

SELF ASSESSMENT REPORT (SAR)

For

ACCREDITATION

of

BACHELOR OF TECHNOLOGY (B.TECH.) PROGRAM

in

CHEMICAL ENGINEERING

By

National Board of Accreditation

NBCC Place, 4th Floor East Tower, Bisham Pitamah

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**DEPARTMENT OF CHEMICAL ENGINEERING
NATIONAL INSTITUTE OF TECHNOLOGY SRINAGAR
Hazratbal, Srinagar – 190006
Jammu & Kashmir (India)
October -2018**

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PART A: Institutional Information

1. Name and Address of the Institution: National Institute of Technology Srinagar

Address	City: Srinagar
State: Jammu & Kashmir	Pin Code: 190006
Website: www.nitsri.ac.in	E-mail: admin_csc@nitsri.ac.in
STD Code: 0194	Phone No. : 2422032
Fax STD Code: 0194	Fax: 242047

Table:A.1

2. Name and Address of the Affiliating University: None
3. Year of establishment of the Institution: 1960
4. Type of the Institution: Institute of National Importance
5. Ownership Status: Central Government (Provide Details: Appendix 1 of part A)
6. Other Academic Institutions of the Trust/Society/Company etc., if any

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

Table:A.6

7. Details of all the Programs being offered by the Institution under consideration

S. No.	Programme Name	Name of the Department	Year of Start	Intake if any	Increase/decrease in intake,	Year of increase/decrease	AICTE Approval	Accreditation Status
i.	B.Tech. Chemical Engineering	Chemical Engineering	1963	27	77	2009	Senate	Accredited by NBA F. No. NBA/ ACCR/106/2002 May 19 2009
ii.	M.Tech. Chemical Engineering		2015	18				
iii.	Ph.D. Chemical Engineering		2008	05	13	2015		
iv.	B.Tech. Civil Engineering	Civil Engineering	1960	50	123	2009	Senate	Accredited by NBA F. No. NBA/ ACCR/106/2002 May 19 2009
v.	M.Tech. Transportation		2014	18				
vi.	M.Tech. Structure		2004	25				
vii.	M.Tech. Geotechnical		2014	17				
viii.	M.Tech. Water Resource Engineering		1986	15				
ix.	Ph.D. Civil Engineering		2006	02	11	2015		

x.	B.Tech. Computer Science & Engineering	Computer Science &Engineering	2007	62				
xi.	Ph.D. Computer Science & Engineering		2010	01	04	2015		
xii.	B.Tech. Electrical Engineering	Electrical Engineering	1960	50	77	2009		Accredited by NBA F. No. NBA/ ACCR/106/2002 May 19 2009
xiii.	M.Tech. Electrical Power and Energy System		2013	26				
xiv.	Ph.D. Electrical Engineering		2004	01	18	2015		
xv.	B.Tech. Electronics and Communication Engineering	Electronics and Communication Engineering	1984	50	77	2009		Accredited by NBA F. No. NBA/ ACCR/106/2002 May 19 2009
xvi.	M.Tech. Communication and Information Technology		2004	25				
xvii.	M. Tech. Microelectronics		2015	13				
xviii.	Ph.D. Electronics and Communication Engineering		2005	01	14	2015		
xix.	B.Tech. Mechanical Engineering	Mechanical Engineering	1960	50	77	2009		Accredited by NBA F. No. NBA/ ACCR/106/2002 May 19 2009
xx.	M.Tech. Mechanical System Design		2004	25				
xxi.	M.Tech. Industrial Tribology & maintenance		2013	26				
xxii.	Ph.D. Mechanical Engineering		2008	10	28	2015		
xxiii.	B. Tech. Metallurgical and Materials Engineering	Metallurgical and Materials Engineering	1960	15	77	2009		Accredited by NBA F. No. NBA/ ACCR/106/2002 May 19 2009
xxiv.	Ph.D. Metallurgical and Materials Engineering		2008	05	09	2015		

xxv.	B. Tech. Information Technology	Information Technology	2007	62			
xxvi.	Ph.D. Information Technology		2018	06			
xxvii.	M.Sc. Physics	Physics	2015	25			
xxviii.	Ph.D. Physics		2004	02	14	2015	
xxix.	Ph.D. Chemistry	Chemistry	2005	01	11	2015	
xxx.	Ph.D. Humanities	Humanities	2004	02	04	2015	
xxxi.	Ph.D. Math's	Math's	2006	02	8	2015	

Table:A.7

8. Programs to be considered for Accreditation vide this Application

S. No.	Program Name
i.	Chemical Engineering
ii.	Civil Engineering
iii.	Electrical Engineering
iv.	Electronics and Communication Engineering,
v.	Mechanical Engineering

Table:A.8

9. Total Number of Employees

A. Regular Employees (Faculty and Staff)

Items		2017-18		2016-17		2015-16	
		Min	Max	Min	Max	Min	Max
Faculty in Engineering	M	54	54	54	54	54	54
	F	16	16	16	16	16	16
Faculty in Math's, Science & Humanities Teaching in Engineering Programs	M	11	11	11	11	11	11
	F	5	5	5	5	5	5
Non-teaching staff	M	227	227	227	222	227	227
	F	26	26	26	26	26	26

Table:A.9a

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

Items		2017-18		2016-17		2015-16	
		Min	Max	Min	Max	Min	Max
Faculty in Engineering	M	40	40	40	44	40	37
	F	22	22	22	18	22	19
Faculty in Math's Science & Humanities teaching in engineering Programs	M	9	9	9	10	9	3
	F	3	3	3	1	3	3
Non-teaching staff	M	54	54	54	52	54	56
	F	11	11	11	9	11	7

Table: A.9b

10. Total Number of Engineering Students

Item	2017-18	2016-17	2015-16
Total No. of boys	2383	2185	2280
Total No. of girls	282	292	347
Total No. of students	2665	2477	2623

Table:A.10**11. Vision of the Institution**

To establish a unique identity of a pioneer technical Institute for NIT Srinagar 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 global challenges.

12. Mission of the Institution

(1) The broad mission of NIT Srinagar is to create a strong and transformative technical educational environment in which fresh ideas, moral principles, research and excellence nurture with international standards.

(2) Technically educated and broadly talented engineers, future innovators and entrepreneurs, graduate with understanding the needs and the problems of the industry, the society, the state, and the nation.

(3) We promise to inculcate the highest degree of confidence, professionalism, academic excellence and engineering ethics in budding engineers.

13. Contact Information of the Head of the Institution and NBA Coordinator, if designated**Head of the Institution**

Name: Dr Rakesh Sehgal

Designation: Director

Status of Appointment: By MHRD

Contact Details of Head of the Institution

STD Code: 0194

Telephone No: 0782677

Mobile: 09419433770, 9418058442

E-mail: director@nitsri.net

Fax STD Code: 0194

Fax No: 242047

NBA Coordinator

Name: Dr. G. A. Harmain

Designation: Professor

STD Code: 0194


Telephone No: 0782677

Mobile: 9419018804

E-mail: gharmain@nitsri.net

Appendix 1 of part A

केवल कुमार शर्मा, भा.प्र.से.
K. K. Sharma, I.A.S.
सचिव
Secretary


सत्यमेव जयते

भारत सरकार
मानव संसाधन विकास मंत्रालय
उच्चतर शिक्षा विभाग
Government of India
Ministry of Human Resource Development
Department of Higher Education
D.O. No. 16-5/2017-TS.III
5th June, 2017

Dear

As you are aware, the National Institutes of Technology (NITs) are Centrally Funded Technical Institutes (CFTIs) of National Importance set up by an act of Parliament, National Institute of Technology, Science Education and Research (NITSER) Act, 2007. Therefore, NITs do not require any approval of All India Council for Technical Education (AICTE) and also National Board of Accreditation (NBA) accreditation is not mandatory for such Institutions.

2. NIT, Srinagar has informed the Ministry of HRD that students who are studying in above NIT and belong to state of Rajasthan have been denied registration for scholarship on the portal of Department of Social Justice and Empowerment, Rajasthan. It has been mentioned that Department of Social Justice and Empowerment has been insisting that NIT, Srinagar should get accreditation beyond 2016-17.

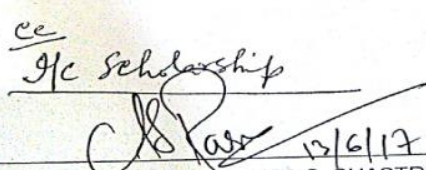
3. As mentioned above, the NIT Srinagar is an Institution of National Importance. Therefore, accreditation from NBA/NAAC/AICTE is not mandatory for it.

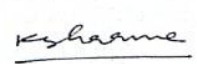
4. In view of the above, it is requested to kindly look into the matter and direct concerned official(s) to allow registration of students of your state for enabling them to get scholarship.

Yours sincerely,
-sd-
(K. K. Sharma)

Shri Om Prakash Meena,
Chief Secretary,
Govt. of Rajasthan,
Government Secretariat,
Jaipur – 302 005

Copy to:
✓ Prof. A. R. Dar, Director, National Institute of Technology Srinagar, Hazratbal,
Kashmir – 190006 (J&K)

cc
He Scholarship

13/6/17


(K. K. Sharma)
03/06/17
PA

128-C, SHASTRI BHAVAN, NEW DELHI - 110 015
TFI - 23386451, 23382698, FAX : 23385807, E-mail : secy.dhe@nic.in

Figure-A.1a

F.No.13-12/2003-TS.III
Government of India
Ministry of Human Resource Development
Department of Secondary & Higher Education

New Delhi, the August 11, 2003

To
The Director,
National Institute of Technology,
(Formerly known as Regional Engineering College)
Srinagar – 190 006 (J & K).

Subject: Conversion of Regional Engineering College, Srinagar into
National Institute of Technology, Srinagar with deemed
University status- regarding.

Sir,

I am directed to forward herewith a copy of Notification No.F.9-17/2003-U.3
dated 07.08.2003 relating to conversion of Regional Engineering College,
Srinagar into National Institute of Technology, Srinagar with Deemed University
status for your record and further necessary action.

Yours faithfully,

[Signature]
(B.K.Ray)
Desk Officer
Tel: 23070177
FAX: 23074094

Encl: As above.

Copy to: The Director of all National Institutes of Technology.

[Signature]
(B.K.Ray)
Desk Officer

R/1 For a/c M.
AC
25/8/2003
23/9/03
Do/2007
25/8
BOD
K. S.

Figure-A.1b

PART B: Criteria Summary**Name of the program: B.Tech. in Chemical Engineering**

Criteria No.	Criteria	Marks/Weightage	
		Max. Marks	Marks Claimed
	Program Level Criteria		
1	Vision, Mission and Program Educational Objectives	50	50
2	Program Curriculum and Teaching–Learning Processes	100	98
3	Course Outcomes and Program Outcomes	175	175
4	Students' Performance	100	88
5	Faculty Information and Contributions	200	149.12
6	Facilities and Technical Support	80	70
7	Continuous Improvement	75	62
	Institute Level Criteria		
8	First Year Academics	50	50
9	Student Support Systems	50	50
10	Governance, Institutional Support and Financial Resources	120	120
	Total	1000	912.12

PART B: Program Level Criteria

CRITERION 1	Vision, Mission and Program Educational Objectives	50
Marks Claimed		50

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

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

(Here Institute Vision and Mission statements have been asked to ensure consistency with the department Vision and Mission statements; the assessment of the Institute Vision and Mission will be taken up in Criterion 10)

About NIT Srinagar

National Institute of Technology Srinagar is one of the premier educational institutes in the Northern Region of the Country. It was established in 1960 and has been one of the eighteen Regional Engineering Colleges (RECs) sponsored by the Govt. of India during the 2nd Plan. The Institute acquired the status of National Institute of Technology (NIT) with 'Deemed to be University' during August 2003 and attained full autonomy in its academics.

The Institute is situated at the bank of the world-famous Dal Lake, with the far-famed Hazratbal Shrine on the other side of the Campus. NIT Srinagar is a residential Institute with accommodation facility in Hostels and Staff-Quarters. There are seven Boys' and two Girls' hostels which accommodate about 1500 boys and 200 girls. Besides running the B.Tech. programmes, the Institute also offers M.Tech. in many disciplines. A large number of students are also registered for M.Phil. and Ph.D. programmes.

