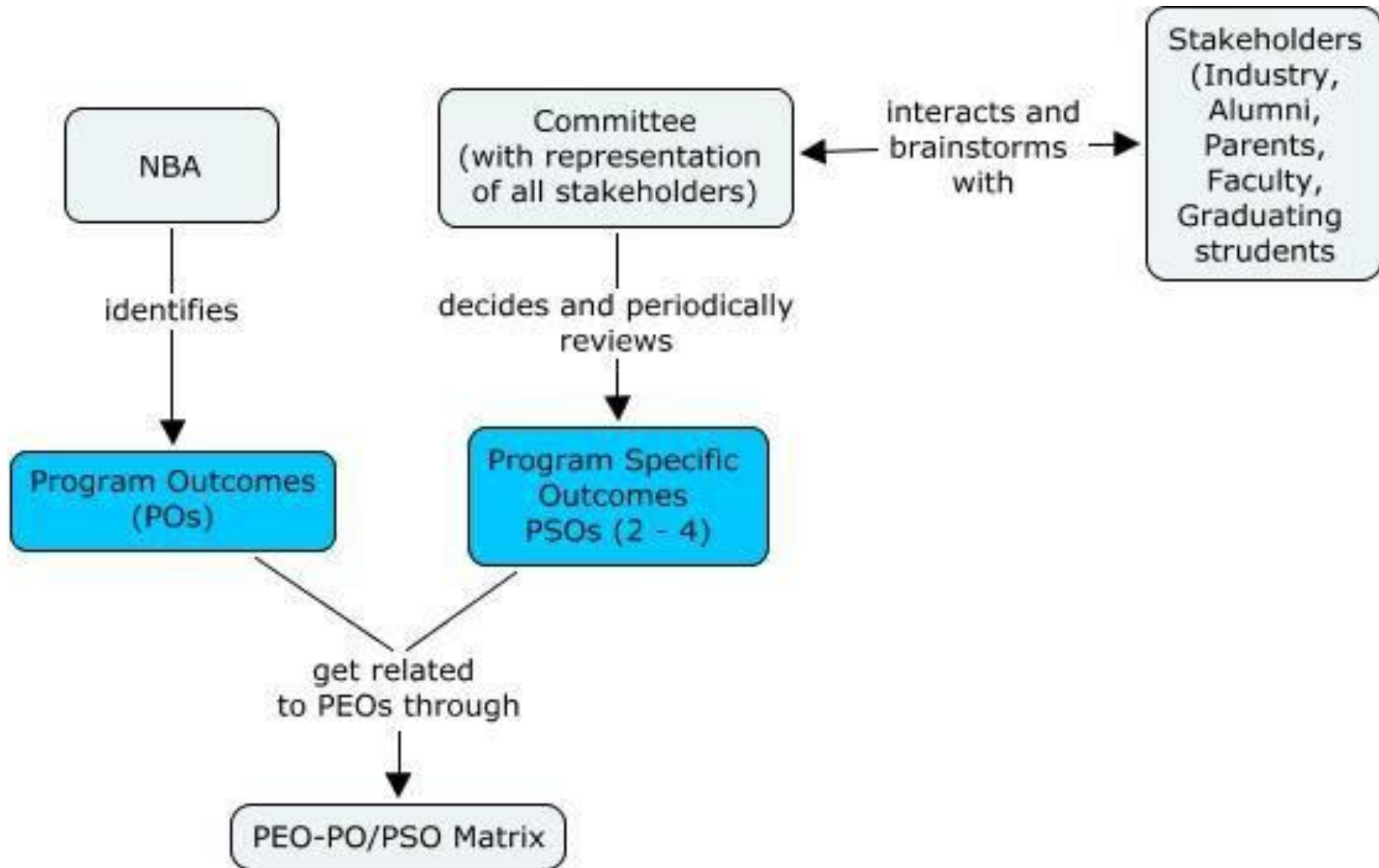
CO	PSO
<p>Understand the importance of sub surface soil investigation and learn the various techniques of soil investigation.</p>	<p>Graduates shall demonstrate sound knowledge in analysis, design, laboratory investigations and <u>construction aspects of civil engineering infrastructure</u>, along with good foundation in mathematics, basic sciences and technical communication</p>
<p>Identify the various soil parameters required for the preparation of geotechnical report using in-situ and laboratory tests.</p>	<p>Graduates will have a broad understanding of economical, environmental, societal, health and safety factors involved in <u>infrastructural development</u>, and shall demonstrate ability to function within multidisciplinary teams with competence in modern tool usage</p>
<p>Update their skills with regard to the new technology available in the field of geotechnical engineering.</p> <p>Sufficient exposure about the soil investigation for off-shore structure using modern instruments.</p>	<p>Graduates will be motivated for continuous self-learning in <u>engineering practice and/or pursue research in advanced areas of civil engineering</u> in order to offer engineering services to the society, ethically and responsibly</p>

CO-PSO Matrix

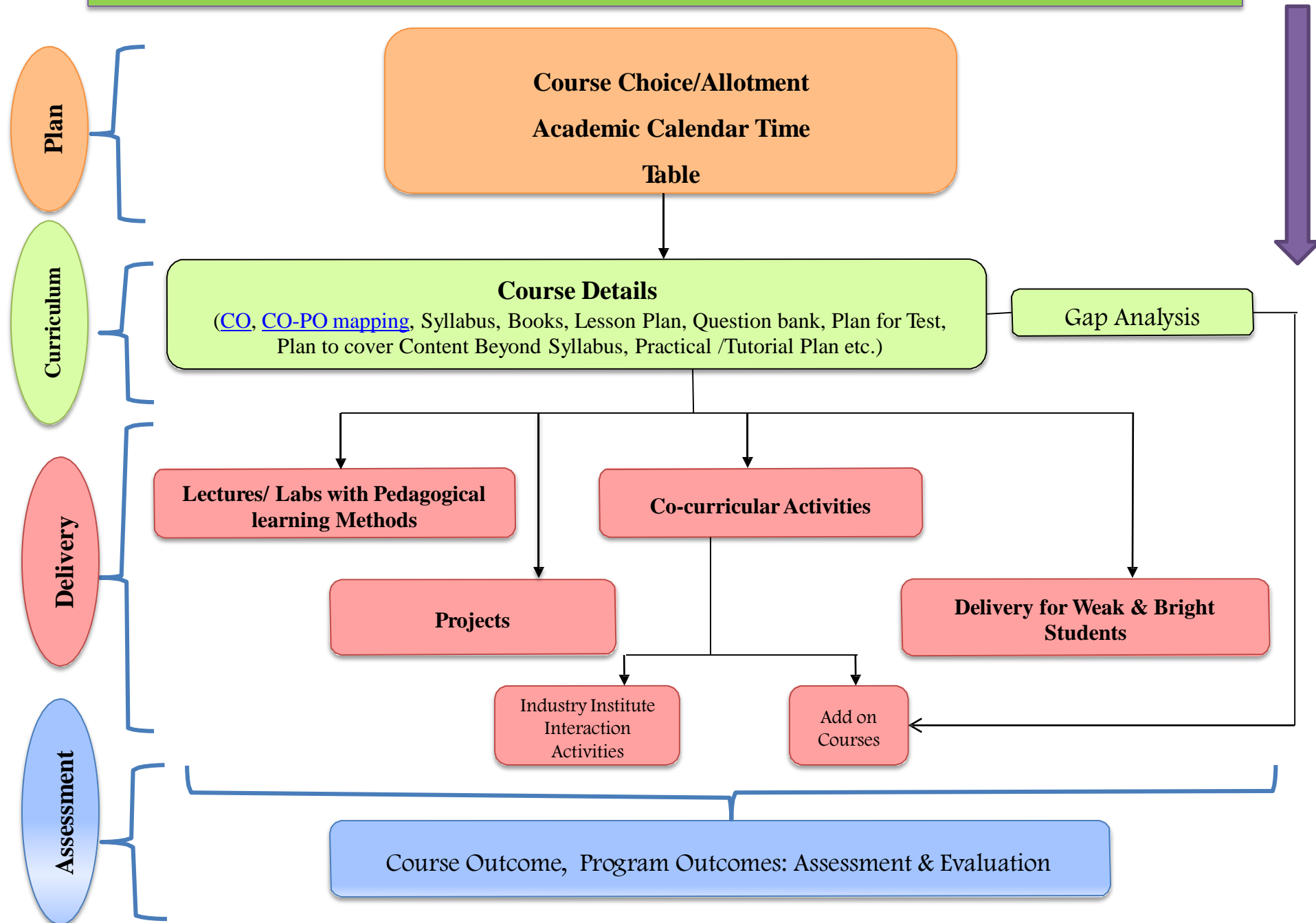
Correlation Level: High-3, Medium-2, Low-1

