CRITERION - 1

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1. VISION, MISSION AND PROGRAM EDUCATIONAL OBJECTIVES (60)

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

S.A ENGINEERING COLLEGE was established in the year 1998-99 by the Dharma Naidu Educational Trust. The main objective of the trust is to foster quality technical and higher education, research and training in various branches of science and technology. The trust comprises a team of highly respected and recognized professionals in the field of Academics, Management and Industry dedicated to achieve the following vision.

The OBE approach starts with defining the outcomes that are described by the various stake holders.

Three types of outcomes are defined such as

- Programme Educational Objectives
- Programme Outcomes
- Course Outcomes

VISION

Vision is a picture of the *FUTURE*

It shows where the institute want to go, what we will be, when we get there

The Vision statements should inspire people to dream; Mission statement should inspire people to action. There are certain characteristics that most Vision statements have in common. In general, Vision statements should be:

- **Understood and shared by members of the community**
- **Broad enough to include a diverse variety of local perspectives**
- **Inspiring and uplifting to everyone involved in your effort**
- **Easy to communicate**

Mission statements are similar to Vision statements, in that they, too, looks at the big picture. However, they're more concrete, and they are definitely more "action-oriented" than Vision statements.

Some general guiding principles about Mission statements are that they are:

- *Concise*: While not as short as Vision statements, Mission statements generally still get their point across in one sentence.
- *Outcome-oriented:* Mission statements explain the fundamental outcomes of our Institution are working to achieve.
- *Inclusive:* While Mission statements do make statements about our group's key goals, it's very important that they do so very broadly. Good Mission statements are not limiting in the strategies or sectors of the community that may become involved in the project.
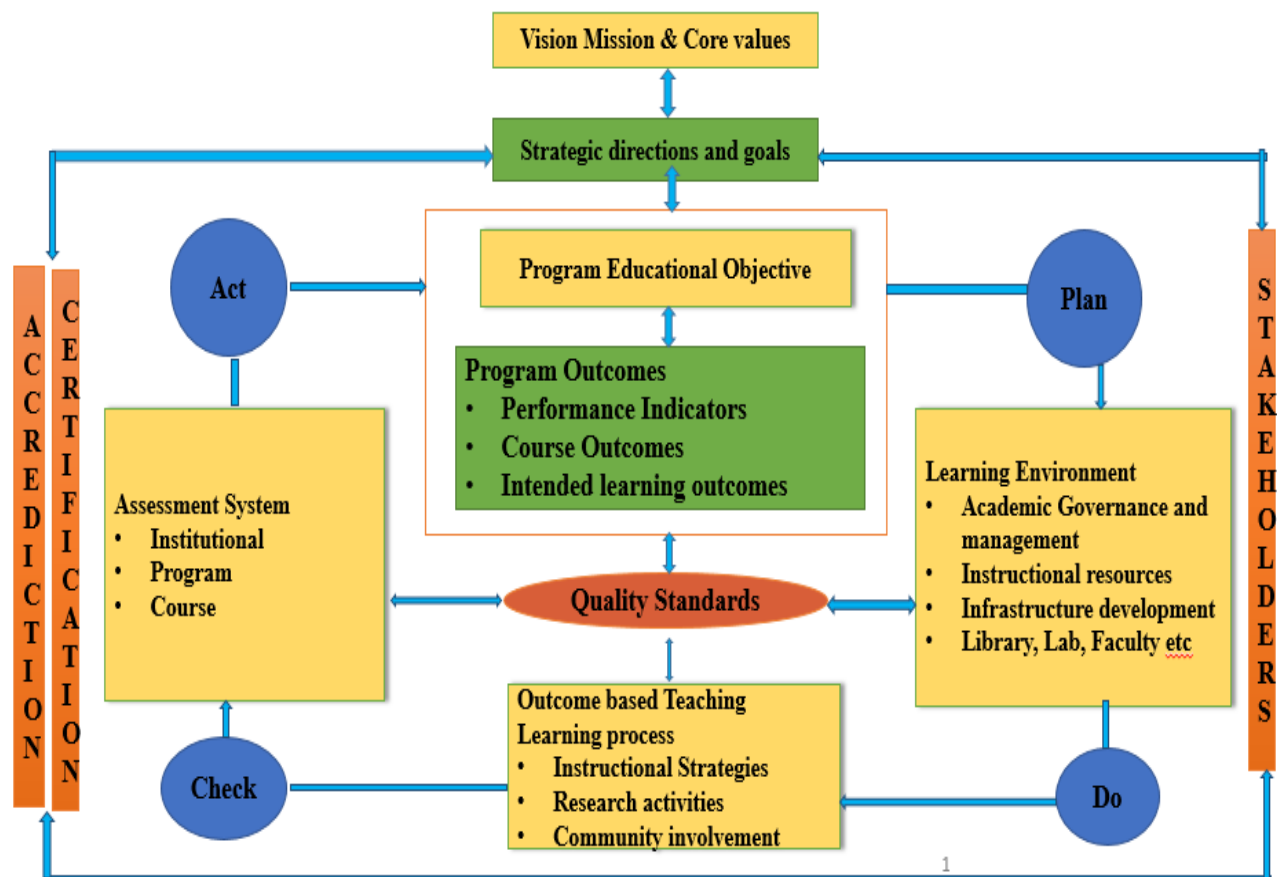

Figure 1.1: OBE Framework

From the above figure it is seen that a bottom to top approach is followed. Starting from the Course outcomes, Programme outcomes are achieved, which in turn attains the Programme educational objectives through which the Vision and Mission of the department is achieved, which contributes to the achievement and attainment of Vision and Mission of the institute.