Facilities and amenities such as Bank, Consumer cum Society, Shopping Complex, Recreational Centre, Dispensary with Ambulance, Guest House, Students Activity Centre, Gymnasium, Internet Centre, Telephone Booths, Fax Services, Diesel Generator, Bus Facility and a beautiful Play Ground are available at the Institution. There is an Industry-Institute-Interaction Cell (IIIC) which was established in 1989 with the objective to remain at the forefront of the scientific and technological development and to share its experience with industries. Man-power and other resources are available at the Institute effectively with the assistance of the participating industries. It has one of the best technical library in J&K State. There is a collection of over 60,000 books on engineering, science and humanities. There are about 6,000 bound volumes/journals, both foreign and Indian. The library remains open from 9.00 a.m to 10.p.m. It has on line 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. There is also a collection of ISI codes, in the CD-Rom format.

Vision of NIT Srinagar

To establish a unique identity of a pioneer technical Institute for NIT Srinagar 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 of the global challenges.

Mission of NIT Srinagar

- (1) The broad mission of NIT Srinagar is to create a strong and transformative technical educational environment in which fresh ideas, moral principles, and research and excellence nurture with international standards.
- (2) Technically educated and broadly talented engineers, future innovators and entrepreneurs, graduate with understanding the needs and the problems of the industry, the society, the State, and the Nation.
- (3) We promise to inculcate the highest degree of confidence, professionalism, academic excellence and engineering ethics in budding engineers.

Quality Policy

NIT Srinagar shall strive to impart knowledge, hone skills and nurture creativity for all stakeholders.

About the Chemical Engineering Department

The Department of Chemical Engineering was established in 1963 for five years undergraduate (B.E.) programme with a total intake of 25. The duration was changed to four years in 1981. Currently, the Department offers 4 years B. Tech. and 2 years M.Tech. degree programmes in Chemical Engineering with a total intake of 77 and 18, respectively. Students are also registered for Ph.D. program. The curriculum has been designed in such a manner that a wide range of courses i.e. fundamental sciences, complex mathematical sciences, social sciences and engineering aspects of physical, chemical and biochemical sciences have been incorporated in the syllabus. The students are rigorously trained and evaluated on a continuous basis in order to compete as leaders in whichever fields they choose to pursue. The Departmental laboratories are well equipped in order to compliment the theoretical course work.

Vision of the Department

To be one of the leading chemical engineering departments in the Country, providing teaching, research and training to the students along with high moral values to solve the problems of chemical and allied industries and to meet the aspirations of the society.

Mission of the Department

- i. To create and sustain strong foundation of chemical engineering education, research and innovation.
- ii. To produce well qualified, innovative chemical engineers with entrepreneurial skills & leadership qualities to face and solve the problems of the industries, and the society at large.
- iii. To make professional leaders, academicians and engineers with highest moral values and ethics.

1.2. State the Program Educational Objectives (PEOs) (5)*(State the PEOs (3 to 5) of program seeking accreditation)***PEO's of the Department**

PEO1: Providing broad-based engineering education on the solid foundation of basic sciences, engineering sciences, humanities & social sciences and management through choice based credit systems.

PEO2: Enable the students to become future leaders in engineering practices for the overall betterment of society, and instill in them a work culture based on foundations of ethics, scientific temperament, and team work.

PEO3: Equip the students with knowledge, understanding and applications of chemical engineering tools that enables them to pursue innovative research.

PEO4: Attain excellence in engineering and design through education in the principles and practices of chemical engineering.

1.3. Indicate where the Vision, Mission and PEOs are published and disseminated among stakeholders (15)

(Describe where (websites, curricula, posters etc.) the Vision, Mission and PEOs are published and detail the process which ensures awareness among internal and external stakeholders with effective process implementation)

(Internal stakeholders may include Management, Governing Board Members, faculty, support staff, students etc. and external stakeholders may include employers, industry, alumni, funding agencies, etc.)

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

Sl. No.	LOCATION	INSTITUTE		DEPARTMENT			
		Vision	Mission	Vision	Mission	PEO	PSO
i.	Course Files	•	•	•	•	•	•
ii.	Lab Manual	•	•	•	•	•	•
iii.	Faculty Diary	•	•				
iv.	Course Diary/Attendance Register	•	•	•	•	•	•
v.	Admission Brochures	•	•				
vi.	Student Observation Record	•	•	•	•	•	•

Table- B.1.3 a

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

Sl. No	Location	INSTITUTE		DEPARTMENT			
		Vision	Mission	Vision	Mission	PEOs	PSOs
i.	Institute Website	•	•	•	•	•	•
ii.	Head of Department Room	•	•	•	•	•	•
iii.	Departmental Website			•	•	•	•
iv.	Information Brochure	•	•	•	•	•	•
v.	Faculty Diary	•	•	•	•	•	•
vi.	Course Diary/Attendance Register	•	•	•	•		
vii.	Admission Brochures	•	•	•	•		
viii.	Institute Magazine	•	•	•	•		
ix.	Notice Board	•	•	•	•		
x.	Departmental Seminar Room			•	•		
xi.	Conference /Workshop Brochure	•	•	•	•	•	•
xii.	Faculty Room	•	•	•	•	•	•
xiii.	Laboratories			•	•	•	•
xiv.	Departmental Library			•	•	•	•
xv.	Visitors' Register			•	•	•	•

Table- B.1.3 b

Vision and Mission are also disseminated to all the stakeholders of the programmes through faculty meetings, student awareness workshops, student induction programmes and organization of conferences, workshops, seminars, etc.

INTERNAL STAKEHOLDERS	
Description	Purpose
Board of Governors & Advisory Board	i. The college was established with the objective of providing higher technical education to the people of the diocese and the surrounding regions.
Faculty	i. Involve a vital role in working of the program. ii. Faculty consists of members of the department - teaching and non teaching staff - who are responsible for meeting the program. Outcomes and objectives during the teaching and learning process.
Students	Most prominent role in the program: i. Students feedback is considered to introduce innovative teaching and learning methodologies ii. Students input will help in the program to introduce the elective courses to meet current trends. iii. It is expected that students become technically qualified, knowledgeable, and productive engineers upon graduation.
Parents	i. Expects their wards to be successful in their professional career.
EXTERNAL STAKEHOLDERS	
Description	Purpose
Employers	i. Represents the major end users of our graduates. ii. The employers range from public to private sectors and from small to large firms, research organizations and industrial companies.
Industry	i. Gives inputs, which overcome the gap between program and industry.
Alumni	i. Focus group, because they are a measure of the long-term success of our program. ii. Alumni feedback helps students to know the recent trends in industry. iii. Recollect their existence during their program study and advise the Department with necessary inputs in point of student career.

1.4. State the process for defining the Vision and Mission of the Department, and PEOs of the program (15)

The vision, mission and PEOs are established through continuous interaction with stake holders of the programme.

Stakeholders of the Programme

The department has identified the following stake holders for the undergraduate programme in Chemical Engineering:

Stakeholders	Description	Process
INTERNAL STAKEHOLDERS	1. Professional Bodies	<ul style="list-style-type: none"> The inputs of the members of various professional bodies provide a platform to disseminate the information regarding the recent trends in the field and are relevant to update and upgrade the programme.
	2. Faculty	<ul style="list-style-type: none"> Faculty has a vital role in the working / running of programme. Faculty is involved in various committees to check the consistency of the programme. Faculty provides valuable inputs for the design of the programme, establishments of PEOs and POs, course outcomes and assessment.
	3. Students	<ul style="list-style-type: none"> Students have a most important role in the programme as they are the end products. Students' feedback is/will be considered to introduce innovative teaching and learning methodologies. The inputs from students will help the programme to introduce the electives courses required to meet the current trend.
	4. Parents	<ul style="list-style-type: none"> Parents support their wards and have high expectation of them succeeding in their professional career and higher education.
EXTERNAL STAKEHOLDERS	1. Industry/ Employers	<ul style="list-style-type: none"> Represent the end user of our graduates. Provides valuable inputs to shape the curriculum and hence enhance the employability of the graduates.
	2. Alumni	<ul style="list-style-type: none"> Alumni constitute the focus group as they are the measure of success of the programme. Valuable feedback is obtained from the alumni regarding recent trends in engineering which helps in curriculum design.
	3. Academi	<ul style="list-style-type: none"> The faculty members from various sister universities, IITs, provide valuable feedback in design updated programme.

Table-B.1.4

A. Process for defining the Vision and Mission of the Department (7)

The Vision and Mission are established through a consultation process involving the stake holders such as: students, faculty, members of alumni / professional bodies, faculty members from sister universities and IITs. The flow chart in Figure B.1.4a below indicates the process for defining the vision and mission of the department.

Step 1:	Programme coordinator consults various stake holders and after collecting their views about the vision and mission of the department and submits the proposal to the programme evaluation committee.
Step 2:	The programme evaluation committee summarizes the collected views and formulates the accepted views based on which the vision and mission are to be established. The final recommendations of the BOS are submitted to the institute Senate.
Step 3:	The Senate after deliberations approves the recommendations of the BOS and hence the vision and mission of the department are established.

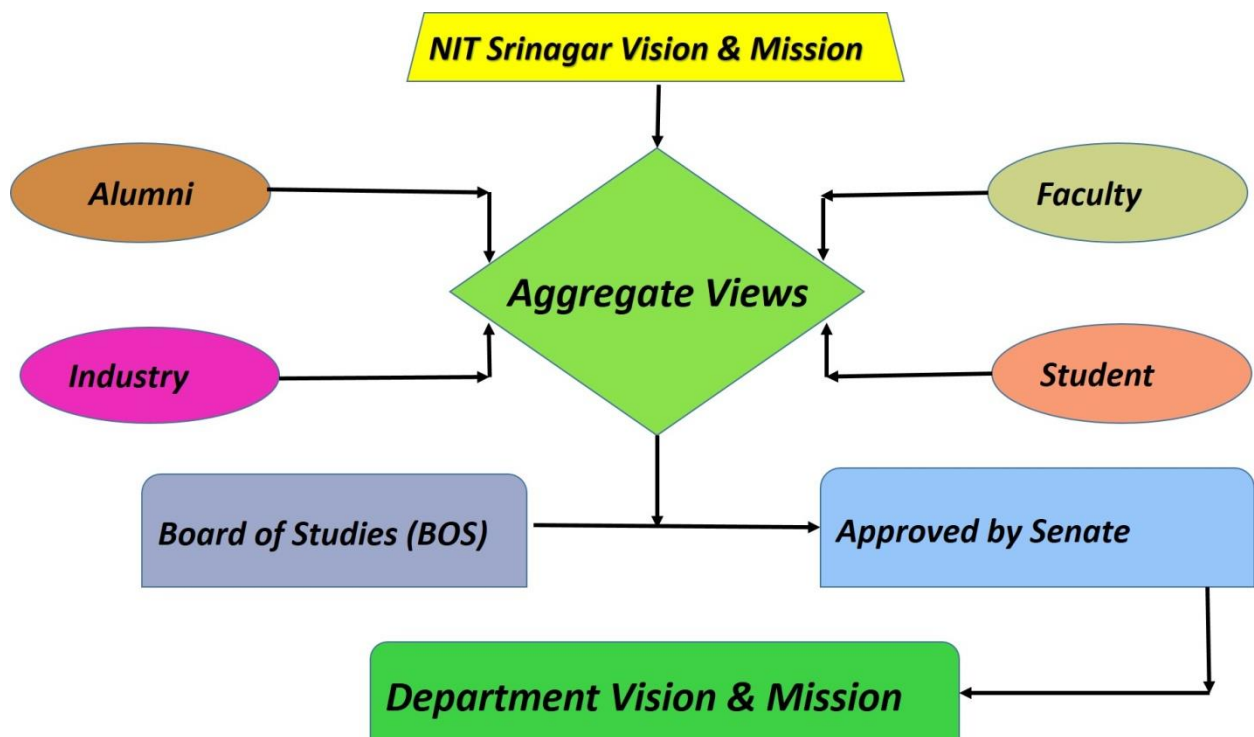


Figure-B.1.4a

A. Process for defining the PEOs of the Programme/ Department (8)

The programme educational objectives are established through a consultation process involving the stake holders such as: students, parents, faculty members, alumni / professional bodies, faculty members from sister universities and IITs. The PEOs are established through the process steps (Figure-B.1.4b):

Step 1:	The vision and mission of the department and the graduate attributes of NBA are kept in view and taken as basis to interact with the stake holders for framing PEOs.
Step 2:	Programme coordinator consults various stake holders and after collecting their views submits the proposal to the programme evaluation committee.
Step 3:	The programme evaluation committee summarizes the collected views and formulates the accepted views based on which PEOs are to be established.
Step 4:	The BOS after deliberations approves the recommendations of the PEOs and hence the PEOs are established.

