State the process for defining the Vision and Mission of the Department, and PEOs of the program

The vision and mission of the department and the PEOs of the program are defined by taking the views of various stakeholders associated with the Institute/Department, latest developments, future scope and needs of the society.

Process for Defining Vision and Mission of the Department:

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 ACE (Advisory Committee on Education, AAAC (Academic and Administrative Audit 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 into 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.

SWOT ANALYSIS: DEPARTMENT OF ELECTRICAL ENGINEERING, FACULTY OF ENGINEERING, DEI

STRENGHTS

1. Faculty
    - qualified, dedicated and stable with excellent academic backgrounds
    - Well established department functioning for more than 60 years
    - Junior classes taught by senior faculty
2. Students
    - Good Students
    - Good Performance in National tests, extracurricular activities
3. Research
    - Strong research focus-publications, R & D projects
    - Consultancy work

4. A curriculum designed to meet both national needs and comply with international standards
    - Strong engineering science component
    - Availability of a good variety of general education courses
    - A well structured laboratory experience
    - A strong professional component
    - Equipped laboratory, library and IT Facilities
    - ICT enabled classrooms
5. Community Service
    - Technical consultancy to community & University

Weaknesses

1. Concerns in certain outcomes in graduating students
    - Oral and written communication skills
    - Integrated design experience and real world applications
    - More creative and independent laboratory experience

2. Quality of current students
    - Lack of motivation to excel
    - Inadequate training in critical or analytical thinking
    - Less number of full-time Ph.D. students

3. Inappropriate mode of teaching
    - Lack of active learning
    - Inadequate classroom assessment
    - Faculty fails to motivate the students

4. Large proportion of faculty without industrial experience. **Limited staff**

5. Inadequate reward systems
    - Inadequate merit based incentives for promoting excellence

6. Inconsistencies in the capabilities of Faculty and support staff
   - Pay revision of Teaching Assistants due for a long time
   - Technicians need motivation and training
   - Lack of Secretarial and Administrative staff
   - More emphasis on Professional ethics

7. Insufficient space for expansion
   - Especially needed due to new specializations

8. Complicated decision-making process at the University level
   - Complicated purchasing procedures
   - Complicated hiring procedures
   - Inadequate database management

9. Insufficient funding support
   - Research
   - Less faculty development opportunities (sabbaticals, local mentors)
   - Less talent in teaching profession
   - Maintaining and upgrading facilities, new building project

OPPORTUNITIES

1. Assessment and accreditation
2. Emerging sustainable technologies
   - Technologies that do not require extensive industrial infrastructure
   - Information based technologies
   - Use of technology for teaching large classes
   - Distance learning

3. New trends in multi-disciplinary professional education and new teaching methods
   - Possibility of re-designing curriculum and by-laws to allow multi-disciplinary teaching and learning
   - Possibility of utilizing e-learning and distance education

4. Young and dynamic society
   - A good pool for potential students
   - Readiness to accept changes
   - Alumni support

THREATS

1. Competition (local, regional and global)
   - Emerging local and regional private colleges
   - Accessibility of international institutions via distance education
   - Fast pace of developments in technology (e.g. IT, emerging new fields)
   - Opening up of engineering education to foreign universities (and investments)

2. Enrollment in engineering
   - Lack of sufficient number of quality students with strong interest in engineering

3. Quality of incoming students (language, analytical thinking, motivation):
   - Inadequate
   - The quality of teaching staff
4. Increase in importance attached to number of research papers diluting quality of teaching
5. Self Complacency
6. Lack of ethics and measures to check violation of ethical standards.

Vision of the Department

To be among top Electrical Engineering Departments of the country known for excellence in teaching and research in Electrical Engineering with due emphasis on relevance to contemporary societal needs

Mission of the Department

M1:Academic Excellence

To develop outstanding engineers well versed in the theory and practice of electrical engineering discipline.

M2:Systems Approach and Total Quality Management

To follow a holistic approach based on excellence, initiative, creativity and innovation that ensures competence in electrical engineering with specialization in emerging areas.

M3:Social Responsibility& Sustainable Development

To contribute to National Development by meeting the needs of the society and industry, empowering weaker and underprivileged sections, and to build economy through research and frugal innovation, anchored in the principle of achieving more with less.

M4:Ethics & Values

To uphold the highest ethical standards, inculcate values, create willingness and capacity to work with one's hands, promote respect for dignity of labour and a spirit of self-sacrifice to serve humanity.

To bring this vision & Mission to reality, our department is committed to

Attaining national and international recognition among peer institutions for excellence in both research and teaching by:

- Producing Graduating students who are well educated in technical knowledge, with solid communication & teamwork skills, sensitive to societal needs and posses high ethical standards.
- Partnering with academic, industrial and government entities and consultancy to multinational and other blue-chip companies
- Updating and strengthening the quality of its programs according to the needs of the society
- Sustaining an entrepreneurial culture by public/private partnerships.
- Keeping pace with scientific and technological progress in engineering
- Achieving higher quality placement while retaining 100 % placement as measured by number of top companies visiting campus e.g. high turnover companies, blue-chip companies etc.