COLLEGE VISION:

❖ **To transform our institution into quality technical education centre imparting updated technical knowledge with character building.**

COLLEGE MISSION:

❖ **To create an excellent teaching and learning environment for our staff and students to realize their full potential thus enabling them to contribute positively to the community.**

❖ **To significantly enhance the self-confidence level for developing creative skills of staff and students.**

DEPARTMENT VISION & MISSION

GUIDELINES TO FRAME DEPARTMENT VISION AND MISSION

The following guidelines have to be followed for the framing of vision and mission

- Department Vision and Mission has to correlate with the College vision and mission
- The goals of the department to be focused.
- It can be based on SWOT (Strength, Weakness, Opportunities, and Threats) analysis.

- Mission statement can include history, philosophy of academic, type of student served, environment, faculty, curriculum, Contributions to community etc.

The components of the mission statement are as follows

- Primary functions
- Purpose
- Stakeholders

VISION:

> ❖ **To conceive our department as Centre of Academic Excellence by catering quality education with ethical standards**

MISSION:

> **M1: To create a conducive atmosphere to achieve active professionalism by fortifying academic proficiency with ethical standards.**
>
> **M2: To enhance the confidence level to develop sustainable solution to upgrade the society forever.**
>
> **M3: To empower the students with prerequisite professional skills for enhancing Employability and entrepreneurship, continuing education and research.**

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

PEOs are broad statements that describe the career and professional accomplishments that the program is preparing its graduates to accomplish.

PEOs should be assessable and realistic within the context of the committed resources.

While framing the PEOs the following factors are to be considered.

- ❖ The PEOs should be consistent with the mission of the institution and department.
- ❖ All the stakeholders should participate in the process of framing PEOs.
- ❖ The number of PEOs should be manageable.
- ❖ It should be based on the needs of the stakeholders.
- ❖ It should be specific to the programme and not too broad.
- ❖ It should not be too narrow and similar to the POs.

PEO 1: Graduates shall have professional competency in the field of Computer Science and Engineering for pursuing higher education, research or as entrepreneurs.

PEO 2: Graduates shall work in a business environment with ethical standards, leadership qualities and communication necessary for engineering principles.

PEO 3: Graduates shall adapt to emerging technologies and respond to the challenges of the environment and society forever.

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

Adequacy in respect of publication & dissemination:

Vision, Mission and PEOs Vision, Mission and PEOs are displayed in HoD's Room, Faculty Cabins, Department Library, Laboratories, Classrooms, Attendance & Assessment Record, Department Notice Boards and other major locations. Vision, Mission and PEOs are published in the Institution website's Department web page (https://www.saec.ac.in/departments/cse/). It is also disseminated through e-mail and social networks.

Dissemination of Vision, Mission and PEOs among stakeholders:

The statements of Vision, Mission and PEOs are printed in the Academic calendar and Newsletters. The Vision and Mission statements are explicitly communicated to the newly enrolled students and the parents during Student Awareness Programs, Student Induction Programs, workshops, guest lectures, Conferences, Faculty Development Programme, Parent Teacher meetings, etc. Alumni are updated about any changes during Alumni interaction. The statements are communicated to the industry/employers through presentations during industrial

visits and with other industry-institute interactions. Additionally, dissemination of Vision, Mission and PEOs to various stakeholders of the program is done at the meetings of faculty members, Board of Studies (BOS) and Department Advisory Committee.

The stakeholders are as follows:
- ❖ **Students**
- ❖ **Parents**
- ❖ **Alumni**
- ❖ **Faculty members**
- ❖ **Industry experts**

RESPONSIBILITIES OF THE DIFFERENT COMMITTEES OF COLLEGE AND DEPARTMENT:

The following committees are active in our college:

- ❖ **Internal Quality Assurance Cell (IQAC)**
- ❖ **Academic Council**
- ❖ **Governing Council**

Internal Quality Assurance Cell (IQAC)

Members: Principal, HoD, Professors, Associate Professors, Alumni, Parents, Students, Industry experts.

Responsibilities: Member are responsible for dissemination of information on various quality parameters. Various sponsored programs have been organized and it has been documented.

Academic Council

Members: Principal (Chairman), Heads of the Departments, Teacher's Representative, Academician, Industry Experts, University Representative, Member Secretary, Treasurer & Correspondent (Permanent Invitee).