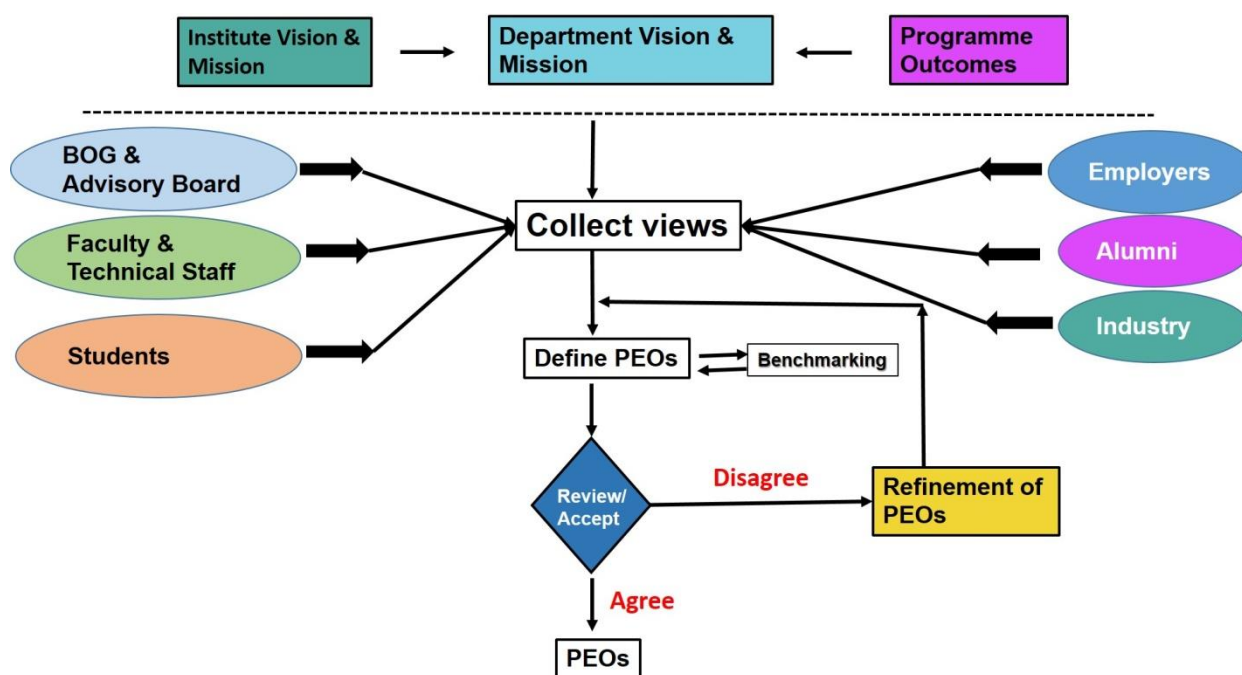


Figure-B.1.4b

1.5 Establish consistency of PEOs with Mission of the Department (10)

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

Mission Statements \longrightarrow		M1	M2	M3
PEOs Statements \downarrow		To create and sustain strong foundation of chemical engineering education, research and innovation.	To produce well qualified, innovative chemical engineers with entrepreneurial skills & leadership qualities to face and solve the problems of the industries, and the society at large	To make professional leaders, academicians and engineers with highest moral values and ethics.
PEO1	Providing broad-based engineering education on the solid foundation of basic sciences, engineering sciences, humanities & social sciences and management through choice based credit systems.	3	2	3
PEO2	Enable the students to become future leaders in engineering practices for the overall betterment of society, and instill in them a work culture based on foundations of ethics, scientific temperament, and team work.	2	2	3
PEO3	Equip the students with knowledge, understanding and applications of chemical engineering tools that enables them to pursue innovative research.	3	2	1
PEO4	Attain excellence in engineering and design through education in the principles and practices of chemical engineering.	3	2	2

Table-B.1.5

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

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High) . If there is no correlation, put “-”

Note: Wherever the word “process” is used in this document its meaning is process formulation, notification to all the concerned, and implementation.

CRITERION 2	Program Curriculum and Teaching- Learning Processes	100
Marks Claimed		98

2.1. Program Curriculum (30)

2.1.1. State the Process for Designing the Program Curriculum (10)

Claimed 10

The program curriculum is designed based on the broad guidelines of the Institute keeping in view the other NITs, MHRD directives and program specific criteria to meet the requirements of POs and PEOs of the Department. Industry persons, alumni and students are consulted at the time of designing the curriculum. The faculty members design the course content to meet out the requirement of COs. The individual courses are discussed specifically for their outcomes in faculty board meetings and Department Undergraduate Committee (DUGC) meetings. The DUGC discusses the content of the curriculum threadbare. The committee points out the deficiencies of the curriculum keeping in view the various inputs and returns the same to the faculty for review. Once the DUGC is satisfied with the contents of the curriculum, it is submitted to the Program Assessment Committee (PAC). The PAC evaluates the curriculum in terms of POs, PEOs, and various inputs. The PAC submits the same to Departmental Assessment Board (DAB), chaired by the HOD. Again the curriculum is subjected to evaluation so that the contents fulfill all the statutory requirements, else it is again returned for review. Finally the program curriculum is submitted to the institute senate, which is the highest academic body of the institute. The senate of the NIT Srinagar is chaired by the director, NIT Srinagar. The senate comprises of members drawn from the various departments of the institute. In addition to the institute members it has members from outside the institute. At least one member is alumni and others from other institutes of repute. The presence of outsiders alumni ensures that the curriculum is designed keeping in view the inputs of alumni and faculty from other institute. The process for designing the program curriculum is illustrated in Figure 2.1.

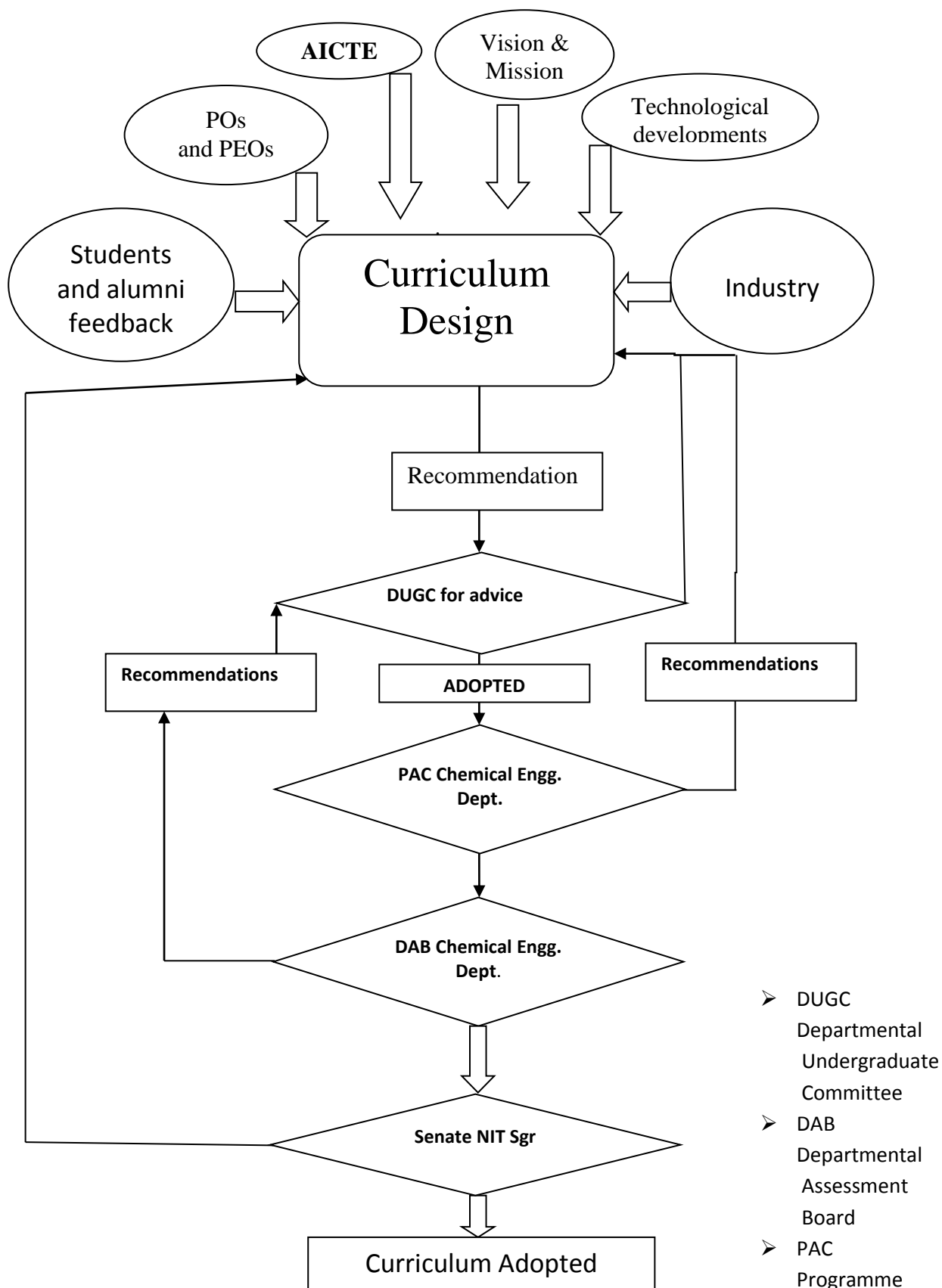


Figure-B. 2.1: Process of designing the programme curriculum.

2.1.2. Describe the Structure of the Curriculum (5)

Marks Claimed 5

The syllabi format may include:

- Department, course code, and title of course.
- Designation as a required or elective course.
- Contact hours and type of course (lecture, tutorial, seminar, project etc.).
- Text books, and/or reference material.

2010 Batch onwards

Course code	Course Title	(L)	(T)	(P)	Total Hours	Credits
1st Semester						
PHY-101	Physics	3	0	0	3	3
PHY-102 P	Physics (lab)	0	0	2	2	1
CHM-101	Chemistry	3	0	0	3	4
CHM-102 P	Chemistry (lab)	0	0	2	2	1
MTH-101	Mathematics	3	1	0	4	4
HSS-101	Humanities	4	0	0	4	4
CIV-102	Engineering Drawing	3	1	0	4	4
IT-101	Computer Science	3	0	0	3	3
IT-102 P	Computer Science (lab)	0	0	2	2	1
WSP-1 P	Workshop Practice	0	0	4	4	2
Total		19	2	10	31	25
2nd Semester						
PHY-201	Physics- II	3	0	0	3	3
PHY-201 P	Physics-II (lab)	0	0	2	2	1
CHM-201	Chemistry-II	3	1	0	4	4
CHM-201 P	Chemistry-II (lab)	0	0	2	2	1
MTH-201	Mathematics-II	3	1	0	4	4
HSS-201	Humanities-II	4	0	0	4	4
MED-201	Machine Drawing	3	0	0	3	3
CSE-201	C Programming	3	0	0	3	3
CSE-201 P	C Programming (Lab)	0	0	2	2	1
CIV-201	Engineering Mechanics	3	1	0	4	4
WSP-02 P	Workshop Practice	0	0	4	4	2
Total		19	3	10	32	25