CO\PSO	PSO1	PSO2	PSO3
CO1	H-3	M	L
CO2	H-3	M	M
CO3	H-3	H	H
CO4	L-1	M	H
Av.	2.5	2.25	2.25

POs and PSOs



Academic Process



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)**
 - *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)**

Assessment processes to gather data and the evaluation of Course Outcome

- CO assessment tool (To measure attainment level)
- Direct assessment tool
- ✓ Mid Semester Examination (MSE) – Minimum two
(MSE-I: CO1,CO2 MSE-II: CO3,CO4,CO5,CO6)
- ✓ Assignment/ Quiz
- ✓ End Semester Examination
- ✓ Performance during laboratory experiments
- Indirect assessment tool
- ✓ Exit survey

CO –Assessment Matrix:

MSE: Mid Semester Examination, ESE: End Semester Examination

CES: Course Exit Survey

DA: Direct Assessment, IA: Indirect Assessment

Course outcome	DA								IA	Total	
	MSE		Assignment						ESE		CES
	I	II	1	2	3	4	5	6			
CO1	10		10						70	2	92
CO2	10			10						2	92
CO3		4			10					2	86
CO4		4				10				2	86
CO5		6					10			2	88
CO6		6						10		2	88
Total	20	20	10	10	10	10	10	10		70	12

Measuring Course Outcome- ESE (University Examination)

- ***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***
- ***Assumes that marks represent all the course outcome defined for the course***
- ***Attainment is measured in terms of actual percentage of students getting set percentage of marks***

Measuring Course Outcome-Internal Assessment

- ***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***

Sample Calculation: Mid Semester Records of Marks

1: S.N., 2: Enrolment No., 3: Name of Student

Note:

100% students achieved marks greater than 60%, thus the Attainment Level: 3

1	2	3	Mid Semester Attainment (Marks)						Total marks	%age marks
			10	10	4	4	6	6		
			CO1	CO2	CO3	CO4	CO5	CO6		
1	EC131001	N1	10	10	3	3	5	4	35	87.5
2	EC131002	N2	9	9	3	3	6	6	36	90.0
3	EC131003	N3	8	9	3	3	6	5	34	85
...
131	EC131131	N131	10	7	4	3	6	3	33	82.5
Total			1002	819	414	412	633	681		
Average			7.6	6.3	3.2	3.2	4.8	5.2	30.3	75.75

Sample Calculation: Assignment Records of Marks

1: S.N., 2: Enrolment No., 3: Name of Student

Note:

82% students achieved marks greater than 60%, thus the Attainment Level: 3

1	2	3	Mid Semester Attainment (Marks)						%age marks
			10	10	10	10	10	10	
			CO1	CO2	CO3	CO4	CO5	CO6	
1	EC131001	N1	6	8	10	10	6	8	80
2	EC131002	N2	8	10	5	8	10	8	82
3	EC131003	N3	6	8	4	6	6	4	57
...
131	EC131131	N131	7	5	8	9	4	5	63
Total			854	892	818	675	734	775	81.51
Average			6.52	6.81	6.25	5.16	5.6	5.92	

Sample Calculation: Course Exit Survey- Marks

1: S.N., 2: Enrolment No., 3: Name of Student

Note:

92% students achieved marks greater than 60%, thus the Attainment Level: 3

1	2	3	Course Exit Survey Attainment (Marks)						%age marks
			2	2	2	2	2	2	
			CO1	CO2	CO3	CO4	CO5	CO6	
1	EC131001	N1	2	2	2	2	2	2	100
2	EC131002	N2	2	2	2	2	2	2	100
3	EC131003	N3	1	2	2	1	2	2	83
...
131	EC131131	N131	2	1	2	1.5	1.5	1	75
Total			233.0	239.5	228.0	236.0	246.5	238.0	1421
Average			1.78	1.83	1.74	1.80	1.88	1.82	11

Sample Calculation: End Semester Marks

1: S.N., 2: Enrolment No., 3: Name of Student

Note:

82% students achieved marks greater than Average marks, thus the Attainment Level: 3

		Attainment	ESE Grades	Marks	Marks
1	2	3	Total	Out of 100	Out of 70
1	EC131001	N1	A	85	59.5
2	EC131002	N2	A	85	59.5
3	EC131003	N3	B+	75	52.5
...
131	EC131131	N131	C	45	31.5
	Total			10203	7208
	Average	70		78.58	55

Course Outcome Attainment: DA

- *If Attainment through*
 - ✓ *University Examination: Substantial (H) i.e. 3*
 - ✓ *Internal Assessment: Moderate (M) i.e. 2*
- Attainment = 80% weightage to Univ. Exam. + 20% weightage to Internal assessment
 - $80\% \text{ of } 3 + 20\% \text{ of } 2 = 2.4 + 0.4 = 2.8$
- If Weightage is 50%- 50%
 - $50\% \text{ of } 3 + 50\% \text{ of } 2 = 1.5 + 1 = 2.5$
 - Attainment = 80% of DA + 20% of IA