Responsibilities: The members are responsible for the maintenance of standards of education, teaching and training, inter departmental co-ordination, research, examinations and tests with in the Institute and shall exercise such other powers and perform such other duties and functions. Conducting internal assessments and various project exhibitions for the enhancement of

curriculum and research. This council is responsible for introducing new programme.

Governing Council

Members: Chair person, Trust Members, Senior Faculty – Teacher Member- Nominated by Principal, UGC Nominee, University Nominee, Ex Officio, Industrialist

Responsibilities: This council acts as a bridge between the management and stakeholders. The institution has a strong governing council made up of different luminaries from various walks of life that devices all policies and decisions related to both academic and administration. To ensure the efficiency and effectiveness of governing council, a number of academic and administrative bodies have been formed with duties and responsibilities. The governing council of the college discuss various issues and aspects contributing to the development of the department and the college. During the meeting the suggestions from planning and monitoring board are resolved. It chalks out a roadmap in order to achieve the goals of the institution. Budget allocation for development activities will be discussed and finalized.

The following committees/ Cells and their responsibility are listed below:

1. Department Advisory Committee
2. Program Assessment Committee
3. Academic Excellence Committee
4. Alumni Committee
5. Training and placement Cell
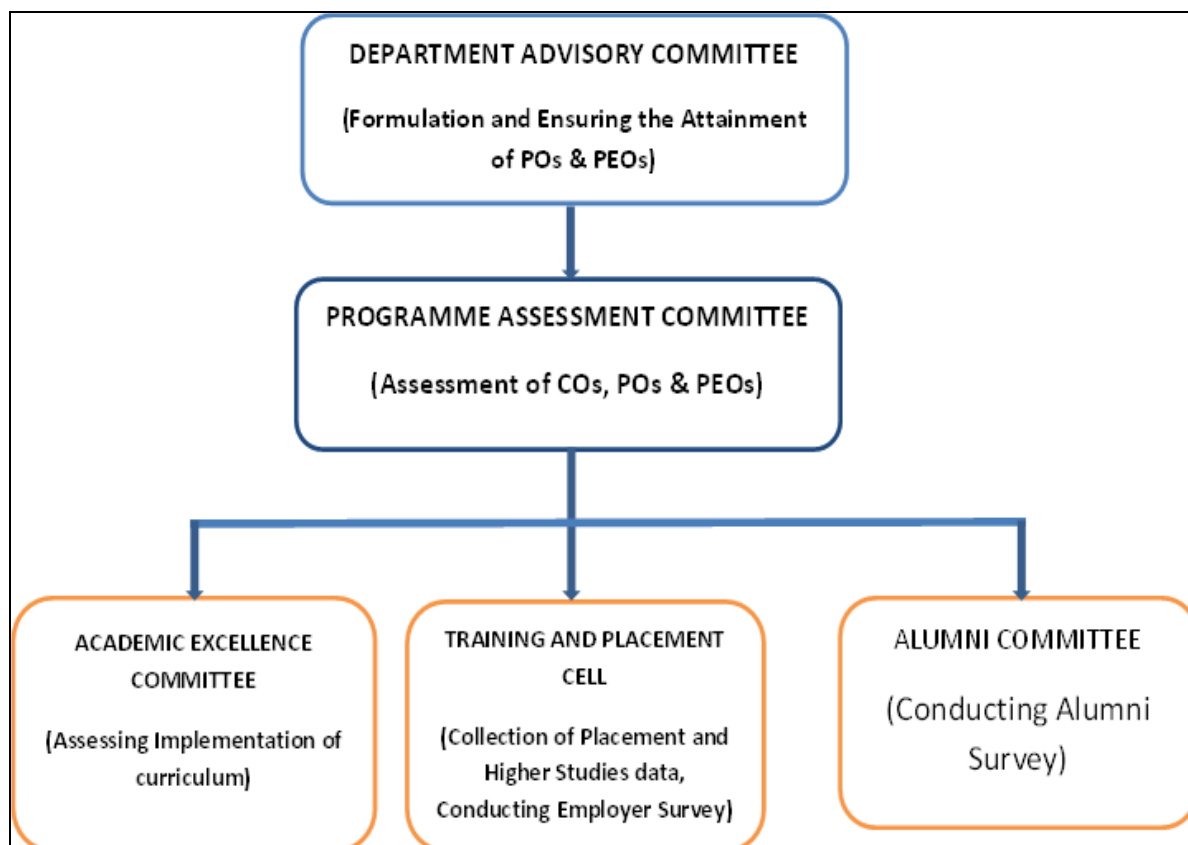6. Academic Monitoring and Measurement

Figure 1.2: Committees of the department

There is also a **Department Advisory Committee** with members from Alumni, Industry, Academia, Professor and Management. These members are generally very eminent and experienced in their fields. Their advice is taken while key decisions are made for improving the program or the Department on a whole. Their input is also vital in establishing Program Educational Objectives and periodic review of the Program.

