

CRITERION 1	VISION, MISSION AND PROGRAM EDUCATIONAL OBJECTIVES	Max. Marks: 50 Claimed: 50
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1.1 STATE THE VISION AND MISSION OF THE DEPARTMENT AND INSTITUTE (5)

About NIT Srinagar

National Institute of Technology, Srinagar is one of the premier Educational Institutes in the Northern Regions of the country. It was established in 1960 and has been one of the eighteen Regional Engineering Colleges sponsored by the Govt. of India during the 2nd Plan. The Institute acquired the status of National Institute of Technology with deemed to be University status during August 2003 and attained full autonomy in its Academics.

The Institute is situated at the banks of world-famous Dal Lake, with the far-famed Hazratbal Shrine on another side of the campus. NIT Srinagar is a residential Institute with accommodation facility in Hostels and Staff-Quarters. There are four Boys and one Girls hostel which swallows about 1500 boys and 200 girls. Besides running the B. Tech. Programme, the Institute also offers M. Tech programme in many streams. In addition to that, a large number of students are registered for M. Phil and Ph.D. Programmes.

The Institute has one of the best technical library in J&K State. It has a collection of over 60,000 books on Engineering Science and humanities and about 6,000 bound volumes/Journals, both foreign and Indian. The library remains open from 9.00 am to 10 pm. It has online repository of A.S.C.E, A.S.M.E.A.E.L, J.C.C.C etc in addition to journals through I.N.S.E.S, COMSORTIEM. It also has a collection of I.S.I codes, in the C.D-Rom format.

VISION OF THE INSTITUTE

To establish a unique identity of a pioneer technical Institute by developing a high quality technical manpower and technological resources that aim at economic and social development of the nation as a whole and the region in particular keeping in view the global challenges.

MISSION STATEMENT OF THE INSTITUTE

- M1.** To create a strong and transformative technical educational environment in which fresh ideas, moral principles, research and excellence nurture with international standards.
- M2.** To prepare technically educated and broadly talented engineers, future innovators and entrepreneurs, graduates with understanding of the needs and problems of the industry, the society, the state and the nation.
- M3.** To inculcate the highest degree of confidence, professionalism, academic excellence and engineering ethics in budding engineers.

DEPARTMENT

Abstract

The department of Civil Engineering is the largest and one of the pioneering departments of National Institute of Technology, Srinagar. It was established at the inception of the Institute (then REC Srinagar) in 1960. Over the years, since then, the Department has progressed with a considerable development in its infrastructure, both in terms of its faculty and the other learning facilities. The Department has produced several eminent professionals who have made excellent contribution in the field of Civil Engineering, both at National and the International levels.

The Department offers a four-year course leading to the Bachelors' Degree in Civil Engineering and two-year courses leading to Master's degree in four major specializations of civil engineering (viz., Water Resources Engineering, Structural Engineering Geotechnical Engineering, and Transportation Engineering & Planning). The Department, in addition to Under-graduate and Post-Graduate programs is offering Doctoral Programs in all the specializations of Civil Engineering.

The Department is known for its reputed and well qualified faculty having experience in diverse fields. The faculty is supported by experienced technical staff and well-equipped laboratories. The faculty strives its level best in imparting the latest technical knowledge to the students and conducting the high quality of research. The faculty also offers technical advice on the live and challenging civil engineering problems to various Government, semi-government and the Private organizations.

The Vision, Mission and the Program Educational Objectives (PEOs) of the Department being presented below have been finalised in view of the ever-growing technical requirement and need in the field of Civil Engineering after considering the feedback from various Stakeholders, which include Students, Alumni, Parents of the Students, Faculty and Staff Members, Industries and Research Organisations

Vision of department

To create a unique identity of the Department by achieving the excellent standards of quality technical education keeping a pace with the rapidly changing technologies and to produce Civil Engineers of global standards with the capability of accepting new challenges.