3 rd Semester						
CHE-301	Introduction of Chemical Eng.	3	1	0	4	4
CHE-302	Mechanical Operations	3	1	0	4	4
MTH-301	Complex Variables & Spl. Functions	3	1	0	4	3
CHM-301	Mechanistic Organic Chemistry	3	1	0	4	3
CHM-302P	Mechanistic Organic Chemistry Lab.	0	0	2	2	1
MTH-302	Eng. Mechanics	3	1	0	4	3
MTH-303P	Eng. Mechanics Lab.	0	0	2	2	1
ELE-305	Electrical Eng. Technology	3	1	0	4	3
ELE-306P	Basic Electrical Engineering Lab.	0	0	2	2	1
MEC-311	Workshop Practice	0	0	2	2	2
Total		18	6	8	32	25
4 th Semester						
CHE-401	Momentum Transfer	3	1	0	4	4
CHE-402P	Momentum Transfer Lab.	0	0	2	2	1
CHE-403	Mass and Energy Balance	3	1	0	4	4
CHE-404	Heat Transfer Operations	3	1	0	4	4
CHE405P	Mechanical Operations Lab.	0	0	3	3	2
HSS-402	Industrial Organization & Management	3	1	0	4	3
MTH-401	Statistics & Probability	3	1	0	4	3
ECE-405	Electronics	3	1	0	4	3
ECE-406P	Electronics Lab.	0	0	2	2	1
Total		18	6	7	29	25
5 th Semester						
CHE-501	Mass Transfer-I	3	1	0	4	4
CHE-502P	Heat Transfer Operations Lab.	0	0	3	3	2
CHE-503	Process Equipment Design	3	1	0	4	3
CHE-504	Chemical Engineering Thermodynamics-I	3	1	0	4	4
CHE-505	Chemical Reaction Engineering-I	3	1	0	4	4
CHE-506	Material Science & Technology	3	1	0	4	3
CHE-507	Energy Engineering	3	1	0	4	3
CHE-508P	Energy Engineering Laboratory	0	0	3	3	2
Total		18	6	6	30	25

6 th Semester						
CHE-601	Chemical Technology-I	3	1	0	4	4
CHE-602	Chemical Reaction Eng.-II	3	1	0	4	4
CHE-603	Industrial Training & Presentation	0	2	0	2	2
CHE-604	Mass Transfer-II	3	1	0	4	4
CHE-605	Chemical Eng. Thermodynamics-II	3	1	0	4	4
CHE-606	Process Instrumentation	3	1	0	4	3
CHE-607	Transport Phenomena	3	1	0	4	4
Total		18	8	0	26	25
7 th Semester						
CHE-701	Pre-Project work	0	0	4	4	2
CHE-702P	Chemical Reaction Eng. Lab.	0	0	3	3	2
CHE-703	Chemical Technology-II	3	1	0	4	4
CHE-704P	Mass Transfer Lab.	0	0	3	3	2
CHE-705	Process Dynamics & Control	3	1	0	4	4
CHE-706	Industrial Economics & Management	3	1	0	4	3
CHE-707	Plant Design	3	1	0	4	4
E-1	Elective-I	3	1	0	4	4
Total		15	5	10	30	25
8 th Semester						
CHE-801	Project	0	0	9	9	6
CHE-802	Seminar	0	2	0	2	2
CHE-803	Biochemical Engineering.	3	1	0	4	4
CHE-804P	Biochemical Engineering Lab.	0	0	3	3	2
CHE-805P	Process Dynamics & Control Lab.	0	0	3	3	2
E-2	Elective-II	3	1	0	4	3
E-3	Elective-III	3	1	0	4	3
E-4	Elective-IV	3	1	0	4	3
Total		12	6	15	33	25
GROSS TOTAL		137	42	66	245	200

Table: B.2.1.2a

2014 Batch onwards

1 st Semester						
Course Code	Course Title	(L)	(T)	(P)	Total Hours	Credits
PHY-101	Physics	3	0	0	3	3
PHY-102 P	Physics (lab)	0	0	2	2	1
CHM-101	Chemistry	3	0	0	3	3
CHM-102 P	Chemistry (lab)	0	0	2	2	1
MTH-101	Mathematics	3	1	0	4	4
HSS-101	Humanities	3	0	0	3	3
CIV-102	Engineering Drawing	3	1	0	4	4
IT-101	Computer Science	3	0	0	3	3
IT-101P	Computer Science Laboratory	0	0	2	2	1
WSP-1 P	Workshop Practice	0	0	4	4	2
Total		19	2	10	30	25
2 nd Semester						
PHY-201	Physics- II	3	0	0	3	3
PHY-201 P	Physics-II (lab)	0	0	2	2	1
CHM-201	Chemistry-II	3	0	0	3	3
CHM-201 P	Chemistry-II (lab)	0	0	2	2	1
MTH-201	Mathematics-II	3	0	0	3	3
HSS-201	Humanities-II	3	0	0	3	3
MED-201	Machine Drawing	3	0	0	3	3
CSE-201	C Programming	2	0	0	2	2
CSE-201 P	C Programming (Lab)	0	0	2	2	1
CIV-201	Engineering Mechanics	3	0	0	3	3
WSP-02 P	Workshop Practice	0	0	4	4	2
Total		20	0	10	30	25
3 rd Semester						
ChBC-31	Introduction to Chemical Engineering	3	1	0	4	4
ChBC-32	Material and Energy Balance	3	2	0	5	5
ChBC-33	Process Fluid Mechanics	3	1	0	4	4
ChBC-34	Thermodynamics and Chem. Kinetics	3	1	0	4	4
EEBC-31	Basic Electrical Engineering	2	1	0	3	3
EEBC-32P	Basic Electrical Engineering Lab.	0	0	2	2	1
MTBC-31	Chemical Eng. Mathematics-I	3	1	0	4	4
Total		17	7	2	26	25

4 th Semester						
ChBC-41	Chemical Eng. Thermodynamics	3	1	0	4	4
ChBC-42	Heat Transfer	3	1	0	4	4
ECEBC-41	Basic Electronic Engineering	2	1	0	3	3
ECEBC-42 P	Basic Electronic Engineering Lab.	0	0	2	2	1
ChBC-43	Mechanical Operations	3	1	0	4	4
ChBC-44P	Fluid Mechanics & Mechanical Operations Laboratory	0	0	4	4	2
ChBC-41	Seminar	0	0	4	4	2
HSBC-41	Ethics & Self-awareness	2	0	0	2	2
MTBC-41	Chemical Eng. Mathematics-II	3	0	0	3	3
Total		16	4	10	30	25
5 th Semester						
ChBC-51	Process Equipment Design –I	3	0	2	5	4
ChBC-52	Chemical Reaction Engineering	3	2	0	5	5
ChBC-53	Material Science & Technology	3	1	0	4	4
ChBC-54	Chemical Technology	3	0	0	3	3
ChBC-55	Mass Transfer-I	3	1	0	4	4
ChBC-56P	Heat Transfer Laboratory	0	0	4	4	2
HSBC-51	Basic Management Principles	3	0	0	3	3
Total		18	4	6	28	25
6 th Semester						
ChBC-61	Process Equipment Design-II	3	0	2	5	4
ChBC-62	Mass Transfer-II	3	1	0	4	4
ChBC-63	Chemical Technology-II	3	0	0	3	3
ChBC-65P	Energy Engineering Laboratory	0	0	2	2	1
ChBC-64	Energy Engineering	3	0	0	3	3
ChBC-66	Process Instrumentation	3	0	0	3	3
ChBC-67	Transport Phenomenon	3	1	0	4	4
ChBC-68P	Thermodynamics & Reaction Engineering Laboratory	0	0	2	2	1
ChBC-69	Industrial Training & Presentation	0	0	4	4	2
Total		18	2	10	30	25
7 th Semester						
ChBP-71	Pre-project Work	0	0	4	4	2
ChBC-72	Chemical Process Safety	3	0	0	3	3
ChBC-73	Process Dynamics & Control	3	1	0	4	4
ChBC-74P	Process Dynamics & Control Lab.	0	0	2	2	1
ChBC-75	Process Economics & Plant Design	3	1	0	4	4
ChBC-76	Biochemical Engineering	3	1	0	4	4
ChBC-77P	Mass Transfer Laboratory	0	0	2	2	1
E-I	Departmental Elective-I	3	0	0	3	3
E-II	Departmental Elective-II	3	0	0	3	3
Total		18	3	8	29	25

8 th Semester						
ChBP-81	Project	0	0	16	16	8
ChBC-82	Bioresource Technology	3	0	0	3	3
ChBC-83P	Biochemical Engineering Laboratory	0	0	4	4	2
ChBC-84	Modeling & Simulation in Chemical Engineering	3	0	0	3	3
ChBC-85	Industrial Pollution Abatement	3	0	0	3	3
E-III	Departmental Elective-III	3	0	0	3	3
E-IV	Departmental Elective-IV	3	0	0	3	3
Total		15	0	20	31	25
GROSS TOTAL		143	25	76	244	200

L: Lecture, P: Practical, T: Tutorial **Table-B.2.1.2b**

Improved Curriculum

In view of the gaps identified following changes were made to the course curriculum:

- i. The “Material and energy balance and Process fluid mechanics” taught in 4th semester as core course has been shifted to 3rd semester level with same LTP so as to get core knowledge from the very beginning.
- ii. The “seminar” earlier held in 7th semester has been shifted to 4th semester level with same LTP to make students aware of research and impart communications skills.
- iii. The “chemical engineering thermodynamics” taught in 5th semester as core course with LTP 3:1:0:4 has been shifted to 3rd semester level with same LTP.
- iv. The “Mechanical operations” taught in 5th semester as core course with LTP 3:1:0:4 has been shifted to 4th semester level with same LTP.
- v. New course “Ethics” have been introduced in 4th semester level in order impart the importance moral education.
- vi. The “Process equipment design” taught in 6th semester as core course has been divided into two parts PED-I and PED-II shifted to 5th and 6th semester level respectively in order to have deep understanding of designing.
- vii. The “chemical technology, energy engineering and mass transfer-I” taught in 6th semester as core course has been shifted to 5th semester level with same LTP.
- viii. The “Industrial organization and management” taught in 4th semester as core course has been shifted to 5th semester level with same LTP. The Course is also renamed as “Basic management principles”.
- ix. The “Chemical technology-II and mass transfer-II” taught in 7th semester as core course has been shifted to 6th semester level with same LTP.
- x. The “Energy Eng. lab and reaction Eng. lab” being taught in 5th semester has been shifted to 6th semester level with same LTP. Also, the lab Course has been renamed as thermodynamics and reaction Eng. Lab.
- xi. New courses “chemical process safety”, “Process modelling and simulation” “Bioresource technology” and “Industrial pollution abatement” as core course have been introduced at 7th and 8th semester level respectively.
- xii. The number of electives in 8th semester has been reduced. Earlier three electives were floated for 8th semester and one for 7th semester. Now there are two electives for both 7th and 8th semester.

Electives 2014 Batch onwards

7 th Semester (E-I)		
S.No.	Elective	Code
1.	Polymer Sciences and Engineering	ChBE-71
2.	Petrochemical Technology	ChBE-72
3.	Advanced Separation Processes	ChBE-73
4.	Operation Research	MTBE-71
5.	Human Resource Development	HSBE-71
7 th Semester (E-II)		
1.	Computational Fluid Dynamics	ChBE-74
2.	Multi Component Distillation	ChBE-75
3.	Optimization Techniques	ChBE-76
4.	Numerical Analysis	MTBE-72
5.	Managerial Economics for Engineers	HSBE-72
8 th Semester (E-III)		
1.	Instrumental Methods of Analysis	ChBE-81
2.	Petroleum Refining	ChBE-82
3.	Food Technology	ChBE-83
4.	Nano-Science and Technology	ChBE-84
8 th Semester (E-IV)		
1.	Process Heat Integration	ChBE-85
2.	Fuel Cell Technology	ChBE-86
3.	Clean Technology in Process Development	ChBE-87
4.	Entrepreneurship Development	HSBE-81

Table-B.2.1.2c

2.1.3. State the Components of the Curriculum (5)

Claimed 5

Programme curriculum grouping based on different components

Course Component		Curriculum Content (% of total number of credits of the programme)	Total number of contact hours	Total Number of credits	Programme Outcomes (POs)
1	Mathematics	7.00	14	14	PO1,PO2,PO3,PO5, PO11, PO12
2	Basic Science	8.00	20	16	PO1,PO2,PO3,PO4,PO6, PO7
3	Basic Eng. Course	11.00	28	22	PO1,PO2,PO3,PO4,PO5,PO6, PO12
4	Computing	3.50	9	7	PO1,PO2,PO3,PO4,PO5,PO12
5	Humanities and Social Science	5.50	13	11	PO6,PO8,PO9,PO10,PO11,PO12
6	Professional Core	52.00	116	104	PO1,PO2,PO3,PO4,PO5,PO6, PO7,PO8, PO9, PO10, PO11, PO12
7	Electives (Department and open)	6.00	12	12	PO1,PO2,PO3,PO4,PO5, PO6,PO7, PO8, PO11, PO12
8	Projects/Training/Seminar	7.00	28	14	PO1,PO2,PO3,PO4,PO5,PO6, PO7,PO9,PO10, PO11, PO12
Total		100	240	200	