CO Attainment Table

$$\text{Total Attainment} = 0.8 \times \text{DA} + 0.2 \times \text{IA}$$

CO	DA									IA	TA	Target (%)	
	MSE		Assignment						ESE	CES			
	I	II	1	2	3	4	5	6					
CO1	7.6		6.52							55	1.78	55.6	<u>55</u>
CO2	6.3			6.81						55	1.83	54.8	<u>55</u>
CO3		3.2			6.25					55	1.74	51.8	<u>52</u>
CO4		3.2				5.16				55	1.80	51.0	<u>52</u>
CO5		4.8					5.60			55	1.88	52.6	<u>53</u>
CO6		5.2						5.92		55	1.82	53.2	<u>53</u>

Course Outcome Assessment Process & Tools

Course Outcomes



Set Target Level (CO)



Prepare CO-PO and PSO Matrix



Assessment



Direct Assessment (80%)

Indirect Assessment (20%)

University Examination (70%)

Internal Tests (20%)

Continuous Assessment (10%)

Course Exit Survey

60%
1
85%
2
96%
3

>50%
1
>60%
2
>70%
3

>70%
1
>80%
2
>90%
3

1-1.99
1
2-3.99
2
4-5
3



Attainment Levels

Sample CO Attainment

Course Name: **Linear Integrated Circuits**

Academic Year : 2015-16

Semester: IV

CO	Assessment Tools	Internal Test (20%)		University Result (70%)		Continuous Assessment Sheet (10%)		Direct Assessment (DA)	Indirect Assessment (IDA)		CO Attainment (80% DA +20% IDA)	Target	Attained /Not attained
		Average	Attainment	% Result	Attainment	% Avg Marks	Attainment		Course exit survey	Attainment			
ETC208.1	Class Test, University Result, CAS, Assignments, Tutorials, Rubrics, Course Exit Survey	69.6	2	95.90	2	87.53	2	2.00	4	3	2.20	2.00	Attained
ETC208.2		54.9	1	95.90	2	87.53	2	1.80	4	3	2.04	2.00	Attained
ETC208.3		50.0	1	95.90	2	87.53	2	1.80	3	2	1.84	2.00	Attained
ETC208.4		66.4	2	95.90	2	87.53	2	2.00	5	3	2.20	2.00	Attained
ETC208.5		68.3	2	95.90	2	87.53	2	2.00	4	3	2.20	2.00	Attained
ETC208.6		67.3	2	95.90	2	87.53	2	2.00	4	3	2.20	2.00	Attained
ETC208.7		68.3	2	95.90	2	87.53	2	2.00	3	2	2.00	2.00	Attained

Attainment Status

Justification

[CO Attainment of all courses](#)

1. Attained Assessment of CO is **more** than 85% of set attainment level
2. Not Attained Assessment of CO is **less** than 85% of set attainment level

Note: Depending upon attainment status of the COs, either CO target level or CO assessment level will be changed for subsequent year ,

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

- **3.3.1. Describe assessment tools and processes used for measuring the attainment of each of the Program Outcomes (PO) and Program Specific Outcomes (PSO) – 10**
 - ***List of Assessment tools and processes (5)***
 - ***Quality/Relevance of assessment tools and processes (5)***
- **3.3.2. Provide results of evaluation of each PO & PSO (40)**
 - ***Results and level of attainment of each PO/PSO (24)***
 - ***Overall levels of attainment (16)***

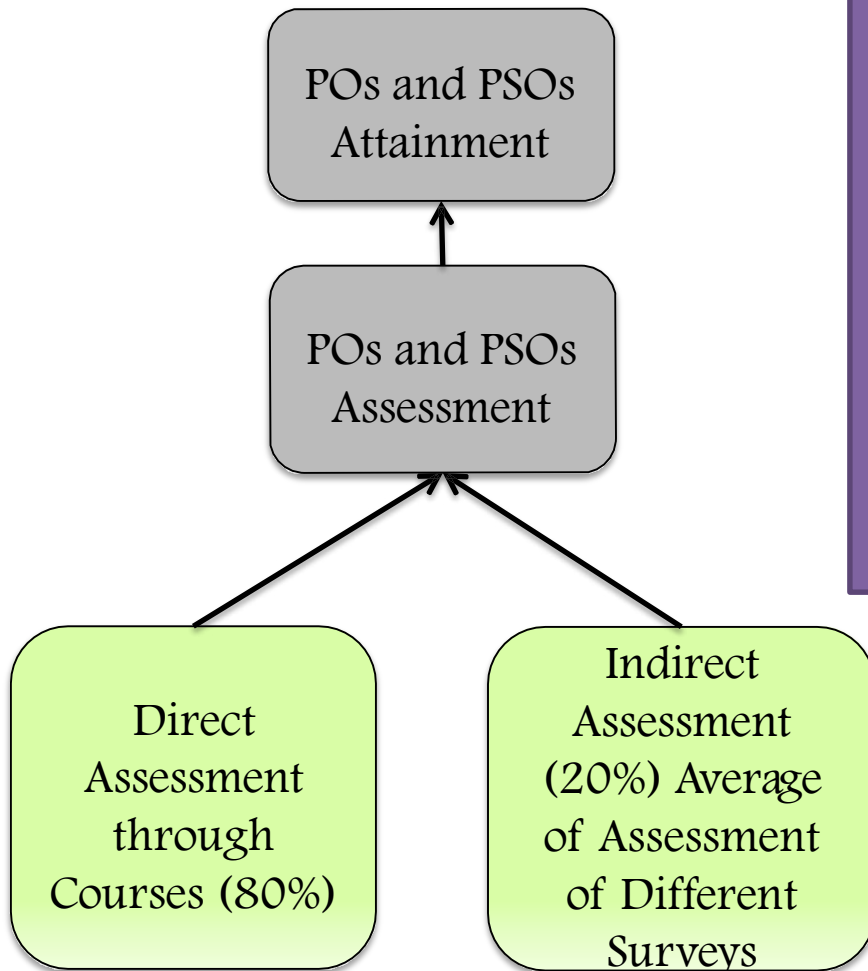
Setting CO Attainment Targets & PO/PSO attainment

- *Every CO of the course will not address every PO and PSO of the Program- Very Important*
- ***Attainment of PO1=(1/3)*Av.(0.623+0.669) = 0.215***
- ***Attainment of PO2=(1/3)*Av.(0.678) = 0.226***
- ***Attainment of PO3=(1/3)*Av.(0.671+0.614+0.662)= 0.648***

CO	Pos/PSOs	CO Attainment %
CO1	PO1, PO10, PSO1	62.3
CO2	PO2, PO10, PSO1	67.8
CO3	PO1, PSO1	66.9
CO4	PO3, PO4, PO5, PSO1	67.1
CO5	PO3, PO4, PO5, PSO1	61.4
CO6	PO3, PO4, PO5, PSO1	66.2

PO/PSO Assessment Process and Tools

Process



Tools

– Direct Assessment through Courses

- University examination
- Internal examination
- Tutorials
- Module tests /class Tests
- **Direct Assessment Rubrics**
 - Continuous Assessment at laboratory
- Indirect Assessment
 - Course exit survey