Department Advisory Committee (DAC)

Members: Principal, HoD, Professors, Associate Professors, Alumni, Parents.

Responsibilities: Members' views are considered to meet our key decision for improving the programme. The input from this committee are seriously viewed and it is considered for framing PEOs and periodic review of the programme.

Program Assessment Committee (PAC):

Members: HoD, Professors, Associate Professors, senior faculty members of the department.

The PAC is responsible for coordinating activities related to accreditation. Those include PEO,

PO and formulation of assessment methods, various survey mechanisms and also coordinating with other committees. This committee is also responsible to summarize the results of various assessments of PEOs, POs and Curriculum.

Academic Excellence Committee (AEC):

The Academic Excellence Committee constitutes of a professor from each department and is *responsible to implement, assess content given by Anna University*. This committee collects the evaluation and recommendation sheets from the respective faculty of all courses. The committee member is also responsible for collecting the Course survey (Indirect) from students at the end of the course through the concerned Course coordinator and student exit survey at the end of their programme. Based on the recommendation by the faculty regarding the possible review of the course delivery content the committee consults the Program Assessment committee for incorporating any modifications for improvement.

Alumni Committee:

The Alumni Cell is *responsible for keeping the record of the alumni by keeping in touch with them* and conducts Alumni meet every year (26th January). During the meet, the Cell interacts with the alumni and takes their input on how the curriculum/activities helped for their profession so that this must be easy to assess the PEOs by the Program Assessment Committee. The Cell is also responsible to conduct indirect assessment of alumni through alumni survey regarding quality of the program and submit consolidated results to the Program Assessment Committee.

Training and Placement Cell:

The objective of this Cell is to *guide the students to get employment or to pursue higher studies*. This committee works in coordination with the College Placement and training Cell. The Cell is responsible for arranging the training based on the needs of the students and guide them to get employment in placement events organized at college level.

The Cell maintains the record of the student's employment and higher studies and gives input to the Program Assessment Committee. The Cell is also responsible for industry institute interaction and collecting the feedback from employers through surveys.

Academic monitoring and Measurement Process:

The objective of this process is to conduct the Unit tests and measure the student's ability to score their marks in unit tests. This process works in co-ordination with the college Examination committee. The member of this process is responsible for conducting tests and collecting the score sheet from various subjects in charges and analysis students' performance through their results.

Board of Studies (BoS)

Members: HoD (Chair person), University Nominee, Subject experts, Representative from Industry, Alumni, Professors, Associate Professors, Senior faculty members.

Responsibilities: A statutory body and reports to the Academic Council through the Principal. All academic matters like Introduction of a new Academic Programme, Revision of a programme / course, review of academic rules, framing of syllabus etc., will be done with atmostcare.

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

The process for defining Vision and Mission of the department was discussed in the department level and it was established through a consultative process involving the stakeholders of the department, the future scope of the department and the societal requirements as shown in Figure 1.1.

❖ A Committee at Institute-faculty-department level is formed for identification, implementation and review of Vision and Mission statements in consistency with the vision and mission statements of the institute.

❖ Various bodies like DAC (Department Advisory Committee, PAC (Programme Assessment Committee) are formed to advice in various matters.

❖ In departmental meetings, departmental Vision and Mission statements are reviewed by specifically considering the latest trends, industry demand etc.

❖ The proposed Vision and Mission statements are also circulated to the Alumni, Employer, Faculty and Parents and their feedback is taken.

❖ After taking in consideration of the feedback received, the Program Advisory Committee

prepares draft Vision and Mission statements which are discussed and brainstormed in a meeting consisting of the entire faculty.

❖ The statements are then finalized.

For formulating the vision and mission of the department, the following steps were followed:

Step 1: Vision and Mission of the Institution are taken as basis. The advisory Committees of the Institute decided to modify the various departmental Vision and Mission statements and asked the HODs to take up this   matter in their departments respectively. The committee also decides to modify the institute Vision and Mission statement.

Step 2: HODs took up the matter with Program Assessment Committee of their **r**espective departments. Views are taken from stakeholders of the department such as students, faculty

Members, parents, Employers and alumni. We can have various brainstorming session with our stake holders in connection with Department Advisory Committee (DAC) Meeting and Programme Assessment Committee (PAC) Meeting.   (Department Advisory Committee comprises with Principal, HoD, Professors, Associate Professors, Alumni, Parents and Programme Assessment Committee Meeting comprises with HoD, Professors, Associate Professors, and senior faculty members of the department.)

Step 3: The Program Assessment Committee provided the basic draft of the department Vision & Mission in alignment with Graduate Attributes along with the Vision & Mission of the institute.

Step 4: The views about the Vision and Mission of the Department are then drafted by the team of faculty members of the department in the PAC meeting & external stakeholders in the DAC meeting after getting suggestions and feedback from the students, faculty members, parents, Employers and alumni as mentioned above step.

Step 5: Draft of Vision & Mission was discussed with the faculty in the departmental meeting.