Table-B.2.1.3

Pai Chart Demonstration of % of Total Number of Credits

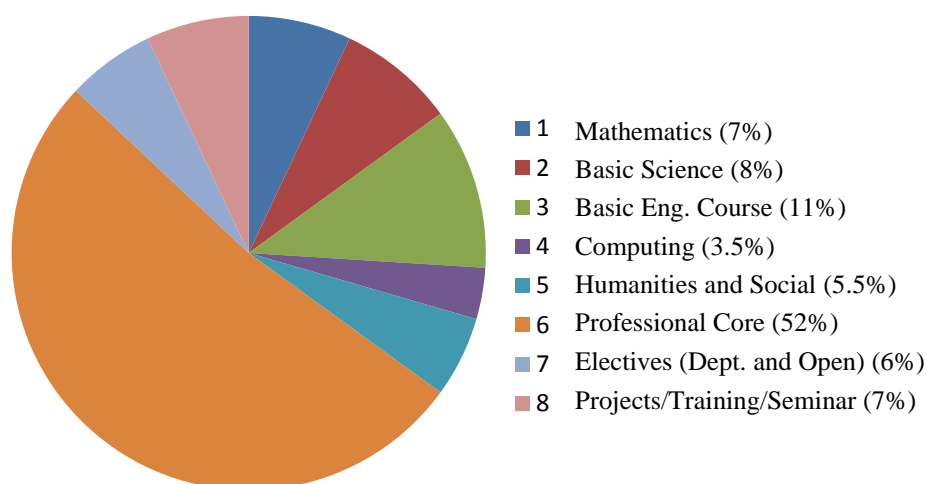


Figure-B.2.1.3

2.1.4 State the process used to identify extent of compliance of the curriculum for attaining the program outcomes and program specific outcomes (10)

Claimed 10

The Department of chemical Engineering has formed the Departmental Committee for guiding academic activities. The committee headed by Head of the Department consists of senior faculty members, industrial persons, alumni and current students. Board curriculum, concept of outcome based education, programme outcomes (PO's), course delivery, evaluation process, mapping etc. For achieving excellence in teaching learning process were elaborately discussed. This process has helped us to comply the board curriculum for attaining the programme outcomes. Accordingly feedback, views, expectations were collected from various stakeholders. The process of establishing POs involve a brain storming session firstly in the department meetings of the faculty based on feedbacks sought from the various stake holders' thorough interactions / questionnaire / interviews / meetings. The department arrives at specific conclusions after a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis based on these interactions and considerations of requirements for developing an ideal student. The program outcomes thus evolved, are put forth in the departmental meeting which reviews the POs'.

2.1.4.1. Process to identify the extent of compliance of Institute curriculum for attainment of POs

- i. POs stated clearly
- ii. Institute curriculum is stated subject wise and the percentage of total credits for each subject is evaluated
- iii. The total number of contact hours for each subject in a semester is calculated
- iv. Course outcomes for each subject are identified.
- v. The POs are mapped with each course outcome.
- vi. The compliance is found out by checking whether each domain map with the relevant PO.

Program Outcome (POs)

PO1: Engineering Knowledge

Apply the knowledge of governing sciences, mathematics and engineering principles for the solution of chemical engineering problems.

PO2: Problem Analysis

Identify, analyze and solve problems related to chemical engineering systems.

PO3: Design/Development of solutions

Design a chemical process to meet the desired needs within the constraints of economics, safety and sustainability.

PO4: Conduct investigations of Complex Problems

Ability to think independently and creatively to formulate innovative solutions to chemical engineering problems.

PO5: Modern tool usage

Employ learning and skills of modern tools to analyze and design advanced chemical engineering processes.

PO6: The engineer and Society

Apply knowledge necessary to assess the impact of engineering solutions in global, environmental, safety and societal context.

PO7: Environment and sustainability

Competence and creativity to use engineering principles to address energy and environmental challenges.

PO8: Ethics and Professionalism

Upholding ethical values in undertaking professional responsibilities to achieve the desired goals.

PO9: Team work and leadership

Capacity to work proficiently as a team in all-inclusiveness, and to accept the position of responsibility, accountability and leadership, with a tolerance for ambiguity.

PO10: Communication skills

Articulate and interpretable communication abilities, both oral and written, to deliver and express solutions, strategies, instructions and opinions.

PO11: Project Management and finance

Employ proper managerial and financial skills to the field of chemical engineering.

PO12: Life Long Learning

Embody an urge to pursue life-long learning which advances the understanding of chemical engineering and allied areas and keep pace with the contemporary technology.

Course Outcomes (COs)

COs are statements of what a student should be able to demonstrate upon the completion of a course. They are assessable and measurable knowledge, skill, abilities or attitudes that students attain by the end of the course.

Course Outcomes.

Course Code and Course name	Course Outcome
Introduction to Chemical Eng. ChBC-31	CO1: Introduction to Chemical Engineering: Origin, Growth, Relation to other sciences
	CO2: Knowledge of Unit Operations and Unit Processes and its application to Chemical Process Industries
	CO3: Concerns of Chemical Engineering in areas of Energy, Environment, new materials, health, bioengineering and safety
	CO4: Implementation of Chemical Engineering Basics to simple systems.
	CO5: Role of modeling and simulation in chemical engineering.
Thermodynamics and Chemical Kinetics ChBC-34	CO1: Understanding and application of laws of thermodynamics
	CO2: Basic insight into the interpretation of kinetic data and reactor design
Mechanical Operations ChBC-43	CO1: Basic understanding and applications of different mechanical operations
	CO2: Exposure to the equipments/systems to carry out the operations
	CO3: Selection of the operations based on the characteristics of materials.
Process Equipment	CO1: Basic idea about the mechanics of materials
	CO2: Understanding of mechanical design of storage and pressure

Design- I ChBC-51	vessels and allied parts.
	CO3: Selection of types of vessels for various applications.
Mass Transfer-I ChBC-55	CO1: Fundamental understanding of mass transfer operations (diffusion, gas absorption, humidification, crystallization and drying)
	CO2: Analyze and interpret equilibrium data
	CO3: Design of the related equipments
Process Equipment Design- II ChBC-61	CO1: Basic understanding about the process equipments based on heat and mass transfer
	CO2: Design of heat and mass transfer systems.
	CO3: Selection of equipments for various applications
Mass transfer-II ChBC-62	CO1: Fundamental understanding of mass transfer operations (distillation, extraction, adsorption and leaching)
	CO2: Interpretation of the thermodynamic and equilibrium data
	CO3: Design of the related equipments.
Energy Eng. ChBC-64	CO1: Understanding of various energy sources (Conventional & non-conventional).
	CO2: Design and selection of systems for efficient utilization of energy
	CO3: Analyzing the energy audit and management system
Process Instrumentation ChBC-66	CO1: To impart the basic concept of instrumentation
	CO2: Analyze the response of instruments
	CO3: Ability to integrate the knowledge about instruments used for temperature, pressure and fluid flows
Industrial Training and Presentation ChBC-69	CO1: Correlate class room learning to real industrial applications
	CO2: Development of written and oral communication skills.
Process Economics and Plant Design ChBC-75	CO1: Understanding the role of economics in process plant design.
	CO2: Design optimization and profitability analysis
	CO3: Application of various project management techniques.
Biochemical Eng. ChBC-76	CO1: Fundamental understanding of the subject based on various conversion routes
	CO2: Role of biochemical engineers in the development of modern fermentation industries
	CO3: Analysis of the data obtained during biochemical processes.
	CO4: Application of the data in design of the systems for conversion and separation.
Seminar ChBC-41	CO1: Effective report writing.
	CO2: Comprehensive communication skills development.
	CO3: Exposure to novel areas of research and latest trends.
Biochemical Eng. Lab ChBC-83P	CO1: Generation and analysis of bioprocess data.
	CO2: Applications in bioprocess development.
	CO3: Fundamental understanding of basic practicals and equipments used
	CO4: Understanding of basic estimation techniques
Material Science	CO1: Basic understanding of the micro- and macroscopic characteristics

and TechnologyChBC- 53	of materials used in chemical process industries.
	CO2: Knowing the effects of various forces including corrosion on the behaviour of the materials.
	CO3: Techniques used for processing of the materials.
Process Dynamics and Control ChBC-73	CO1: Understanding the modeling of the dynamic behavior of processes based on their time, Laplace and frequency domains.
	CO2: Analyzing the response of the first and second order systems.
	CO3: Understanding of the operations of P, PI, and PID controllers.
	CO4: Analyzing the stability of process systems and application of control strategies to check safety and environmental issues.
Transport Phenomenon ChBC-67	CO1: Understanding the transport properties and the mechanisms of momentum, energy and mass transport.
	CO2: Application of conservation laws to formulate differential form of equations for mass, momentum and heat transfer problems and their solutions.
	CO3: Study of non-Newtonian fluids
Process Fluid Mechanics ChBC-33	CO1: Understanding the basic principles of process fluid mechanics.
	CO2: Formulation and solution of fluid flow problems with the application of conservation laws.
	CO3: Study of various equipments and flow measuring devices.
	CO4: Knowledge of dimensional analysis.
Chemical Eng. Thermodynamics ChBC-41	CO1: Basic understanding of the thermodynamic properties of fluid, mixture and solutions.
	CO2: Understanding the principles of chemical equilibrium for solution of multiphase equilibrium problems
Material and Energy Balance ChBC-32	CO1: Fundamental understanding of material and energy balances.
	CO2: Solution of problems involving physical, chemical and biological changes.
	CO3: Understanding the material and energy balance of non-conventional separation processes.
Heat Transfer ChBC-42	CO1: Understanding the fundamentals of various modes of heat transfer.
	CO2: Formulation, analysis and solution of problems related to heat transfer.
	CO3: Design and analysis of the heat transfer equipments.
Chemical Technology ChBC-54	CO1: Understanding of processes used by chemical process industries for production of various products.
	CO2: Application of process flow diagram by the chemical process industries.
	CO3: Ability to deal with apparatus, unit operations, and chemical economics.
Heat Transfer Lab. ChBC-56P	CO1: Relate to concepts discussed in the Heat Transfer course.
	CO2: Perform experiments on conduction, convection and radiation.
	CO3: Identify the heat exchange properties of various materials.
	CO4: Evaluate the amount of heat exchange for plane, cylindrical & spherical geometries.
	CO5: Compare the performance of heat exchangers.

Mass Transfer Lab. ChBC-77P	CO1: Fundamental Understanding of the mass transfer principles and their industrial application
	CO2: Elaborate on the various equipment to determine the mass transfer coefficients, diffusion criterions.
	CO3: Derive and verify the mass transfer principles on basis of wetted columns, cooling towers and adsorption towers.
Petroleum Refinery ChBE-72	CO1: Knowledge about production of crude oil, along with its properties and characterization methods.
	CO2: Understand the process of fractionation and identify the specifications for good quality petroleum
	CO3: Identify different products obtained from refining process and their best utilization.
	CO4: Integrate and evaluate problems pertaining to crude oil refinery engineering.

Table-B.2.1.4.1**2.1.4.2. Process to Identify Gaps in the Curriculum****i. Alumni Survey**

- Measures the degree to which past students believe they achieved program level learning outcomes.
- Overall satisfaction with the program.
- Overall satisfaction with the program delivery.
- Information on current professional or academic status. Typically collected every three-four years

ii. Industry/Employers Survey

- Provides general information on current industry trends.
- Desirable graduate attributes.
- Overall perceptions of program quality. Strengths and expectations of graduates.

iii. In Program Students Survey

- Measures the degree to which current students believe they are achieving Program-level learning outcomes.
- Overall satisfaction with the program.

iv. Existing Students Survey

- Measures quality of the program and satisfaction with curriculum.
- An overall program delivery.