Mission of department

- M1.** To promote academic growth in the field of Civil Engineering by offering state-of-the art undergraduate and postgraduate programmes.
- M2.** To provide knowledge base and consultancy services in all areas of Civil Engineering for industry and societal needs.
- M3.** To inculcate higher moral and ethical values among the students to become competent Civil Engineers with overall leadership qualities.
- M4.** To flourish as the Centre of Excellence in the emerging areas of research related to Civil Engineering and its allied fields.

1.2 STATE THE PROGRAM EDUCATIONAL OBJECTIVES (PEOS) (5)

Program Educational Objectives

- PEO1.** To produce professionally competent Civil Engineers, capable of applying the knowledge of contemporary Science and Technology, to meet the challenges in the field of Civil Engineering and to serve the Society.
- PEO2.** To prepare the Civil Engineering graduates to work in industry, government or other organizations in different capacities involving individual and team work.
- PEO3.** To inculcate among the students the sense of ethics, morality, creativity, leadership, professionalism, self-confidence and independent thinking.
- PEO4.** To impart the training in problem visualization, surveying, analysis and planning for its solution.
- PEO5.** To impart training for development of laboratory and design skills, communication skills and skills for software and other modern tool usage among the students.
- PEO6.** To inculcate in the students the ability to take up the innovative research projects and to conduct investigations of complex Civil Engineering problems using research based methods, thus urging them for higher studies.

1.3 INDICATE WHERE THE VISION, MISSION AND PEOS ARE PUBLISHED AND DISSEMINATED AMONG STAKEHOLDERS (15)

Locations where the Vision, Mission, PEOs and PSOs are published:

Sr. No.	Location	Institute		Department			
		Vision	Mission	Vision	Mission	PEO	PSO
1.	Institute Website/ Departmental Webpage	✓	✓	✓	✓	✓	✓
2.	Department News Letter & Notice Board	✓	✓	✓	✓	✓	✓
3.	Course file	✓	✓	✓	✓	✓	✓
4.	Lab Manual	✓	✓	✓	✓	✓	✓
5.	Conference workshop/ Brochures	✓	✓	✓	✓		

Locations where the Vision, Mission, PEOs and PSOs are disseminated:

Sr. No.	Location	Institute		Department			
		Vision	Mission	Vision	Mission	PEO	PSO
1.	Department Office	✓	✓	✓	✓	✓	✓
2.	HOD Room	✓	✓	✓	✓	✓	✓
3.	Class Rooms	✓	✓	✓	✓	✓	✓

Criterion 1

4.	Laboratories	✓	✓	✓	✓	✓	✓
5.	Department Notice Board	✓	✓	✓	✓		
6.	Seminar/ Conference Hall	✓	✓	✓	✓	✓	✓
7.	Corridor	✓	✓	✓	✓	✓	✓

Apart from this Vision, Mission, PEOs and PSOs are disseminated to all the stakeholders of the programs through faculty meetings, student awareness workshops, student induction programs and placement and training activities at regular intervals.

List of stake holders of the program

1. Students.
2. Alumni.
3. Parents of the Students
4. Faculty and Staff Members.
5. Industries and Research Organisations.

1.4 STATE THE PROCESS FOR DEFINING THE VISION AND MISSION OF THE DEPARTMENT, AND PEOs OF THE PROGRAM (15)

Process for defining Vision and Mission of Department

The Vision and Mission of the department were established through a consultative process involving the various stakeholders. The societal requirements, the Vision and Mission of the institute were also borne in mind for defining the Vision and Mission of the department (Fig. 1.1). The steps followed were as under:

Step 1:	<i>A departmental committee under the chairmanship of Head of the Department was set up. The Vision and Mission statements of the Department were then proposed by the committee keeping in mind the Vision and Mission statement of Institute.</i>
Step 2:	<i>Proposed Vision and Mission statements were circulated among the stake holders.</i>
Step 3:	<i>As per the feedback received from the various stakeholders, the Vision and Mission statements were updated.</i>
Step 4:	<i>The updated Vision and Mission of the Department were sent to the Departmental Faculty Board (DFB) for subsequent approval.</i>
Step 5:	<i>Under the chairmanship of Head of the department, the Vision and Mission statements were approved by the DFB.</i>

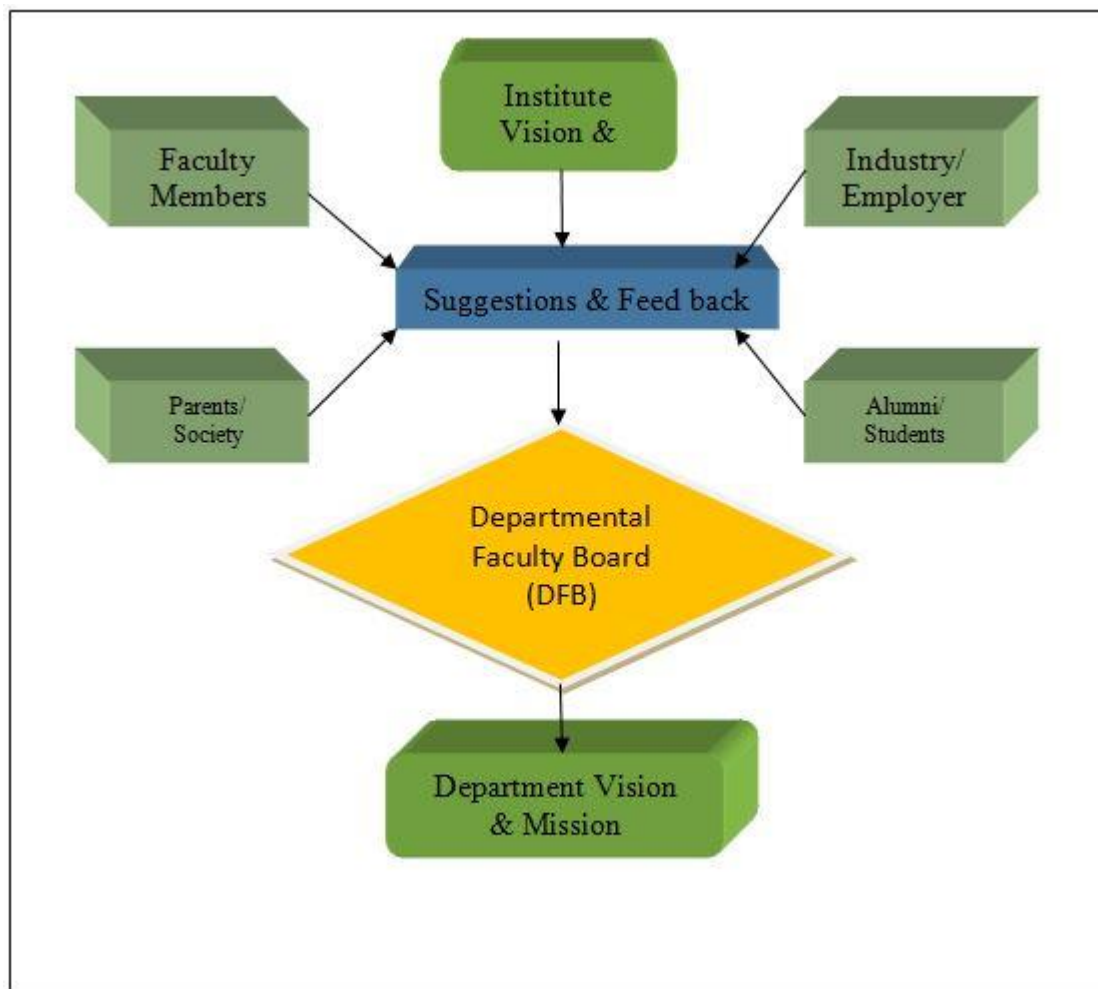


Figure 1.1: Process of Establishing Vision and Mission of the Department

Process for establishing PEOs

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:

Step 1:	<i>Keeping in view the Departmental Vision and Mission, Institute Vision and Mission and Program Outcomes, The Program Educational Objectives (PEOs) of the department were deliberated upon by the committee setup by the Head of the Department.</i>
Step 2:	<i>Proposed Program Educational Objectives (PEOs) were circulated among the various stakeholders.</i>
Step 3:	<i>As per the feedback received from the various stakeholders including the students, the Program Educational Objectives (PEOs) were updated.</i>
Step 4:	<i>The updated Program Educational Objectives (PEOs) were sent to the Departmental Faculty Board (DFB) for subsequent approval.</i>
Step 5:	<i>Under the chairmanship of Head of the Department, the Departmental Faculty Board (DFB) approved the PEOs.</i>

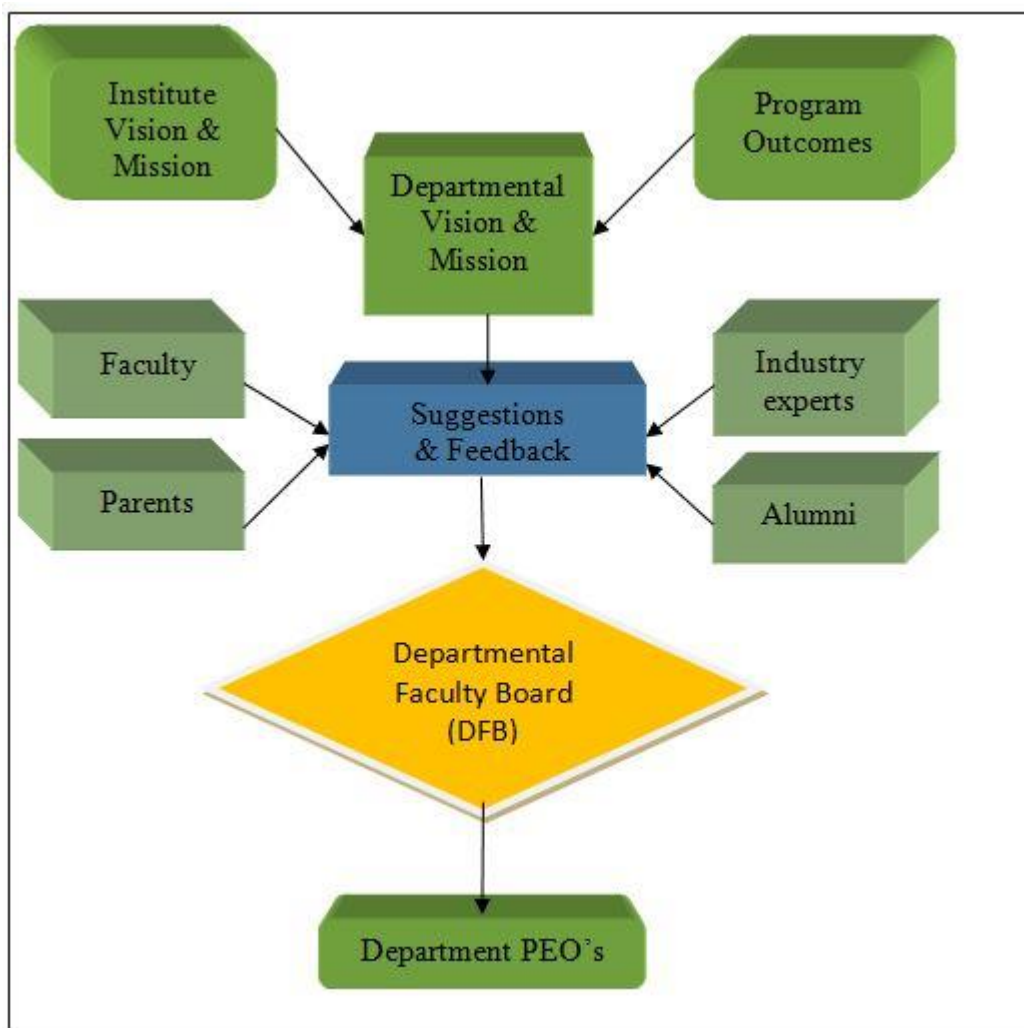


Figure 1.2: Process for defining the PEOs of the Department

ESTABLISH CONSISTENCY OF POs WITH PEOs OF THE DEPARTMENT MAPPING

Program Outcomes (PO)	Program Educational Objective (PEO)					
	Professional Competence (PEO1)	Preparing graduates for Industry (PEO2)	Leadership, Moral and Ethical Qualities (PEO3)	Problem visualization, surveying & analysis (PEO4)	Training for development of laboratory, communication and software skills (PEO5)	Innovative research for higher education (PEO6)
Engineering Knowledge (PO1)	3	2		2	3	2
Problem Analysis (PO2)	3	3		3	2	3
Design/Development of solutions	2	3		3	2	3

Criterion 1

(PO3)						
Conduct investigations Of complex problems (PO4)	3	3		3	3	3
Modern tool usage (PO5)	2	2		2	3	3
The Engineer and Society (PO6)		3	2	2		2
Environment and Sustainability (PO7)	3	2	2	2		2
Ethics and professionalism (PO8)	3	2	3			
Teamwork and Leadership (PO9)		3	3			
Communication Skills (PO10)		2	2			
Project Management and Finance (PO11)	2	3				2
Life Long Learning (PO12)	3	3		2	2	2
PSO1	3	2	3	2	3	3
PSO2	2	3	2	2	2	
PSO3	3	2		2	3	2

- 1: Slightly related
 2: Moderately related
 3: Substantially related

JUSTIFICATION:

PEO1: To gain professional competency, it's important to have engineering knowledge (PO1), problem solving skills (PO2), along with a systematic approach to investigate civil 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 civil engineering. Professional competency also includes the ability to demonstrate professional engineering approach utilizing technical resources (PSO1) and ability to conduct field 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.