Step 6: Faculty members were requested to discuss the Vision & Mission statements in their respective classes and ask the students to give their inputs.   Vision & Mission statement drafts were displayed on the notice board.

Step 7: Suggestion of Alumni regarding Vision and Mission statement given in their feedback forms were incorporated.

Step 8: Further suggestions were invited from parents & prospective employers.

Step 9: The various suggestions and comments and their views are received. It will be evaluated

and then filtered, which will be forwarded to Internal Quality Assessment Cell (IQAC).

Step 10: If Programme Assessment Committee and Department Advisory Committee is not satisfied with the views of the students, faculty members, parents, Employers and   alumni then steps 2 & step 3 gets repeated till the PAC & DAC committee gets complete satisfaction.

Step 11: The Vision and Mission are analyzed and reviewed to check the consistency with the Vision and Mission of the Department at the College level by the IQAC.

Step 12: Approved vision and mission is presented in the academic council and Governing Council meeting.
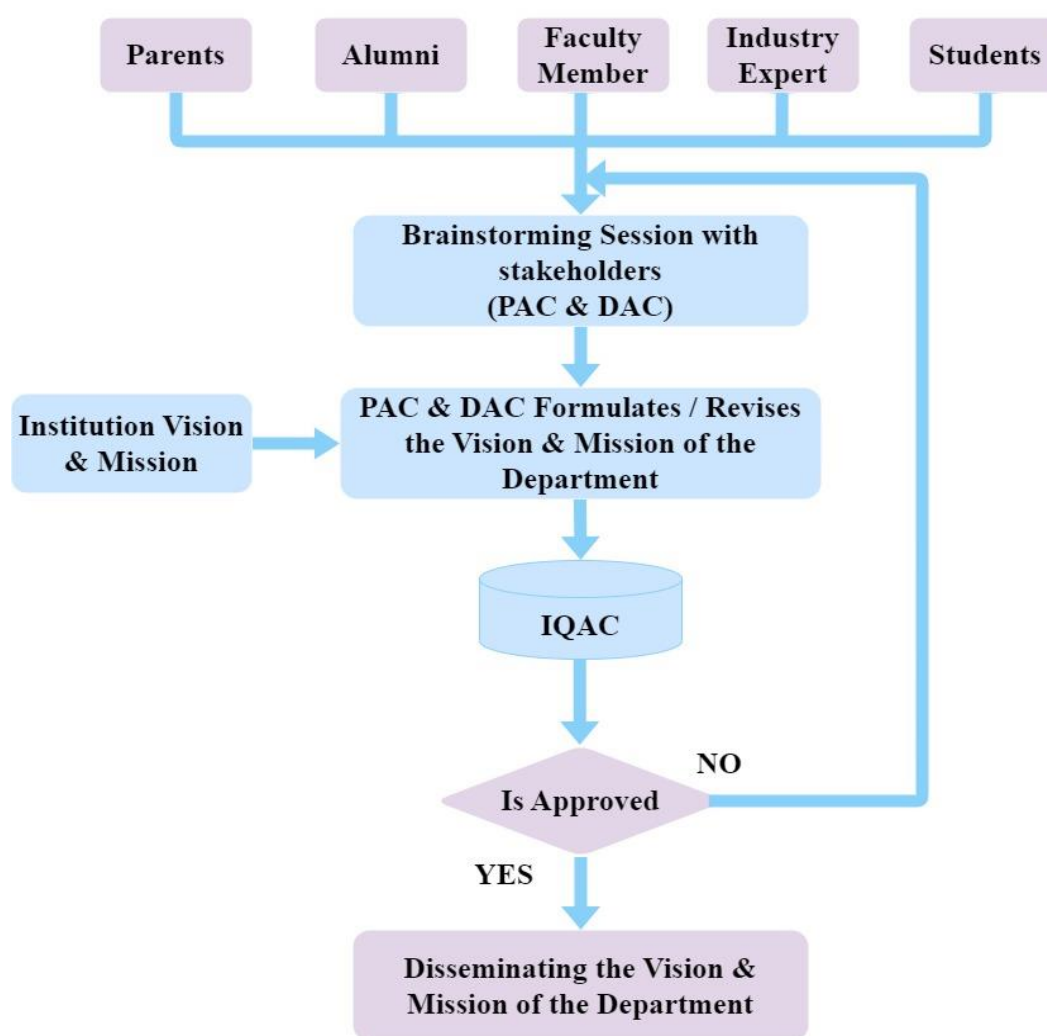

Figure 1.3 Formulation of Vision and Mission

PEO Framing Process:

The Program Educational Objectives (PEOs) of the Department were also established through a consultative process involving various stakeholders (Figure 1.2). The following steps were followed for the establishment of the same:

The Program Educational Objectives are framed by the Department Advisory board after a careful consideration of feed backs received from the internal and external stake holders. The process of establishing outcome based PEOs started with providing awareness of the new NBA criteria to the entire faculty through conducting workshops and seminars. The objective of the program is to produce globally competent Computer Science Engineers possessing all round skills. The Governing council framed PEOs in-line with the above said requirement. Subsequently the alignment of the framed PEO is verified with the Mission of the institution and Department. Finally accepted version of PEO will be dissemination through all regular modes.