Process to identify the Curricular Gaps through Survey

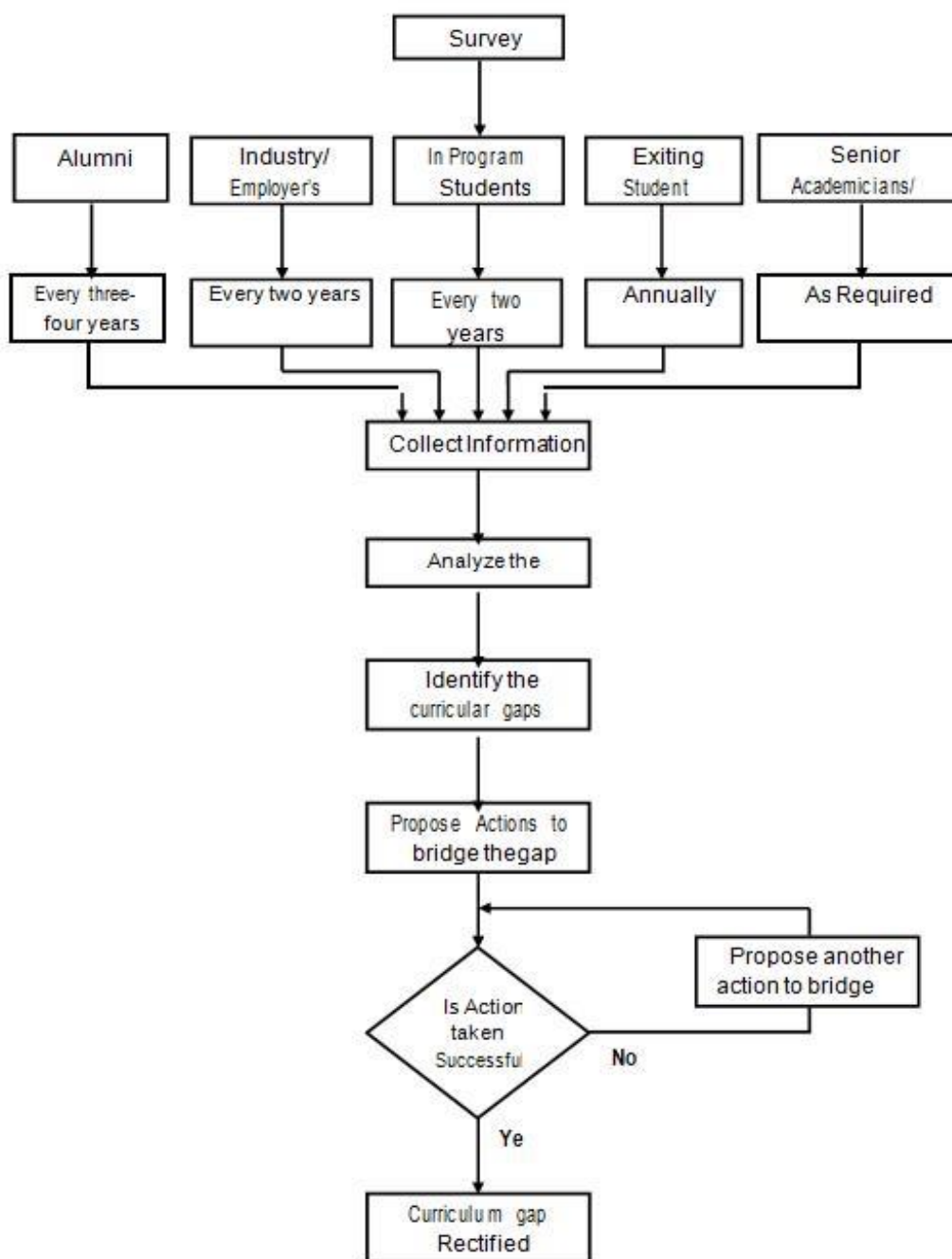


Figure-B.2.1.4.2

SURVEY FORMS

ALUMNI SURVEY

Chemical Engineering Department <u>National Institute of Technology Srinagar</u> Alumni Survey Form		
<p>Thank you for taking the time to fill out this questionnaire. All the information will be kept confidential and will be used only for statistical purposes. As an alumnus, your opinions are valued and are utilized to help us make periodic changes and updates for continuous improvement of our undergraduate program</p>		
Alumni name		
Year of Graduation		
Mailing address		
Placement	Before/after graduation	Core/Software
Name of the Company		
<p>Please rate each of the following skills, abilities or attributes in terms of their importance to state how well your education at Mechanical Engineering Department, National Institute of Technology, Srinagar prepare you for these.</p>		
Skills, Abilities and Attributes		Scale (1 to 5) Excellent to poor
Apply Knowledge of mathematics, Basic sciences and Engineering		
Problem Identification and Analysis		
Design a system and develop solution to the problem		
Investigate and handle complex problems		
Ability to use techniques and tools in engineering practice		
Understand and appreciate the impact of engineering in the societal and global contexts		
Awareness of existing issues (e.g. Economics of engineering, Environmental issues)		
Understand professional and ethical responsibilities as an engineer (e.g., safety, professional ethics, code of conduct)		
Function effectively in teams		
Proficient in English language in both communicative and technical forms		
Awareness of the need for life-long learning (Seeking further education, self-learning, Membership in professional societies)		
Project Management and Finance		
Signature	Suggestion if any:	

EMPLOYER SURVEY

Chemical Engineering Department <u>National Institute of Technology, Srinagar</u> Employer Survey Form				
The purpose of this survey is to obtain Employer's input on the quality of education of undergraduate programs in NIT, Srinagar. Your sincere cooperation would enable us to improve the quality of our graduates as per your requirements				
Name of Company/ Organization				
Mailing address				
Sector Private/Public/Academia				
What are the pertinent employability skills to stay updated in current industry trends and thereby improve the quality of the undergraduate program?		Logical Thinking	Good Aptitude	Excellent Communication
Rate the NIT Srinagar Graduates working in your organization using the following criterion. Put tick mark Knowledge, Skills, Abilities, Attitude and other Attributes expected out of NIT Srinagar graduates.				
Sl. No.	Overall, are you satisfied with	Excellent (3)	Good (2)	Satisfied (1)
i.	Capacity for development and analysis of engineering problems and formulation of appropriate solutions, retaining professional and ethical responsibilities.			
ii.	Aptitude for self-education, ability to learn new skills and a clear appreciation for the value of life-long learning to update professional knowledge.			
iii.	Understanding professional engineering solutions for sustainable development and their application in global, national and societal contexts.			
iv.	Competence for acquiring new skills and applying them in research and development.			
v.	Fundamental knowledge in mathematics and science and professional fluency in English both communicative and technical forms.			
vi.	Dexterity in differentiation of management techniques and possession of leadership skills that enable successful function of multi-disciplinary teams.			

Signature:

Name and Designation:

IN PROGRAM STUDENTS SURVEY

National Institute of Technology, Srinagar <u>Chemical Engineering Department</u> In-Program Student Survey Form		
Name:		Year Passed out:
Email:		Phone
Assessment of Knowledge, Skills, Abilities and Attributes presently acquired at NIT Srinagar		
Please rate each of the following Knowledge, Skills, Abilities, Attitudes or attribute in terms how well NIT Srinagar inculcated them in your education so far. (tick mark the your choice)		
i.	Ability to acquire and apply knowledge of basic mathematics, science and engineering fundamentals. <i>If not satisfied give your suggestions to improve</i>	
	<i>Extremely Satisfied</i>	<i>Satisfied</i>
ii.	Ability to apply analytical skills to engineering problems. <i>If not satisfied give your suggestions to improve</i>	
	<i>Extremely Satisfied</i>	<i>Satisfied</i>
iii.	Ability to conduct experiments, analyze data, and present results. <i>If not satisfied give your suggestions to improve</i>	
	<i>Extremely Satisfied</i>	<i>Satisfied</i>
iv.	Ability to conduct independent research for information required in engineering problem Solving. <i>If not satisfied give your suggestions to improve</i>	
	<i>Extremely Satisfied</i>	<i>Satisfied</i>
v.	Ability to use modern technologies and tools necessary for practice. <i>If not satisfied give your suggestions to improve</i>	
	<i>Extremely Satisfied</i>	<i>Satisfied</i>
vi.	Ability to understand global issues related to engineering. <i>If not satisfied give your suggestions to improve.</i>	
	<i>Extremely Satisfied</i>	<i>Satisfied</i>
vii.	Understand the importance of ethical and professional responsibility. <i>If not satisfied give your suggestions to improve</i>	
	<i>Extremely Satisfied</i>	<i>Satisfied</i>
viii.	An ability to function on multi-disciplinary teams. <i>If not satisfied give your suggestions to improve</i>	
	<i>Extremely Satisfied</i>	<i>Satisfied</i>
ix.	An ability to communicate effectively. <i>If not satisfied give your suggestions to improve</i>	
	<i>Extremely Satisfied</i>	<i>Satisfied</i>
x.	A recognition of the need for, and an ability to engage in life-long learning. <i>If not satisfied give your suggestions to improve</i>	
	<i>Extremely Satisfied</i>	<i>Satisfied</i>

EXITING STUDENTS SURVEY

Chemical Engineering Department			
<u>National Institute of Technology, Srinagar</u>			
Exiting Students Survey Form			
Name:		En. Roll.No:	
Phone No.		Email:	
Assessment of Abilities, Skills and Attributes acquired at NIT Srinagar.			
Please rate each of the following items in terms how well your education at NIT Srinagar prepared you for them.			
i.	Basic knowledge in mathematics, science, engineering and humanities.		
	<i>Extremely Satisfied</i>	<i>Satisfied</i>	<i>Not Satisfied</i>
ii.	Ability to identify, design, analyze and solve mechanical engineering problems		
	<i>Extremely Satisfied</i>	<i>Satisfied</i>	<i>Not Satisfied</i>
iii.	Ability to identify, design, analyze and solve mechanical engineering problems		
	<i>Extremely Satisfied</i>	<i>Satisfied</i>	<i>Not Satisfied</i>
iv.	Design/ development of complex engineering problems and their solutions		
	<i>Extremely Satisfied</i>	<i>Satisfied</i>	<i>Not Satisfied</i>
v.	Use of research-based knowledge and research methods		
	<i>Extremely Satisfied</i>	<i>Satisfied</i>	<i>Not Satisfied</i>
vi.	Demonstrate the ability to apply advanced technologies to solve contemporary and new problems		
	<i>Extremely Satisfied</i>	<i>Satisfied</i>	<i>Not Satisfied</i>
vii.	Awareness to apply engineering solutions in global, national and societal contexts		
	<i>Extremely Satisfied</i>	<i>Satisfied</i>	<i>Not Satisfied</i>
viii.	Understanding professional engineering solutions in societal and environmental contexts		
	<i>Extremely Satisfied</i>	<i>Satisfied</i>	<i>Not Satisfied</i>
ix.	Understanding professional engineering solutions in societal and environmental contexts		
	<i>Extremely Satisfied</i>	<i>Satisfied</i>	<i>Not Satisfied</i>
x.	Understanding of professional and ethical responsibility		
	<i>Extremely Satisfied</i>	<i>Satisfied</i>	<i>Not Satisfied</i>
xi.	Ability to function as an effective member in multi-disciplinary teams		
	<i>Extremely Satisfied</i>	<i>Satisfied</i>	<i>Not Satisfied</i>
xii.	Proficient in English language in both communicative and technical forms		
	<i>Extremely Satisfied</i>	<i>Satisfied</i>	<i>Not Satisfied</i>

xiii.	Demonstrate the ability to choose and apply appropriate resource management techniques		
	<i>Extremely Satisfied</i>	<i>Satisfied</i>	<i>Not Satisfied</i>
xiv.	Capable of self-education and clearly understand the value of updating their professional knowledge to engage in life-long learning		
	<i>Extremely Satisfied</i>	<i>Satisfied</i>	<i>Not Satisfied</i>
xv.	Ability to integrate theory and practice to construct systems of varying complexity		
	<i>Extremely Satisfied</i>	<i>Satisfied</i>	<i>Not Satisfied</i>
xvi.	Ability to apply mechanical engineering skills, tools and mathematical techniques to analyze, design and model complex systems		
	<i>Extremely Satisfied</i>	<i>Satisfied</i>	<i>Not Satisfied</i>
xvii.	Ability to design and manage small-scale projects to develop a career in mechanical engineering		
	<i>Extremely Satisfied</i>	<i>Satisfied</i>	<i>Not Satisfied</i>

1. Please list some very important skills that you think you had learned in the engineering program.

2. Please write down any comments or suggestions that you think will improve the engineering programs at NIT Srinagar.

3. Please comment about the department Vision and Mission:

2.2. Teaching-Learning Processes (70)

2.2.1. Describe the process followed to improve quality of Teaching-Learning (15)

Our concern here is specifically with teaching, as opposed to academic or research program structure and administration. Prime focus is given as to how an instructor can improve the quality of instruction in an individual course, and then the more difficult question of how an academic organization (which in our case is our academic Department) can improve the quality of its instructional program.