Criterion 1

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 civil 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).

PEO4: Problem visualization requires identifying complex engineering problems (PO2) obtaining their solution (PO3), and inferring reasonable conclusions (PO4). Problem visualization also requires basic knowledge of science and technology (PO1), usage of engineering tools and soft wears (PO5), identification of consequent responsibilities relevant to the engineering practices (PO6), sustainable development with respect to the society and the environment (PO7) and constant up graduation of knowledge regarding recent developments in the field (PO12). A professional engineering approach (PSO1) and ability to design systems (PSO2) also impart the training in problem visualization surveying and analysis.

PEO5: the development of laboratory and communication skills requires the basic knowledge of engineering fundamentals (PO1), analysis and interpretation of data to investigate/design any experiments (PO4) and efficient and appropriate use of soft wears (PO5), (PSO1). The identification of engineering problems (PO2) and their solution (PO3), (PSO2) require laboratory and design skills along with constantly updating the knowledge through self-education, participation in professional societies and lifelong learning (PO12).

PEO6: To inculcate in the students the ability to take up innovative research projects, it is important to identify or formulate a complex engineering problem (PO2), obtain their solution keeping in view the appropriate considerations for public health and safety, society, environment etc. (PO3) and apply a systematic approach to infer reasonable conclusions (PO4), or develop appropriate soft wears and tools for modeling of complex engineering problems (PO5), (PSO1). The knowledge of civil engineering fundamentals (PO1), is as important as the professional knowledge in order to examine societal, legal, health, environmental issues (PO6), to ensure the sustainable development in context to society and the environment (PO7). An efficient management of time and resources (PO11) and a constant inclination to lifelong learning (PO12), along with the ability to conduct field and

Criterion 1

laboratory investigations to utilize modern tools and techniques (PSO3), help the students to take up innovative research projects.