Figure 2 below shows the process of establishing PEOs.

| Step 1:	Keeping in view the Departmental Mission, Institute Mission, The Program Educational Objectives (PEOs) of the department were deliberated upon by the committee (PAC & DAC) setup by the Head of the Department.
Step 2:	Proposed Program Educational Objectives (PEOs) were circulated among the various stakeholders.
Step 3:	As per the feedback received from the various stakeholders including the students, the Program Educational Objectives (PEOs) were updated.
Step 4:	The updated Program Educational Objectives (PEOs) were sent to the Internal Quality Assessment Cell (IQAC) for subsequent approval.
Step 5:	Under the chairmanship of Head of the Department, the Departmental Faculty Board (DFB) approved the PEOs.
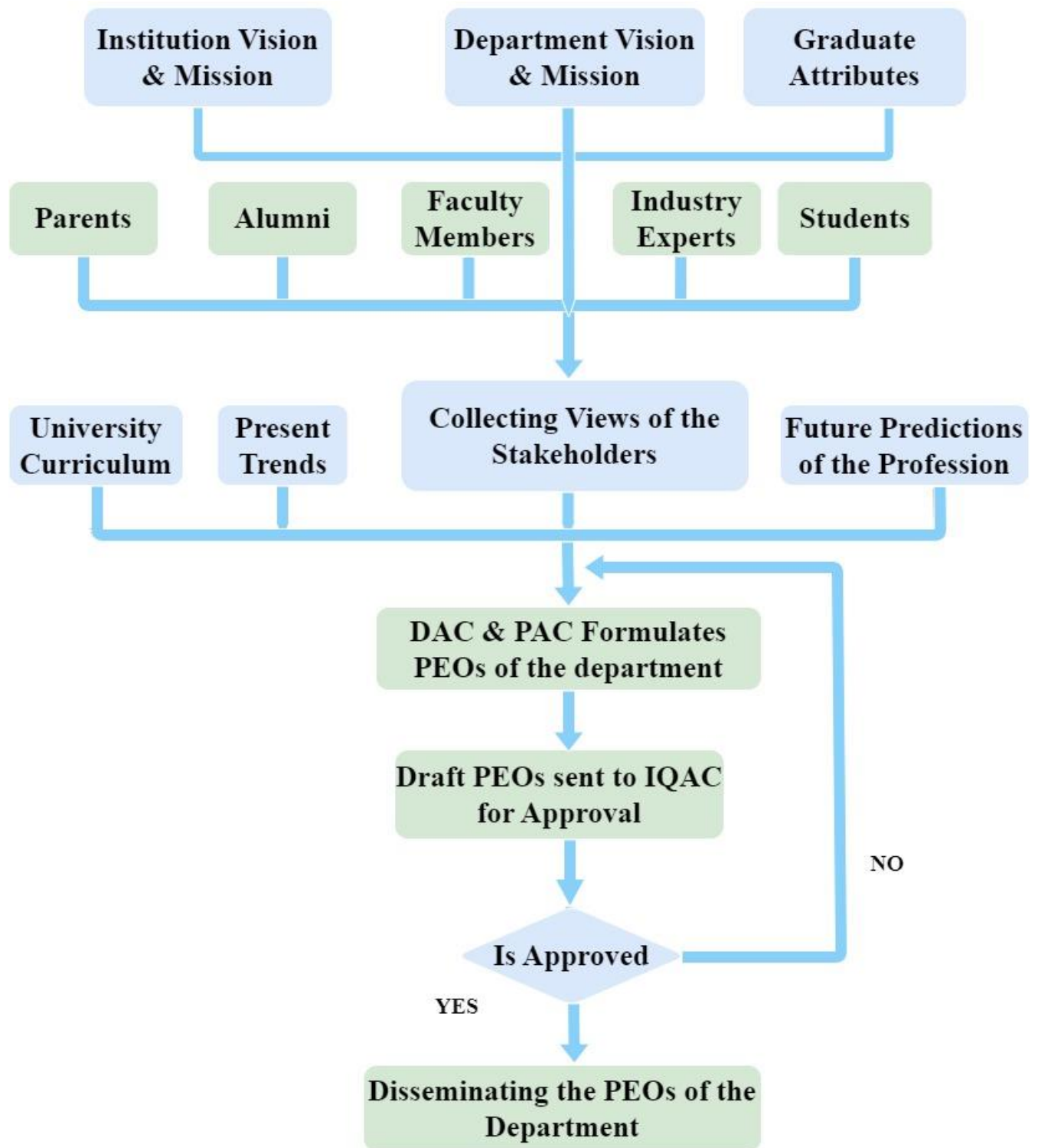
Figure 1.4 Formulation of PEOs

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

PEOs	MISSION		
	M1	M II	M III
Graduates shall have professional competency in the field of Computer Science and Engineering for pursuing higher education, research or as entrepreneurs	3	2	3
Graduates shall work in a business environment with ethical standards, leadership qualities and communication necessary for engineering principles.	3	3	2
Graduates shall adapt to emerging technologies and respond to the challenges of the environment and society forever.	2	3	3

Table 1.1 : Mapping of Mission statements with PEOs

a) **Consistency of the PEO - I with department's Mission Statement**

"To ensure that graduates shall have professional competency in the field of Computer Science and Engineering for pursuing higher education, research or as entrepreneurs."