A. Adherence to Academic Calendar (2)

The course delivery and the conduct of activities are planned in accordance with the academic calendar. All the academic and extracurricular activities of the department are conducted with strict adherence to the academic calendar. The academic calendar serves as an information source and planning document for students, faculty, staff and the Department. The academic calendar is prepared at the beginning of each semester with a clear plan of conducting examinations, co-curricular and extracurricular activities of the Institute. Subject allotment is done well in advance for the staff to prepare lesson plans, course plan, soft and hard copies of the lecture notes. Academic calendars for the years 2017-2018, 2016-2017 and 2015-2016 are detailed in the tables given below:

Academic Calendar for the Year 2017-2018 (Spring Session)

ACTIVITY	Date	
	From	To
REGISTRATION		
B.Tech 8th semester	19-02-2018	21-02-2018
Registration with late fee @ Rs. 400/= per day	Up to 26-02-2018	
B.Tech. 2 nd 4 th & 6 th semesters and M.Tech/ M.Sc. 2 nd & 4 th and Ph.D.	26-02-2018 to 28-02-2018	
Registration with late fee @ Rs. 400/= per day	Upto 05-03-2018	
COMMENCEMENT OF CLASSES		
Commencement of Classes for B.Tech. 8 th semester	22-02-2018	
Commencement of Classes for B.Tech. 2 nd & 4 th , 6 th semesters and M.Tech./ MS.c. 2 nd & 4 th and Ph.D	01-03-2018	
Extra Curricular Activities	28-04-2018 to 30-04-2018	
Alumni meet-2018	28-04-2018 to 29-04-2018	
B.Tech. 8 th Semester	16-04-2018 to 21-04-2018	
B.Tech. 2 nd , 4 th & 6 th ; M.Tech/M.Sc. 2 nd & 4 th semesters and Ph.D.	23-04-2018 to 28-04-2018	
ANNUAL DAY	01-05-2018	
PRACTICAL EXAMINATIONS		
B.Tech. Project viva-voce Exam	11-06-2018 to 12-06-2018	
M.Tech. Dissertation Viva-voce Exam	1 st week of July-2018	
END SEMESTER		
B.Tech. 8 th	28-05-2018	
B.Tech. 2 nd , 4 th & 6 th ; M.Tech / M.Sc. 2 nd & 4 th semesters and Phd	19-06-2018	
Advertisement for Ph.D. admissions	Last week of May-2018	
Supplementary Examinations for odd semester	From 02-07-2018	
Summer Break	10-07-2018	22-07-2018
Special Supplementary Examinations for 8 th semester	16-07-2018	

Table-B.2.2.1a

Adherence to Academic Calendar Year 2017-2018 (Spring 2018 session)

Month	Date	Activities Planned
February	19-02-2018 to 21-02-2018	Registration B.Tech. 8 th Semester
	22-02-2018	Commencement of classes for B.Tech. 8 th Semester
	22-02-2018 to 26-02-2018	Registration with late fee B.Tech. 8 th Semester
	26-02-2018 to 28-02-2018	Registration B.Tech. 2 nd , 4 th and 6 th Semesters, M.Tech./M.Sc. 2 nd and 4 th and Ph.D.
March	01-03-2018 to 05-03-2018	Registration with late fee B.Tech. 2 nd , 4 th and 6 th Semesters, M.Tech./M.Sc. 2 nd and 4 th and Ph.D.
	01-03-2018	Commencement of classes for B.Tech. 2 nd , 4 th and 6 th Semesters, M.Tech./M.Sc. 2 nd and 4 th and Ph.D.
April	16-04-2018 to 21-04-2018	Mid-Term exam B.Tech. 8 th Semester
	23-04-2018 to 28-04-2018	Mid-Term exam B.Tech. 2 nd , 4 th and 6 th Semesters, M.Tech./M.Sc. 2 nd and 4 th and Ph.D.
	28-04-2018 to 29-04-2018	Alumni Meet-2018
	28-04-2018 to 30-04-2018	Extra Curricular Activities
May	01-05-2018	Annual Day
	Last week of May	Practical Examinations
	Last week of May	Advertisement for Ph.D. admissions
	From 28-05-2018	End Semester Examination B.Tech. Semester
June	11-06-2018 to 12-06-2018	B.Tech. Project Viva-voce Examination
	From 19-06-2018	End Semester Examination B.Tech. 2 nd , 4 th and 6 th Semesters, M.Tech./M.Sc. 2 nd & 4 th and Ph.D.

Table-B.2.2.1b**Academic Calendar for the Year 2017-2018 (Autumn Session)**

Registration for U.G., P.G. & Ph.D.	23-07-2018 to 25-07-2018
Registration with late fee @Rs 400/= per day	Upto 30-07-2018
Commencement of classes	6-07-2018
Extracurricular activity	07-09-2018 to 15-09-2018
Midterm examination	10-09-2018 to 15-09-2018
Convocation	22-09-2018
Alumni meet Delhi chapter	29-09-2018 to 30-09-2018
Tech fest/ECA	13-10-2018 to 15-10-2018
National innovation day	15-10-2018
Practical examination	1st week of November
National Entrepreneur day	09-11-2018
End semester examination	From 12-11-2018
Supplementary examinations for even semester	From 26-11-2018
Winter vacation for students	10-12-2018

Table-B.2.2.1c

Adherence to Academic Calendar (2016-2017)

Month	Date	Activities Planned
February	25-02-2016 to 29-02-2016	Registration (Spring 2017 session)
March	01-03-2016 to 04-03-2016	Late Registration (Spring 2017 session)
	01-03-2016 to 10-06-2016	Teaching (8 th Semester)
	01-03-2016 to 17-06-2016	Teaching (other Semesters)
April	11-04-2016 to 14-04-2016	1 st Minor
	15-04-2016 to 17-04-2016	Extra Curricular Activities
May	16-05-2016 to 19-05-2016	2 nd Minor
	21-05-2016 to 22-05-2016	Alumni Day
	28-05-2016	Annual Day
June	09-06-2016 to 11-06-2016	B.Tech. Project Viva-voce Examination
	13-06-2016 to 23-06-2016	Major (8 th Semester)
	24-06-2016 to 08-07-2016	Major (Other even Semesters)
	27-06-2016	Result Declaration (8 th Semester)
	30-06-2016	M.Tech. Dissertation Viva-voce Exam
July	04-07-2016	Result Declaration (M.Tech.)
	11-07-2016 to 19-07-2016	Supplementary Examinations for odd Semester
	15-07-2016	Result Declaration (all semesters)
	20-07-2016 to 21-07-2016	Not held as per the college academic calendar because of tense situation prevailed in Kashmir from July 2016 to Nov 2016. Complete Kashmir was under curfew. Semester classes and examination were compensated during winter break (session January 2017)
	22-07-2016 to 25-07-2016	
	22-07-2016 to 10-11-2016	
	29-07-2016 to 31-07-2016	
3 rd week of August		
29-08-2016 to 01-09-2016		
02-09-2016 to 04-09-2016		
September	Last week of September/ First week of October	
October	3-10-2016 to 06-10-2016	
November	14-11-2016 to 28-11-2016	
December	01-12-2016 to 12-12-2016	
	12-12-2016	
	13-12-2016 to 24-02-2017	

Table-B.2.2.1d

Institute Academic Calendar for the Year 2015-16

CADEMIC CALENDAR OF NIT SRINAGAR FOR THE YEAR 2015-16				
SPRING SESSION				
ACTIVITY	DATE		DAY	
	From	To	From	To
1. a. Registration	02-03-2015	04-03-2015	Monday	Wednesday
b. Late Registration	05-03-2015	09-03-2015	Thursday	Monday
2. a. Teaching (8th Semester)	05-03-2015	12-06-2015	Thursday	Friday
b. Teaching for other semesters	05-03-2015	19-06-2015	Thursday	Friday
3. 1st Minor	13-04-2015	16-04-2015	Monday	Thursday
4. Extra-Curricular Activities	17-04-2015	19-04-2015	Friday	Sunday
5. 2nd Minor	18-05-2015	21-05-2015	Monday	Thursday
6. Tech. Fest.	22-05-2015	24-05-2015	Friday	Sunday
7. Alumni Day	24-05-2015		Sunday	
8. Annual Day	30-05-2015		Saturday	
9. B.Tech. & M. Tech. Project Viva	11-06-2015	13-06-2015	Thursday	Saturday
10. Major for 8th semester	15-06-2015	23-06-2015	Monday	Tuesday
11. Major for other even semesters	24-06-2015	06-07-2015	Wednesday	Monday
12. Supplementary for odd semesters	09-07-2015	17-07-2015	Thursday	Friday
13. Result Declaration for 8th Semester	26-06-2015		Friday	
AUTUMN SESSION				
ACTIVITY	DATE		DAY	
	From	To	From	To
1. a. Registration	20-07-2015	23-07-2015	Monday	Thursday
b. Late Registration	24-07-2015	27-07-2015	Friday	Monday
2. Teaching	24-07-2015	10-11-2015	Friday	Tuesday
3. Fresher's Orientation Day	3rd week of August			
4. 1st Minor	31-08-2015	03-09-2015	Monday	Thursday
5. Extra-Curricular Activities	18-09-2015	20-09-2015	Friday	Sunday
6. CONVOCATION 2015	Third Week of September			
7. 2nd Minor	05-10-2015	08-10-2015	Monday	Thursday
8. Major for odd semesters	16-11-2015	30-11-2015	Monday	Tuesday
9. Supplementary for even semesters	03-12-2015	10-12-2015	Thursday	Thursday
10. WINTER VACATIONS (for students)	11-12-2015	29-02-2016	Friday	Monday

Table-B.2.2.1e

Adherence to Academic Calendar (2015-2016)

ADEHERENCE TO THE ACADEMIC CALENDAR OF NIT SRINAGAR FOR THE YEAR 2015-16				
SPRING SESSION				
ACTIVITY	DATE		DAY	
	From	To	From	To
1. a. Registration	02-03-2015	04-03-2015	Monday	Wednesday
b. Late Registration	05-03-2015	09-03-2015	Thursday	Monday
2. a. Teaching (8th Semester)	05-03-2015	12-06-2015	Thursday	Friday
b. Teaching for other semesters	05-03-2015	19-06-2015	Thursday	Friday
3.1st Minor	13-04-2015	16-04-2015	Monday	Thursday
4. Extra-Curricular Activities	17-04-2015	19-04-2015	Friday	Sunday
5. 2nd Minor	18-05-2015	21-05-2015	Monday	Thursday
6. Tech. Fest.	22-05-2015	24-05-2015	Friday	Sunday
7. Alumni Day	24-05-2015		Sunday	
8. Annual Day	30-05-2015		Saturday	
9. B.Tech. & M. Tech. Project Viva	11-06-2015	13-06-2015	Thursday	Saturday
10. Major for 8th semester	15-06-2015	23-06-2015	Monday	Tuesday
11. Major for other even semesters	24-06-2015	06-07-2015	Wednesday	Monday
12. Supplementary for odd semesters	09-07-2015	17-07-2015	Thursday	Friday
13. Result Declaration for 8th Semester	26-06-2015		Friday	
AUTUMN SESSION				
ACTIVITY	DATE		DAY	
	From	To	From	To
1. a. Registration	20-07-2015	23-07-2015	Monday	Thursday
b. Late Registration	24-07-2015	27-07-2015	Friday	Monday
2. Teaching	24-07-2015	10-11-2015	Friday	Tuesday
3. Fresher's Orientation Day	3rd week of August			
4. 1st Minor	31-08-2015	03-09-2015	Monday	Thursday
5. Extra-Curricular Activities	18-09-2015	20-09-2015	Friday	Sunday
6. CONVOCATION 2015	CONVOCATION HELD			
7. 2nd Minor	05-10-2015	08-10-2015	Monday	Thursday
8. Major for odd semesters	16-11-2015	30-11-2015	Monday	Tuesday
9. Supplementary for even semesters	03-12-2015	10-12-2015	Thursday	Thursday
10. WINTER VACATIONS (for students)	11-12-2015	29-02-2016	Friday	Monday

Table-B.2.2.1f

B. Pedagogical Initiatives (2)

We may define good teaching as instruction that leads to effective learning, which in turn means thorough and lasting acquisition of the knowledge, skills, and values the instructor or the institution has set out to impart. In the sections that follow, we describe several strategies, known to be particularly effective and as implemented in the departmental teaching methodologies.