– Indirect Assessment through Different Surveys

- Program Exit Survey
- Alumni Survey
- Employer Survey
- External Examiner Feedback
- Industrial Visit Evaluation Rubrics
- In Plant Training Evaluation Rubrics
- Guest Lecture/Workshop/Expert Lecture resource person feedback
- Parent Feedback
- Guest Lecture/Workshop/Expert Lecture students feedback
- Co-curricular & Extra Curricular Activities

PO and PSO Attainment

PO attainment = (PO mapped level/3)* CO attainment

Course Name: Linear Integrated Circuits

Academic Year: 2015-2016

Semester: IV

CO	CO Attainment	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
ETC208.1	2.20	0.73	~	~	0.73	~	~	~	0.00	~	~	~	~	0.73	~
ETC208.2	2.04	1.36	1.36	~	1.36	1.36	~	~	1.36	~	1.36	~	~	1.36	~
ETC208.3	1.84	0.61	~	~	~	~	~	~	~	~	~	~	~	0.61	~
ETC208.4	2.20	0.73	0.73	~	~	~	~	~	~	~	~	~	~	0.73	~
ETC208.5	2.20	1.47	0.73	~	~	~	~	~	~	~	~	~	~	1.47	~
ETC208.6	2.20	1.47	~	~	~	~	~	~	~	~	~	~	~	1.47	~
ETC208.7	2.00	1.33	1.33	~	1.33	0.67	~	~	0.67	1.33	~	~	~	1.33	~
Attainment	~	1.10	1.04	~	1.14	1.01	~	~	1.01	1.33	1.36	~	~	1.10	~

PO and PSO Attainment (Indirect Assessment)

Year of Study: 2015-16

Surveys	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
Program Exit Survey	2.78	2.66	2.61	2.66	2.64	2.61	2.64	2.73	2.62	2.64	2.63	2.66	2.64	2.66
Alumni Feedback	2	2	-	-	3	-	3	3	3	2	3	3	-	-
Parent Feedback	2.11	-	-	-	2.25	2.15	2.15	2.13	-	2.11	-	2.25	-	-
Guest Lecture / Expert Lecture/ workshop Resource person Feedback	2	-	-	2	2	-	1	2	-	1	-	2	-	-
Guest Lecture / Expert Lecture/ Workshop Student Feedback	2	-	-	3	2	-	3	-	-	-	-	3	-	-
External Examiner Feedback	2	-	-	2	-	-	-	1	-	2	-	-	-	-
In-plant training u industry person	3	-	-	-	-	-	-	3	3	1	-	2	-	-
Industrial Visit by industry person		-	-	-	-	-	-	3	-	3	-	3	-	-
Employer Feedback	3	2	-	-	2	-	3	3	3	3	3	2	-	-
Co-curricular activities	-	-	-	-	3	3	3	3	3	3	3	3	-	-
Extra-curricular activities	-	-	-	-	-	2.17	2	2.17	2.2	2	-	2	-	-
Recruiters	2	-	-	-	-	2	1	2		1	-	2	-	-
Attainment	2.32	2.22	2.61	2.41	2.41	2.39	2.31	2.46	2.80	2.07	2.91	2.45	2.64	2.66

Formulae for PO& PSO Attainment (2015-2016)

Sample

PO1

- **Engineering Knowledge:** Apply **knowledge** of mathematics, science and engineering appropriate to Electronics and Telecommunication Engineering.

80% of Direct assessment

+

20%[average(Program Exit Survey, Alumni Survey, Employer Survey, External Examiner Feedback, In Plant Training, Guest Lecture/Workshop/Expert Lecture resource, person feedback, Parent Feedback, Guest Lecture/Workshop/Expert Lecture student feedback)]



Attainment

PSO1

- Design Analog, Digital and Embedded Systems using state of the art technology.

80% of Direct assessment

+

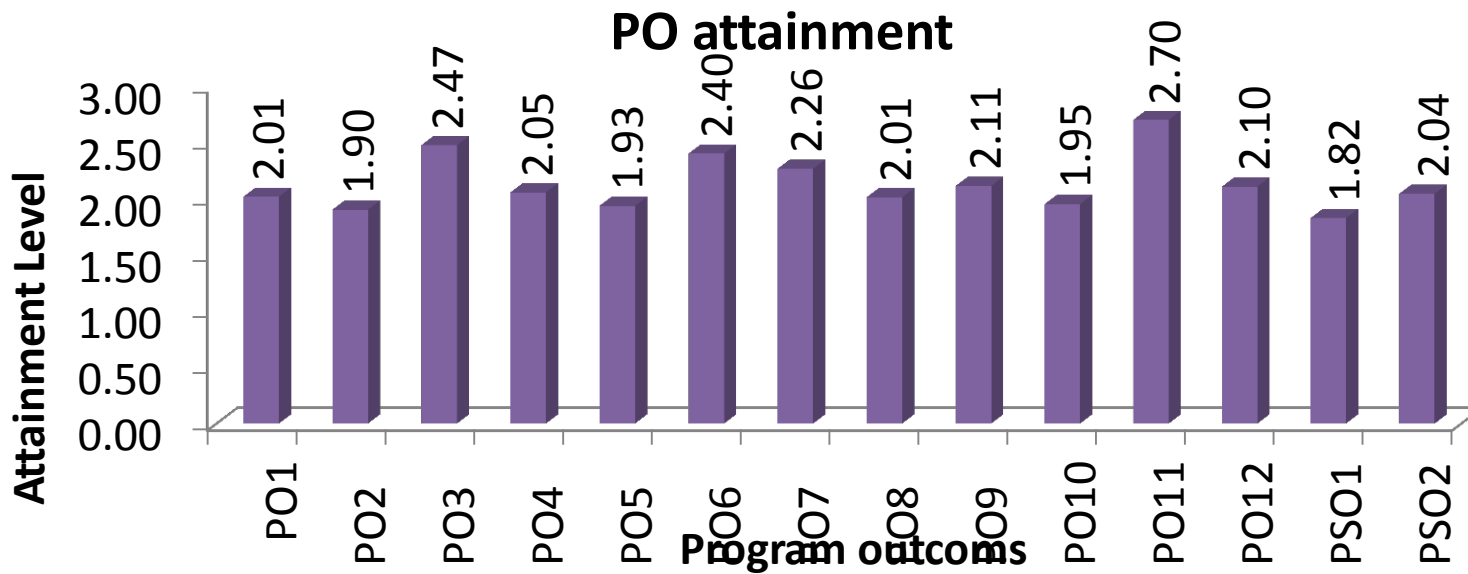
20% of Program Exit Survey



Attainment

PO/PSO Attainment (2015-2016)

Program Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
Direct Assessment	1.93	1.79	2.34	1.94	1.80	2.38	2.24	1.89	1.92	1.91	2.62	2.01	1.53	1.80
Indirect Assessment	2.32	2.22	2.61	2.41	2.41	2.39	2.31	2.46	2.80	2.07	2.91	2.45	2.64	2.66
Actual Attainment	2.01	1.90	2.47	2.05	1.93	2.40	2.26	2.01	2.11	1.95	2.70	2.10	1.82	2.04
Rounded to	2	2	2	2	2	2	2	2	2	2	3	2	2	2
Target	2	2	3	2	2	2	2	2	2	2	3	2	2	2
Attained / Not Attained	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y



[2015-2016](#)
[2014-2015](#)
[2013-2014](#)
[Comparison of three Years](#)

Any question/ query.....?