- Increasing
  - publications in high Impact Factor Journals
  - number of citations per faculty member
  - number of Ph Ds (at least one per faculty member per year)

Period	Goal	Strategy
2012-2016	Review and update of curriculum	Make the curriculum at par with 10 best departments in the country keeping the institute core course structure intact
	Better & More Modern Laboratories	Utilize SAP grant effectively
		Apply for MODROBs schemes of AICTE every year for lab up gradation
		Design new experiments for effective lab experience
	FIST-II	FIST-I completed, submit good completion report
		Create a comprehensive proposal for FIST-II including all achievements of the department
		Pursue and present the proposal effectively
	Increased R & D projects in the department	Every faculty to have at least one R & D Project
		Involve and encourage students in R & D activities i.e. Earn while Learn scheme
		Encourage M. Tech. students to contribute more by providing more exposure in National & International events
	Measurable Indicators of Goal Achievements	a. R & D Outlay b. FIST-II sanction c. International Events d. Student achievements e. Student feedback f. Alumni feedback g. Quality of research papers

Period	Goal	Strategy
2017 - 2021	Review and update of curriculum	Ensure that the curriculum is at par with 10 best departments in the country keeping the institute core course structure intact
	Review the specialization streams	Adapt to the needs of the time
	SAP-DRS(II) for the department	Utilize SAP –I grant effectively
		Apply for MODROBs schemes of AICTE every year for lab up gradation
		Design new experiments for effective lab experience
		Seek clearance from relevant agencies
		Establish lab. Infrastructure

	Start specialization streams in the broad based masters programme in Engineering Systems	Attract qualified and interested Research Students
	Organize one international event to increase visibility of the Department	Plan for Int. Conference on Computational Intelligence in EE
		Seek and obtain funding from DST, UGC, AICTE and sponsorships etc.
	Establish Centre of Excellence	One Centre of Excellence in the area of strength
	Visiting faculty	Invite Star Professors/individuals of international repute
	Education in distance mode	Design effective curriculum and reach out to under privileged societies in the country
	Social Responsibility	More involvement of faculty members in solving highly relevant problems e.g. water, energy, transportation which need local solutions.
	Measurable Indicators of Goal Achievements	a. R & D Outlay b. SAP-DRS(II) sanction c. International Events d. Standard of students graduating e. Student feedback f. Alumni feedback g. Quality of research papers

Period	**Goal**	**Strategy**
	Review and update of curriculum	Ensure that the curriculum is at par with 10 best departments in the world keeping the institute core course structure intact
2022-2026	Improve infrastructure in the department	Utilize SAP –II grant effectively
		Review of labs and other infrastructure facilities and comparison with world's top 10 departments
		Generate resources for the same
	Establish centre of Excellence after competing SAP-I and SAP-II	Addition of least one center of Excellence
	Incubation centre for startups	Generate resources for Incubation center
	Establish Regional Test Centre for Electrical Equipment (Get NABL accreditation)	Generate resources and equipment to be eligible
	IPR Cell for promoting IP, Patents, Copyrighted material etc. IP awareness to be spread in students and staff Innovative products to be developed and TOT (Transfer of Technology) to developing industries.	Promote projects based on innovative ideas/ solutions; provide infrastructural, financial and administrative support to the staff and students.
	Organize one international event every year as per calendar	Organize to have maximum impact and minimum disruption in the routine.

	Education in distance mode	Design effective curriculum and reach out to under privileged societies in the country
	Social Responsibility	More involvement of faculty members in solving highly relevant problems e.g. water, energy, transportation which need local solutions.
	Measurable Indicators of Goal Achievements	a. R & D Outlay b. SAP-DRS(II) completion c. International Events d. Standard of students graduating e. Student feedback f. Alumni feedback g. Quality of research papers

Period	Goal	Strategy
2027-2031	R & D Projects to touch new projects of 1 crore/year	Motivate faculty members to actively aim for extra mural funding
		Administrative support for minimizing paperwork
	At least two full time Research scholars per faculty members	Attract full time research scholars per faculty members
		Provide attractive lab facilities
	Departments to have Research Collaborations with major National and International Organizations	MOU with IITs, IISc and others in teaching and research
	Encourage innovation and entrepreneurship	• University support in the form of FITT. UG students to be encouraged to do practical projects. • Alumni to support budding entrepreneur from faculty. • Hold Entrepreneurship Development Programmes regularly to motivate students to become entrepreneur • Upgrade IIPC to EDC (Entrepreneurship Development Cell
	Measurable Indicators of Goal Achievements	• Revise departmental assessment plans and monitor their implementation • Continue periodic surveys to assess outcomes, and learning environment • Survey and benchmark student and faculty outcomes • Establish an international academic advisory board