PEO - I imply that graduates acquire knowledge of engineering and management principles, investigate and demonstrate problem solving skills to shape them as computing professionals. This PEO is consistent with the Mission of the Department "To achieve professionalism by fortifying academic proficiency" and also "To empower the students with prerequisite professional skills for enhancing employability and entrepreneurship, continuing education and research."

b) **Consistency of the PEO - II with department's Mission Statement**

"To enable that the graduates will have ethical standards, leadership qualities and communication necessary for engineering principles."

PEO - II implies that our graduates have ethical standards, leadership qualities, communication, presentation and team work skills required for them to be successful upon their employment. The Programme trains and prepares students to work in groups and to have the necessary skills for technical writing and for oral presentations. This PEO is consistent with the mission of the Department to "Create a conducive atmosphere to achieve professionalism" and also "To enhance the confidence level to develop sustainable solution to upgrade the society forever."

c) **Consistency of the PEO- III with department's Mission Statement**

"To establish that our graduates could adapt to emerging technologies and respond to the challenges of the environment and society forever."

PEO-III implies that our graduates have efficient knowledge and placement assistance through Memorandum of Understanding with leading industries and also by providing internships and projects. The department also focuses on high end training in advanced technologies to attain Global Certification with well certified trainers. We are providing conducive atmosphere by means of imparting current technologies by means of Hands on sessions with Industry experts thereby students become sound in academic proficiency. This PEO is consistent with the mission of the Department "To enhance the confidence level to develop sustainable solution to upgrade the society forever." and also "To empower the students with prerequisite professional skills for enhancing employability and entrepreneurship, continuing education and research."

Detailed Justification for Mission with PEOs mapping:

PEOs	Mission of the Department			Justification
	M1	M2	M3	
PEO1	3	2	3	Providing conducive atmosphere through quality education, collaboration with industries, setting up industry initiated laboratories, exposure to latest tools and technologies, Land to lab based learning, Industrial visit, hands-on workshop, there by our students graduated with professional competency and skills. Hence PEO1 is strongly maps to M1 Our students are exposed to industrial/societal connects through professional societies/bodies. We encouraging self-learning through seminars and projects, students made to organize technical events like symposium and cultural events through departmental forum, make them confident and allow them to develop a solution to society forever. Hence PEO1 is moderately mapped to M2. With the support of encouraging environment of the college our student become Employable. Also become entrepreneur by means of initiative from entrepreneurship cell of the college. Continuing education, research is also possible with the help of the outstanding curriculum designed by the institution. Hence PEO1 is Strongly mapped with M3
PEO2	3	3	2	By imparting the subjects on ethical standards and also through participation in motivational lectures, organizing the technical events like symposiums and conferences, thereby we, nurturing the leadership qualities and seed the social responsibility to the students. Hence PEO2 is strongly mapped to M1. Our graduates can able to work in challenging business environment with essential moral values, management quality and sound communication skills. So our graduates can have self-confidence to build up sustainable result to promoting the people forever. Hence PEO 2 is strongly mapped to M2. Self-learning through seminars, internships, projects and enhancing the communication of the students with external soft skills training, Increasing the chances of employability. Also through Entrepreneurship cell of our college motivating the students to become the entrepreneur. Hence PEO2 is moderately mapped to M3
PEO3	2	3	3	We are providing conducive atmosphere by means of imparting current technologies by means of Hands on sessions with Industry experts thereby students become sound in academic. Hence PEO3 is moderately mapped with M1.

				Memorandum of Understanding with leading industries which imparting efficient knowledge sharing and also placement assistance by providing internships and projects. The department focuses on training in Analytical, technical and soft skills to increase the chances of employability and entrepreneurship. The department also focuses on high end training in advanced technologies to attain Global Certification with certified trainers. Hence PEO3 is strongly mapped with M2 and M3. **Our Graduates can adjust to budding technology with prerequisite professional skills and react to the challenges of the environment and society forever. So they can able to achieve attractive employability and entrepreneurship, continuing education and research.** **Hence PEO3 is strongly mapped with M3**

JUSTIFICATION:

J1:

1 **PEO1 – M1:** Providing conducive atmosphere through quality education, collaboration with industries, setting up industry initiated laboratories, exposure to latest tools and technologies, Land to lab based learning, Industrial visit, hands-on workshop, there by our students graduated with professional competency and skills.