Acknowledgement

All the known or unknown sources used during making the presentation are duly acknowledged, without the use of their data/information, the presentation would not have been so informative.

Thank you
for
listening!



Handwritten signature

**SELF ASSESSMENT REPORT (SAR)
TIER - II UG Engineering Programs
First Time Accreditation**

Dr. J.N. Jha

Principal

MIT, Muzaffarpur

Criteria No.	Criteria	Weightage /Marks
Programme level Criteria		
1.	Vision, Mission and Program Educational Objectives	60
2.	Program Curriculum and Teaching – Learning Processes	120
3.	Course Outcomes and Program Outcomes	120
4.	Students’ Performance	150
5.	Faculty Information and Contributions	200
6.	Facilities and Technical Support	80
7.	Continuous Improvement	50
Institute Level Criteria		
8.	First Year Academics	50
9.	Student Support Systems	50
10.	Governance, Institutional Support and Financial Resources	120

CRITERION 4	Students' Performance	150
------------------------	----------------------------------	------------

Abbreviations used

- **CAY – Current Academic Year**
- **CAYm1- Current Academic Year minus 1= Current Assessment Year**
- **CAYm2 - Current Academic Year minus 2 = Current Assessment Year minus 1**
- **LYG – Last Year Graduate**
- **LYGm1 – Last Year Graduate minus 1**
- **LYGm2 – Last Year Graduate minus 2**

4.1. Enrolment Ratio (20)

Enrolment Ratio = Total students admitted in 1st yr
/Sanctioned intake of program

Avg. Student enrollment at First Year Level during prev. 3 acad. yrs incl CAY)	Marks
>= 90% students	20
>= 80% students	18
>= 70% students	16
>= 60% students	14
>= 50% students	12/0
Otherwise	0

Admission intake in the programme

Item	CAY	CAY1	CAY2	CAY3
Sanctioned intake strength in the programme (N)	120	120	120	120
Total number of admitted students in first year <i>minus</i> number of students migrated to other programmes at the end of 1st year ($N1$)	120	120	120	120
Number of admitted students in 2nd year in the same batch via lateral entry ($N2$)	-	24	23	17
Total number of admitted students in the Programme ($N1 + N2$)	120	144	143	137

4.2. Success Rate in stipulated period of the program (40)/(20)

4.2.1. Success rate without backlogs in any semester/year of study (25)/(15)

SI = (Number of students graduated from program without backlog) / (Number of students admitted in first year of that batch and 2nd year via lateral entry/separate Div)

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

Success rate without backlogs in any year of study = $25(15) \times$ Average SI

Success Rate = $25 \times$ mean of success index (SI) for past three batches

Year of entry (reverse chronological order)	Number of students admitted in 1 st year + admitted via lateral entry in 2 nd year (N1+N2)	No. of students who successfully completed (Zero backlog)			
		1 st year	2 nd year	3 rd year	4 th year
CAY	120				
CAYm1	144	80			
CAYm2	143	53	84		
CAYm3	137	80	57	102	
CAYm4 (LYG)	144	44	81	92	119
CAYm5(LYGm1)	108	39	29	71	94
CAYm6(LYGm2)	105	57	31	16	85

Success Index (SI)=

No. of students graduated in stipulated Period/
No. of students admitted in 1st year and 2nd year

$$\text{Success Rate} = 25 \times \text{Average SI} = 25 \times 0.84 = 21$$

Item	LYG (CAYm4)	LYGm1 (CAYm5)	LYGm2 (CAYm6)
Number of students admitted in the corresponding First Year + admitted via lateral entry in 2nd year	144	108	105
Number of students who have graduated in the stipulated period	119	94	85
Success index (SI)	0.83	0.87	0.81

4.2.2. Success rate with Backlog in stipulated period (15)/(5)

SI= (No. of students graduated from program in stipulated period of course duration)/ (No. of students admitted in first year of that batch + 2nd year via lateral entry)

Avg SI = mean of Success Index (SI) for past 3 batches

Success rate = 15(5) × Average SI

Note: If 100% students clear without any backlog, then total marks are 40(20) as both 4.2.1 & 4.2.2 will be applicable simultaneously

Success Rate with backlog in stipulated period

$$\text{Success Rate} = 15 \times \text{Average SI} = 15 \times 0.84 = 12.6$$

Item	LYG (CAYm4)	LYGm1 (CAYm5)	LYGm2 (CAYm6)
Number of students admitted in the corresponding First Year + admitted via lateral entry in 2nd year	144	108	105
Number of students who have graduated with backlog in the stipulated period	119	94	85
Success index (SI)	0.83	0.87	0.81

4.3. Academic Performance in 3rd Year (15)/(0)

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

*API = {Mean of 3rd Year Grade Point Avg of all
successful Students on a 10 point scale*

OR

*Mean of % of marks of all successful students in 3rd
Year/10} x*

(no. of successful students)

(no. of students appeared in exam)

*Successful students: those permitted to proceed to Final
year*

Academic Performance of 3rd year= 1.5 ×Av. API

Item	LYG (CAYm4)	LYGm1 (CAYm5)	LYGm2 (CAYm6)
Approximating the API by the following mid-point analysis (API by Mid-CGPA)			
9 < Number of students with CGPA < 10.0	0	0	0
8 < Number of students with CGPA < 9.0	11	4	0
7<=8	47	32	21
6<=7	61	56	64
5<=6	0	2	0
Mean of CGPA or Mean Percentage of students (X)	7.1	6.9	6,7
Total no. of successful students (Y)	119	94	85
Total no. of students appeared in the examination (Z)	144	108	105
API = x* (Y/Z)	5.86	6.05	5.42
Average API = (AP1 + AP2 + AP3)/3	5.77		
Academic Performance	1.5× 5.77=8.65		

4.4. Academic Performance in 2nd Yr (15)/(10)

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

API = {Mean of 2nd Year Grade Point Avg of all successful Students on a 10 point scale

OR

Mean of % of marks of all successful students in Second Year/10} x

(no. of successful students)

(no. of students appeared in exam)

Successful students: permitted to proceed to 3rd year

Academic Performance of 2nd year= 1.5 ×Av. API

Item	LYG (CAYm4)	LYGm1 (CAYm5)	LYGm2 (CAYm6)
Approximating the API by the following mid-point analysis (API by Mid-CGPA)			
9 < Number of students with CGPA < 10.0	0	0	0
8 < Number of students with CGPA < 9.0	11	4	0
7<=8	47	32	21
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5<=6	0	2	0
Mean of CGPA or Mean Percentage of students (X)	7.1	6.9	6,7
Total no. of successful students (Y)	119	94	85
Total no. of students appeared in the examination (Z)	144	108	105
API = $x^* (Y/Z)$	5.86	6.05	5.42
Average API = $(AP1 + AP2 + AP3)/3$	5.77		
Academic Performance	$1.5 \times 5.77 = 8.65$		