1.5 ESTABLISH CONSISTENCY OF PEOs WITH MISSION OF THE DEPARTMENT (10)

MAPPING

Program Educational Objective	Mission			
	Academic Growth	Consultancy Services	Moral & Ethical values	Flourish as a centre of excellence
	M1	M2	M3	M4
1. Professional Competence (PEO1)	3	3	2	3
2. Preparing graduates for Industry (PEO2)	3	3	2	3
3. Leadership, Moral and Ethical Qualities (PEO3)	1	2	3	2
4. Problem visualization, surveying & analysis (PEO4)	3	3	1	2
5. Training for development of laboratory, communication and software skills (PEO5)	3	3	2	3
6. Innovative research for higher education (PEO6)	3	3	2	3

1: Slightly related

2: Moderately related

3: Substantially related

JUSTIFICATION:

J1:

1. PEO1 – M1: 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.
2. PEO1 – M2: New facilities are introduced in connection with extension program of research and development cell.
3. PEO1 – M3: The commitment to professional ethics and responsibilities in applying their knowledge in the best interest of society.
4. PEO1 – M4: For professional competence of civil engineers, development of centre of excellence is a must.

J2:

1. PEO2 – M1: Providing industrial training and other inputs to the teaching-learning processes so as to develop awareness about the job functions in the industry among students.
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.
3. PEO2 – M3: Seminars and workshops on professional practices/duties conducted for the students trained them about their duties and responsibilities.
4. PEO2 – M4: For graduates to be prepared for industry, provision of state of the art facilities through establishment of centre of excellence is necessary.

J3:

1. PEO3 – M1: There is not enough correlation between academic growth and personality development courses in the curriculum, which is to be taken care of.
2. PEO3 – M2: Students with ethical values better cater to consultancy work.
3. PEO3 – M3: Apply ethical principles and commit to professional ethics, responsibilities and norms of the engineering practice.
4. PEO3 – M4:

J4:

1. PEO4 – M1: The quality education imparted through academically proficient teachers trained in institutes of repute would prepare graduates to evolve into professionally and ethically sound engineers to meet the current technical challenges.
2. PEO4 – M2: The knowledge, practical skills and research aptitude sharpen at the institution would enable the graduates to have an urge for lifelong learning.
3. PEO4 – M3: Ethics of work practice to be stressed in surveying and related practices.
4. PEO4 – M4: The two are invariably correlated.

J5:

1. PEO5-M1: Curriculum design incorporating student seminar, assignments and tutorials would enable the students to develop individual capabilities and communication skills. Graduates will be able to comprehend and write effective reports and make presentations on complex engineering problems.
2. PEO5-M2: Exposing students to emerging trends and innovations in sustainable engineering practices, through some of the relevant software packages applicable in various domains of civil engineering would enable graduates to execute and control civil engineering projects.
3. PEO5-M3: Quality training on the use of relevant software packages for planning, designing, execution and quality control of civil engineering projects would nurture graduates into ethically strong and responsible engineers capable of addressing global challenges in the arena of civil engineering.
4. PEO5-M4: To impart training for development of laboratory and software skills, flourishing of the department as a center of excellence is very important.

J6:

1. PEO6-M1: To involve students in the discussions and deliberations on the specific contemporary technical challenges and issues, thereby inducing in them the practice of many research based solutions to the problems and urge for the higher education.
2. PEO6-M2: Student participation for consultancy activities and real-time projects is encouraged.
3. PEO6-M3: Instructions were given to the students regarding the professional ethics to be followed in engineering practice.
4. PEO6-M4: Innovative research follows development of a center of excellence.