Faculties with high degree of academic professionalism combined with excellent infrastructural facilities and teaching learning methodologies shall enable graduates to perform the analysis, design and construct complex systems accept the new technological challenges.

   Hence PEO1 is strongly maps to M1.

2 **PEO1 – M2:** Students are exposed to industrial/societal connects through professional societies/bodies. We encouraging self-learning through seminars and projects, students made to organize technical events like symposium and cultural events through departmental forum, make them confident and allow them to develop a solution to society forever.

   Hence PEO1 is moderately mapped to M2.

3 **PEO1 – M3:** The commitment to professional ethics and responsibilities in applying their knowledge in the best interest of society. The department also focuses on high end training in

advanced technologies to attain Global Certification with certified trainers. Higher Education awareness programmes, Higher education Preparatory resources available in College and department library will give moral support to the students interested in higher studies. Our college having tie-up with MAT lab, CISCO and other major Industries to the welfare of the students and staff interested in research activites.

Hence PEO1 is strongly maps to M3.

J2:

1. **PEO2 – M1:** By imparting the subjects on ethical standards and also through participation in motivational lectures, organizing the technical events like symposiums and conferences, thereby we, nurturing the leadership qualities and seed the social responsibility to the students.

Hence PEO2 is strongly mapped to M1.

2. **PEO2 – M2:** Suitable incentive to be granted to those who take the consultancy projects so that they get exposure to the real field problems and challenges. Apply ethical principles and commit to professional ethics, responsibilitiesand norms of the engineering practice. Students with ethical values better cater to consultancy work.

Hence PEO2 is strongly mapped to M2

3. **PEO2** – **M3:** Self-learning through seminars, internships, projects and enhancing the communication of the students with external soft skills training, Increasing the chances of employability. Also through Entrepreneurship cell of our college motivating the students to become the entrepreneur.

Hence PEO2 is moderately mapped to M3

J3:

1 **PEO3** – M1: We are providing conducive atmosphere by means of imparting current technologies by means of Hands on sessions with Industry experts thereby students become sound in academic.

Hence PEO3 is moderately mapped to M1.

2. **PEO3** – M2: Memorandum of Understanding with leading industries which imparting efficient knowledge sharing and also placement assistance by providing internships and

projects. The department focuses on training in Analytical, technical and soft skills to increase the chances of employability and entrepreneurship. The department also focuses on high end training in advanced technologies to attain Global Certification with certified trainers.

Hence PEO3 is strongly mapped with M2 and M3.

3. **PEO3 –** M3: For graduates to be prepared for industry, provision of state of the art facilities through establishment of centre of excellence is necessary. To impart training for development of laboratory and software skills, flourishing of the department as a center of excellence is very important.

Hence PEO3 is strongly mapped with M3

Detailed Justification for PO with PEOs mapping:

PEO1: To gain professional competency, it's important to have engineering knowledge(PO1), problem solving skills (PO2), along with a systematic approach to investigate Computer Science and Engineering problems (PO4), in order to examine societal, health, safety etc. issues and identify the responsibilities with respect to the issues (PO6). This will ensure sustainable development (PO7) and will also ensure lifelong learning of a individual (PO12) in the field of Computer Science and Engineering. Professional competency also includes the ability to demonstrate professional engineering approach utilizing technical resources (PSO1) and ability to conductfield and laboratory investigations (PSO3). Leadership qualities (PO3), utilizing modern it tools (PO5), management of time and finical resources (PO11) and the ability to analyse designs and construct structural l systems (PSO2) all sum up to enhance the professional competency of an individual.

PEO2: To prepare the graduates to work in different organizations, the graduates should be able to identify and analyse complex engineering problems (PO2), obtain their solutions (PO3) and develop reasonable conclusions using research-based knowledge (PO4). The graduates should utilize the contextual information to identify social and health responsibilities (PO6) and perform efficiently as an individual or member of a team (PO9) to implement knowledge and engineering skills for efficient time and resource management (PO11). The individual should be able to analyse and construct structural systems (PSO2)

along with constant up graduation of knowledge regarding recent developments (PO12). Application of basic scientific knowledge (PO1), usage of modern software (PO5), sustainable development by means of engineering science (PO7), adherence to professional ethics (PO8), efficient comprehension and communication of ideas (PO10), along with the ability to apply engineering principles (PSO1) and conduct lab and field investigations(PSO3) will all prepare Computer Science and Engineering graduates to work in different industrial or other organizations.

PEO3: The graduates should inculcate the sense of ethics, morality (PO8) and leadership (PO9) while practicing engineering profession. This will ensure a professional engineering approach (PSO1) which requires working in diverse environments. The social legal and cultural responsibilities relevant to engineering practice (PO6) and a sustainable development in context to the impact on environment and society (PO7) and effective communication of ideas in verbal or printed form (PO10), will help the individuals to furnish effective knowledge required for designing of systems (PSO2).