4.5. Placement, Higher Studies, Entrepreneurship

(40)/(30)

Assessment Points = 40 or 30 × average placement

Item	CAYm1	CAYm2	CAYm3
Total No. of Final Yr Students (N)			
Students placed in companies/Govt. Sector (x)			
Students admitted to higher studies with valid qualifying scores (GATE/ equivalent State/National Level Tests, GRE, GMAT etc.) (y)			
Students turned entrepreneur in engg/tech (z)			
x + y + z =			
Placement Index : (x + y + z)/N	P1	P2	P3
Average placement=(P1+P2+P3)/3			

Placement, Higher Studies and Entrepreneurship

Item	LYG (CAYm4)	LYGm1 (CAYm5)	LYGm2 (CAYm6)
Total No. of Final Year Students (N)	144	108	105
No. of students placed in companies or Govt. Sector (x)	20	17	42
No. of students admitted to higher studies with valid qualifying scores (GATE or equivalent State or National Level Tests, GRE, GMAT etc.) (y)	21	30	13
No. of students turned entrepreneur in engg./tech. (z)	24	25	28
$x + y + z =$	65	72	83
Placement Index : $(x + y + z)/N$	0.45	0.67	0.79
Average placement= $(P1 + P2 + P3)/3$	0.64		
Assessment Points = $40 \times$ average placement	25.47		

Placement data format

Programs name with Assessment Year

S. N.	Name of the student Placed	Enrollment Number	Name of the employer	Appointment Letter reference No. with date

4.6. Professional Activities (20)

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

- **Relevant details**

-Availability/activities of Professional Society/ Chapters (3)

- No./ Quality of Engg. events organized at Institute (2)

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

•Department shall list publications with names of editors/publishers, etc

- Quality/relevance of contents/print material (3)

- Participation of students from the program (2)

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

- Provide a table indicating publications which received awards in events / conferences organized by other institutes**

Within the State (2)

Outside the State (3)

Prized/Awards received (5)

Professional societies/chapters and organizing engineering events

Year of Entry	Event Name	Student Details		Organised by
		Name	Position	
CAYm1	Structure Master	Suraj Kakkar Ram Kakkar Akshay Kaushal	2nd	ISTE, MIT
CAYm2	Project & Model Display	Akshay Kaushal	1st	IE Student Chapter, MIT
CAYm3	Truss-O-Build	Suraj Kakkar Ram Kakkar	1st	ACES, MIT

Publication of technical magazines, newsletters, etc.

Year	Title of the Article	Student detail	Editor	Magazine/ Newsletter
CAY	Recycled Concrete aggregate: A Solid Wealth	Akshay kaushal, Danish Malhotra, Jaspreet Singh, Leezu Goyal, Vivek Makkar	JN Jha, Harvinder Singh, Preetinder Kaur	Proceedings of GEPSID-2014-national conference, October 11-12, 2014, Ludhiana
CAYm1	Properties of self compacting concrete mixed with fly ash	Abhinandan Singh	K.Prasad	College Magazine
CAYm2	Funny Definitions	Prabhjot SinghDindsa	Balwinder Singh	College News Letter

Participation in the Inter Institute events by the students of the Program of the study

Year of Entry	Event Name	Student Details		Organised by
		Name	Position	
CAYm1	Structure Master	Suraj Kakkar Ram Kakkar Akshay Kaushal	2nd	IITISM Dhanbad
CAYm2	Project & Model Display	Akshay Kaushal	1st	IITPatna
CAYm3	Truss-O-Build	Suraj Kakkar Ram Kakkar	1st	NIT Patna

CRITERION

5

**Faculty
Information
and
Contributions**

200

Name of Faculty

QUALIFICATION

Degree

(highest degree)

University

Year of Graduation

Association with Institution

Designation

Date of Joining institution

Department

Specialization

**Academic
Research**

Research Paper Publications

Ph.D. Guidance

**Faculty Receiving Ph.D.
during Assessment Yrs**

Sponsored Research

(Funded Research)

**Consultancy & Product
Development**

**Cumulative information for dept faculty for
CAY, CAYm1 & CAYm2**

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

(CALCULATED AT DEPT LEVEL CONSIDERING ALL UG/PG PROGRAMS)

No. of UG Programs in the Department (n): _____

No. of PG Programs in the Department (m): _____

No. of Students in UG 2nd Year= **u1**

No. of Students in UG 3rd Year= **u2**

No. of Students in UG 4th Year= **u3**

No. of Students in PG 1st Year= **p1**

No. of Students in PG 2nd Year= **p2**

No. of Students =Sanctioned Intake+ Actual admitted lat. entry

S=TOTAL STUDENTS IN DEPT = u1+..+un+p1+..pn

F = TOTAL FACULTY IN DEPT (excl first year faculty)

STUDENT FACULTY RATIO (SFR) = S / F

Except UG 1st yr

Regular vs Contract Faculty

Regular/ full time faculty $\geq 75\%$

Contractual/Adjunct Faculty/Resource persons from industry as per AICTE norms and standards $\leq 25\%$

Contractual faculty considered for assessment only if:

- drawing salary as per concerned State Govt.** for contractual faculty in respective cadre
- taught over consecutive 4 semesters**

Information about the regular and contractual faculty

Year	Total number of regular faculty in the department	Total number of contractual faculty in the department
CAY		
CAYm1		
CAYm2		

Marks: Student Faculty Ratio (SFR)

SFR	Marks
≤ 15	20
≤ 17	18
≤ 19	16
≤ 21	14
≤ 23	12
≤ 25	10
> 25.0	0

Marks: Student Faculty Ratio (SFR)

Year	CAY	CAYm1	CAYm2
No. of students in the 2nd year of the Program (u1)	144	145	146
No. of students in the 3rd year of the Program (u2)	145	144	146
No. of students in the 4th year of the Program (u3)	73	72	54
Total No. of students in the department (S) = u1+u2+u3	362	363	344
Total No. of faculty in the department (F)	19	18	19
Student Faculty Ratio (SFR) = S/F	19.05	20.16	18.10
Average SFR = (SFR1+SFR2+SFR3)/3	19.10		
Assessment	16		

5.2. Faculty Cadre Proportion (25)/(20)

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

F1: No. of Prof REQUIRED = $1/9$ x No. of Faculty req to comply with 15:1 SFR based on no. of students (S) as per 5.1

F2: No. of Assoc. Prof REQUIRED = $2/9$ x No. of Faculty req to comply with 15:1 SFR based on no. of students (S) as per 5.1

F3: No. of Asst. Prof REQUIRED = $6/9$ x No. of Faculty req to comply with 15:1 SFR based on no. of students (S) as per 5.1

Year	Professors		Associate Professors		Assistant Professors	
	Required F1	Available F1	Required F2	Available F2	Required F3	Available F3
CAY						
CAYm1						
CAYm2						
Average Numbers	RF1=	AF1=	RF2=	AF2=	RF3=	AF3=

Cadre Proportion Marks =

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

or (10)

□ If $AF1 = AF2 = 0$ then zero marks

□ Maximum marks limited to 25 (20)

Example: Intake = 180; Req no. of Faculty = 12;
RF1 = 1, RF2 = 2 and RF3 = 9

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

Cadre proportion marks = $(1+0.6+0.4) \times 12.5 = 25$

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

Cadre proportion marks = $(1+0.9+0.4) \times 12.5 = 28.75 (=25)$

Case 3: $AF1/RF1 = 0$; $AF2/RF2 = 1$; $AF3/RF3 = 18/9$;

Cadre proportion marks = $(0+0.6+0.8) \times 12.5 = 17.5$

5.3. Faculty Qualification (25)/(20)

$$\text{FQ} = 2.5 \times [(10X + 6Y)/F]$$

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 1:20 FSR**

(Avg of CAY to CAYm2)

(no. of faculty and no. of students required are to be calculated as per 5.1)

Faculty qualification

Years	X	Y	F	$FQ=2.5 \times [(10X + 4Y)/F]$
CAY	3	12	19	10.26
CAYm1	4	11	18	11.67
CAYm2	5	10	19	11.84
Average Assessment				11.26

Faculty Retention (25) :

No. of Regular Faculty in CAYm2: CAYm1: CAY

Item (% of faculty retained during the period of assessment keeping CAYm3 as base year)	Mark s
>=90% of required Faculty members retained during the period of assessment keeping CAYm3 as base year)	25
>=75% of required Faculty members retained during the period of assessment keeping CAYm3 as base year)	20
>=60% of required Faculty members retained during the period of assessment keeping CAYm3 as base year)	15
>=50% of required Faculty members retained during the period of assessment keeping CAYm3 as base year)	10
<50% of required Faculty members retained during the period of assessment keeping CAYm3 as base year)	0

5.5. Innovations by Faculty in Teaching & Learning (20)/(10)

INNOVATIONS by Faculty in teaching and learning contributing to improvement of student learning may include but not limited to-

- **Use of ICT**
- **Instruction delivery**
- **Instructional methods**
- **Assessment / Evaluation**
- **Inclusive Class Room leading to effective, efficient, and engaging instruction**

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

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

Dept/inst. may set up appropriate processes for making the contributions available to the public, getting them reviewed and for rewarding

5.5. Faculty competencies in correlation to Program Specific Criteria (0)/(10)

Correlate program specific criteria to competencies of faculty with respect to:

- Specialization
- Research publications
- Course developments
- Other relevant points

Faculty competency Correlation to Program Specific Criteria

Faculty	Course Taught	Specialization	Publication	Course development	Consul-tancy	Special Class for Comp. Exam
A	ABC	PQR	30	Member BOS	Struc. Design.	GATE

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

- Faculty scores max **five points** for participation
- Participation in **2 to 5 days FDP: 3 Points**
- Participation **>5 days FDP: 5 points**

Name of Faculty	Maximum 5 per Faculty		
	CAY	CAYm1	CAYm2

Sum
RF = No. of Faculty required to comply with 20:1 SFR as per 5.1			
Assessment = $3 \times (\text{Sum}/0.5\text{RF})$ (Marks limited to 15)			
Avg assessment over 3 yrs (Marks limited to 15) =			

Faculty as participants in Faculty training /STTPs

Faculty Name	Max. 5/Faculty		
	CAYm 1	CAYm 2	CAYm 3
A1	5	5	5
A2	5	5	5
..	5	5	5
An	5	5	5
Sum	65	67	67
<i>RF= Number of Faculty required to comply with 20:1 Student-Faculty ratio as per 5.1</i>	18	19	19
Assessment = $3 \times (\text{Sum}/0.5\text{RF})$ (Marks limited to 15)	21.67 (15)	21.16 (15)	21.16 (15)
Average assessment over three years (Marks limited to 15) =	15		

5.7. Research and Development (30)

5.7.1. Academic Research (10)

Includes research paper publications, Ph.D. guidance & faculty receiving Ph.D. during assessment period

- No. of quality publications in refereed /SCI Journals, citations, Books/ Book Chapters etc. (6)**
- Ph.D. guided /Ph.D. awarded during assessment period while working in institute (4)**

5.7.2. SPONSORED RESEARCH (5)

Funded research from outside-
Cumulative during last 3 years

Tier II	
Amount (in lacs)	Marks
> 20	5
16-20	4
12-16	3
8-12	2
4-8	1
<4	0

Documentary Evidence

Year- CAYm1

Faculty Name	Funding Agency	Amount & Duration	Project Type	Project Name	Status	Outcome
ABC	AICTE, N.Delhi	10 lakh, 2014-2016	RPS	Stability of Reinforced Fly ash Slope	Completed	Ph.D.-1 M.Tech.-3 SCI Journal -3 Other Journal-02 Int. Conf.-3 National Conf.-3 Research Award-1 Patent-1

5.7.3. Development activities (10)

Year	Product Development	Research laboratories	Instructional materials	Working models/ charts/monograms etc.
CAYm1	03	04	05	02
CAYm2	05	03	02	07
CAYm3	03	04	04	08

5.7.4. CONSULTANCY (FROM INDUSTRY) (5) Cumulative during last 3 years

Tier II	
Amount (in lacs)	Marks
> 10	5
8-10	4
6-8	3
4-6	2
2-4	1
<2	0

Consultancy (Industry)

Year- CAYm1					
Faculty Name	Project Title	Funding Agency	Amount	Duration (F. Year)	Status & Outcome
A	CBR Value of soil	PWD (B&R)	2.0 lac	2016-17	Completed, Report Submitted
Year- CAYm2					
Faculty Name	Project Title	Funding Agency	Amount	Duration (F. Year)	
A	CBR Value of soil	PWD (B&R)	2.0 lac	2016-17	
Year- CAYm3					
Faculty Name	Project Title	Funding Agency	Amount	Duration (F. Year)	
A	CBR Value of soil	PWD (B&R)	2.0 lac	2016-17	

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

The assessment is based on:

- **A well-defined system for faculty appraisal for all assessment years (10)**
 - Notified performance appraisal and development system;
 - Appraisal Parameters;
 - Awareness
- **Its implementation & effectiveness (20)**
 - Implementation,
 - Transparency and
 - Effectiveness

5.9. Visiting/Adjunct/Emeritus Faculty (10)

Adjunct faculty includes Industry experts.

Participation & contributions in teaching & learning and/or research by visiting /adjunct/ Emeritus faculty etc.

- Provision of inviting visiting/adjunct /Emeritus faculty (1)**
- Minimum 50 hours per year interaction with adjunct faculty from industry/retired professors etc. (9)**

Minimum 50 hours interaction = 3 marks for that year; 3 marks x 3 years = 9 marks

6.2. Additional facilities created for improving the quality of learning experience in labs (25)/ (0)

A. Availability & relevance of additional facilities
(10)

B. Facilities utilization and effectiveness (10)

C. Relevance to POs and PSOs (5)

S N	Facility Name	Details	Reason (s) for creating facility	Utiliza -tion	Areas where enhanced learning expected	Relevance to POs/PSOs

6.3. Labs: Maintenance & overall ambiance
(10)

6.4. Project laboratory (Facilities & Utilization)
(5)

6.5. Safety measures in laboratories **(10)**

S.N.	Name of Laboratory	Safety Measures

Acknowledgement

All the known or unknown sources used during making the presentation are duly acknowledged, without the use of their data/information, the presentation would not have been so informative.

Thank you
for
listening!



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**SELF ASSESSMENT REPORT (SAR)
TIER - II UG Engineering Programs
First Time Accreditation**

Dr. J.N. Jha

Principal

MIT, Muzaffarpur

PART B - CRITERIA SUMMARY

Criteria No.	Criteria	wtges
Programme level Criteria		
1.	Vision, Mission and Program Educational Objectives	60
2.	Program Curriculum and Teaching – Learning Processes	120
3.	Course Outcomes and Program Outcomes	120
4.	Students’ Performance	150
5.	Faculty Information and Contributions	200
6.	Facilities and Technical Support	80
7.	Continuous Improvement	50
Institute Level Criteria		
8.	First Year Academics	50
9.	Student Support Systems	50
10.	Governance, Institutional Support and Financial Resources	120

CRITERION	Continuous	
7	Improvement	50

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

- Documentation of POs and PSOs attainment levels (5)
- Identification of gaps/shortfalls (5)
- Plan of action to bridge the gap and its Implementation (10)

Examples of analysis and proposed action

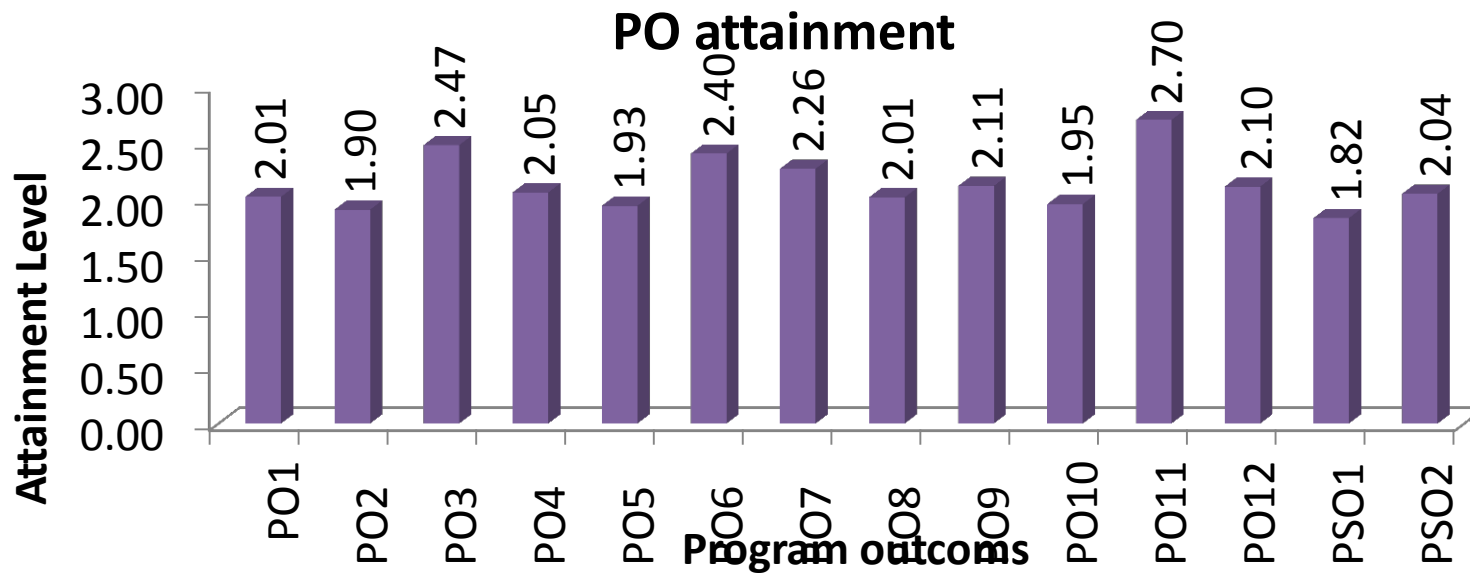
S.N.	Course	Attainment		Reason	Corrective measure
		Yes/No	Deficiency		
1	Lab. Course	No	CO attainment	Deficient Lab equipment	Equipment up-gradation
2	EM theory	NO	CO attainment	weaker course on vector calculus	a) Revision of the course syllabus b) Text book changed

POs & PSOs Attainment Levels and Actions for improvement (20)

Year – CAY (Similar table for CAY1 and CAY2)			
Pos	Target level	Attainment level	Observation
PO1: Statement As mentioned in SAR			
PO1			
Action 1 Action n			
PO2			

PO/PSO Attainment (2015-2016)

Program Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
Direct Assessment	1.93	1.79	2.34	1.94	1.80	2.38	2.24	1.89	1.92	1.91	2.62	2.01	1.53	1.80
Indirect Assessment	2.32	2.22	2.61	2.41	2.41	2.39	2.31	2.46	2.80	2.07	2.91	2.45	2.64	2.66
Actual Attainment	2.01	1.90	2.47	2.05	1.93	2.40	2.26	2.01	2.11	1.95	2.70	2.10	1.82	2.04
Rounded to	2	2	2	2	2	2	2	2	2	2	3	2	2	2
Target	2	2	3	2	2	2	2	2	2	2	3	2	2	2
Attained / Not Attained	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y



[2015-2016](#)
[2014-2015](#)
[2013-2014](#)
[Comparison of three Years](#)

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

- **Assessment: Conduct and Actions taken**

- Academic Audit assessment criteria,

- Frequency,

- Conduct mechanism,

- Action plan based on audit,

- Implementation and effectiveness

(**Note:**

Internal Academic Audit Team- College Level

Academic Audit Team- University Level)

Improvement in Placement, Higher Studies and Entrepreneurship (10)

- Assessment is based on improvement in placement index
 - Improvement in Placement numbers, quality, core hiring industry and pay packages (5)
 - Improvement in Higher Studies admissions for pursuing PhD. in premier institutions(3)
 - Improvement in number of Entrepreneurs (2)
(Considering nos. in the base year *CAYm3*)

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

Item		CAY	CAYm1	CAYm2
National Level Entrance Examination	No. of students admitted			
	Opening Score/Rank			
	Closing Score/Rank			
State/University/Level Entrance Examination/Others	No. of students admitted			
	Opening Score/Rank			
	Closing Score/Rank			
Name of the Entrance Examination for Lateral Entry or lateral entry details	No. of students admitted			
	Opening Score/Rank			
	Closing Score/Rank			
Average CBSE/Any other Board Result of admitted students				

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