1. Instructional objectives are met

Instructional objectives are statements of specific observable actions that students should be able to perform if they have mastered the content and skills the instructor has attempted to teach. An instructional objective has one of the following stems:

*At the end of this [course, chapter, week, lecture], the student should be able to ****

*To do well on the next exam, the student should be able to ****

Where *** is a phrase that begins with an action verb (e.g., *list, calculate, solve, estimate, describe, explain, paraphrase, interpret, predict, model, design, optimize...*). The outcome of the specified action must be directly observable by the instructor: words like "learn," "know," "understand," and "appreciate," while important, do not qualify.

Following are illustrative phrases that are attached to the stem of an instructional objective, grouped in six categories according to the levels of thinking they require.

- i. **Knowledge** (*repeating verbatim*)
- ii. **Comprehension** (*demonstrating understanding of terms and concepts*)
- iii. **Application** (*solving problems*)
- iv. **Analysis** (*breaking things down into their elements, formulating theoretical explanations or mathematical or logical models for observed phenomena*)
- v. **Synthesis** (*creating something, combining elements in novel ways*)
- vi. **Evaluation** (*choosing from among alternatives*)

Well-formulated instructional objectives help the teachers prepare lecture and assignment schedules and facilitate construction of in-class activities, out-of-class assignments, and tests. The greatest benefit comes when the objectives cover all of the content and skills the teacher wishes to teach and they are handed out as study guides prior to examinations. The more explicitly students know what is expected of them, the more likely are to meet the expectations.

2. Active Learning is Promoted in Class

Most students cannot stay focused throughout a lecture. After about 10 minutes their attention begins to drift, first for brief moments and then for longer intervals, and by the end of the lecture they are taking in very little and retaining less. A classroom research study showed that immediately after a lecture, students recalled 70% of the information presented in the first ten minutes and only 20% of that from the last ten minutes.

Therefore, students' attention is maintained throughout a class session by periodically giving them something to do. Many different activities serve this purpose, of which the most common is the quick question exercise.

Active learning exercises address a variety of objectives. Some examples follow:

- i. **Recalling Prior Material:** The students may be given one minute to list as many points as they can recall about the previous lecture or about a specific topic covered in an assigned reading.

ii. Responding to Questions: Any questions a teacher normally asks in class is directed to groups. In most classes—especially large ones—very few students are willing to volunteer answers to questions, even if they know the answers. When the questions are directed to small groups, most students attempt to come up with answers and the teacher thus, gets as many responses as he or she wants.

iii. Problem Solving: A large problem can always be broken into a series of steps, such as paraphrasing the problem statement, sketching a schematic or flow chart, predicting a solution, writing the relevant equations, solving them or outlining a solution procedure, and checking and/or interpreting the solution. When working through a problem in class, the instructor usually completes some basic pre-requisite steps and then asks the student groups to attempt others. It should be ensured and is generally followed, that the groups should generally be given enough time to think about what they have been asked to do and begin formulating a response but not necessarily enough to reach closure.

iv. Generating Questions and Summarizing: The students are given a minute to come up with two good questions about the preceding lecture segment or to summarize the major points in the lecture just concluded.

3. Assessment and Evaluation of Teaching Quality

Most institutions use only end-of-course student surveys to evaluate teaching quality. While student opinions are important and should be including in any assessment plan, meaningful evaluation of teaching must rely primarily on assessment of learning outcomes. Current trends in assessment include shifting from standardized tests to performance-based assessments, from teaching-based models to learning-based models of student development, and from assessment as an add-on to more naturalistic approaches embedded in actual instructional delivery. Measures that are used to obtain an accurate picture of students' content knowledge and skills include tests, performance investigations, project reports, and learning logs and journals.

Improving teaching requires identifying problems with existing academic practices and then applying a combination of sound educational and psychological principles to devise a better approach. Such approaches have already been devised.

- i. Faculty members and administrators define the knowledge, skills, and values that the graduates of the program should have.
- ii. With the assistance of experts in pedagogy and learning assessment, the faculty defines the instructional methods most likely to lead to the acquisition of the desired attributes, selects the methods needed to assess the effectiveness of the instruction, and estimates the resources needed to implement both the instruction and the assessment.
- iii. The administration commits to provide both the necessary resources to initiate and sustain the program and appropriate incentives for faculty members to participate.
- iv. The faculty and administration formulate a detailed implementation plan.
- v. The faculty implements the plan.
- vi. The faculty and administration assess the results and modify the plan as necessary to move closer to the desired outcomes.

4. Mentoring System to Help at Individual Levels

The functions of the mentors include:

- i. Monitoring the academic and general progress of the students.
- ii. Advising them on elective course selection.
- iii. Monitoring their attendance.
- iv. Advising them to register for supplementary exams based on their progress and capabilities.
- v. Counseling the students on general matters, discipline, conduct and ethical values.
- vi. Monitoring their attendance.
- vii. Advising them to register for supplementary exams based on their progress and capabilities.
- viii. Counseling the students on general matters, discipline, conduct and ethical values.

C. Methodologies to support weak students and encourage bright students (2)

The Chemical Engineering Department has always strived on the culture of encouraging bright students as well as helping weak students by providing them necessary guidance and moral support. The weaker students are monitored constantly vis-a-vis their class performance, attendance, quiz outcomes and even grades and pointers. They are helped by arranging extra classes and tutorials. Apart from this, critical cases are even addressed by proper counseling and support by the faculty members. Individual attention is also provided to motivate certain weaker student sections.

- i. The students who scored less than 50% marks belong to group of weak student and above 80% belong to the group of bright students.
- ii. A total of three tests will be conducted in each semester to assess the student's performance in subjects.
- iii. Remedial classes will be conducted for the weak students by each faculty.
- iv. The number of hours taken for remedial classes will be decided by the faculty as required.
- v. A remedial test will be conducted for the weaker students thereafter and the results are analyzed to identify the impact of the remedial classes.
- vi. Additional measures will be taken by the respective faculty in cases where the students fail to achieve the objective of remedial classes.

The department has a well-defined process of monitoring, guiding and assisting slow learners (weak students). Care is taken by the faculties in monitoring the performance of slow learners, the students deviations from studies is observed by the respective section coordinators and corrective measures are suggested.

The observable impact of assisting weak students is reduced number of identifiable weak students. Improved results and less number of failures in each subjects.

On the other hand, class toppers are felicitated by encouragement. The bright students are identified based on their overall performance and their orientation towards academics. The students scored above 80% marks belong to the group of bright students. The measures taken to encourage bright students will be decided by the respective faculty.

The measures taken may include the following and additional actions may be according to the requirement:

- i. Recommend some quality references.

- ii. Provide details of books to be referred.
- iii. Suggest some e-resources and journals.
- iv. Motivate them to support/assist weak students.
- v. Self-learning facility.

They are even encouraged to attend conferences, workshops and publish papers; encouraged to take up innovative projects. The bright students having high academic track records are encouraged by faculties to achieve university ranks, also encouraged to take up competitive examinations like GATE, GRE etc.

The impact of this methodology is that very good results in most examinations. Improvement in analytical abilities of students thus improves the professional bent of students and serves as a good check on the adherence to all PO's in the departmental ideology.

D. Quality of Classroom Teaching (Observation in a Class) (2)

The faculty of department adopts various innovative Teaching and Learning methodologies to create the best learning environment for student. These methodologies include traditional white board teaching, presentations, NPTEL/video lecturing, collaborative learning methods are used where every concept is explained with real world illustrations, design and problematic aspects are conveyed by a short cut method. The faculty are now oriented towards Outcome based Education (OBE) and are actively utilizing the OBE to cater the learning needs of students by innovative way. The lecture session duration is 50 minutes or 100 minutes. The Laboratory duration is 2-3 hours. Assignments are given to students for their better performance. Tutorial/Remedial classes are conducted for the slow learners based on their performance in external exams and after the first internals. Motivating and guiding students for higher studies and university ranks is the ambition. Technical quizzers are also conducted for the students. All the faculties are requested to maintain attendance registers, course files, work dairies. Industrial visits are conducted at least once a year to reduce the gap between industry and institute. Workshops are organized to help the students to understand concepts beyond curriculum. One-one discussion, interaction between Professors and students has increased confidence levels of the students. To meet the current requirements of the industry, the syllabus is formulated in light of the PO's. Project Work allows them to gain in depth knowledge as they carry out literature survey of the concepts, and hands on experience of the tools and hardware. Through the experiences of independent research, students are better prepared in the areas of critical thinking and learning. This encourages the students to pursue graduate studies and research work.

Modes of delivery of courses:

The following are various content delivery methods used to deliver the courses:

- Mth1 – Lectures
- Mth2 – Tutorial Sessions
- Mth3 – Laboratory Sittings
- Mth4 – Quiz/Assignment
- Mth5 – Presentations
- Mth6 – Research Literature
- Mth7 – Guest/Extension Lectures
- Mth8 – Workshop Sessions

Mth1 – Lectures

Lectures held in classrooms help in transmitting the knowledge. Here, the course coordinator disseminates the information to the students. Each lecture is generally delivered according to the Course Plan which is distributed to the students at the beginning of the course during the start of each semester. Students are encouraged to interact during the lectures. Thus, lectures generally help in the attainment of POs.

Mth2 – Tutorial Sessions

Tutorials are generally intended to

- i. Enable students to pursue their individual academic interests within the context of the subject.
- ii. Help students to gain a deep understanding of the subject matter.
- iii. Develop student's ability to think and act like a professional in their discipline.
- iv. Develop student's basic academic skills like identification and evaluation of relevant resources, effective communication, effective time-management etc.
- v. For each subject, one hour in every week is allotted for conducting tutorial.

The tutorials help motivating the students to closely interact with the course coordinator/teaching assistant and the peer group and help in attainment of PO2, PO3 and PO4. Tutorial are conducted to give exercises to the students and also to closely monitor their learning ability and achievement. Tutorials have improved interaction of the students with faculty members which in turn has improved their learning outcomes. Further, tutorials have provided opportunity to the students to improve their problem analysis and solving skills, team collaboration and communication skills.

Mth3 – Laboratory Sitings

Courses having associated laboratory in curriculum help the students in formulating the link between the theory and practice and hence acquire skills. Specific tasks are assigned to the students individually or in groups. These tasks help the student(s) to comprehend the behavior of processes. The students also acquire the skills to utilize the equipment, software and tools. After solving each task, the students are supposed to interpret the outcome and provide valid conclusions/remarks. Hence, these laboratory sittings help in attainment of PO4, PO5, PO8 and PO9.

Mth4 – Quiz/Assignment

Generally 1-2 surprise quizzes are held during each semester for every course. Such quizzes are based on objective questions viz. multiple choice questions, questions/problems requiring one word answer, recalling the important equations/theorems, etc. Surprise quiz and assignments allocation alerts the students to be prepared for each session. These sessions also help in attainment of the specific POs.

Mth5 – Presentations

Slide presentations can be used in courses more geared toward information exchange than skill development. The benefits of using presentations include: Engaging multiple learning styles

- i. Increasing visual impact.
- ii. Improving audience focus.
- iii. Providing annotations and highlights.

This delivery method helps in attainment of PO1, PO2, PO8, PO10 and PO11.

Mth6 – Research Literature

In addition to the text books/references mentioned for each course, the students are also exposed to the technical research content such as IEEE Xplore subscriptions and basic NPTEL platforms to enhance their knowledge and skills. They encourage the students to develop an attitude to pursue lifelong learning with high ends. This helps in attainment of PO1, PO2 and PO12.

Mth7 – Guest/Extension Lectures

During the semester, experts from various domains of computer science & engineering are invited to deliver guest/extension lectures on the latest trends and developments. These lectures help the students to interact with the industry people and enhance their knowledge in the subject domain. The students are exposed to industry expectations as a professional to serve the societal needs. Hence, it helps in the attainment of PO6, PO7 and PO12.

Mth8 – Workshops

In addition to the book sphere, the students are also given inputs like Workshops, at least once each semester, so as to keep them accustomed to latest technical spheres of engineering streams. These workshops encompass a wide range of topics and objectives, lending a hand to both, direct as well as secondary teaching aids.

Table-2.1a: Provides the course and their delivery methods with linkages to POs.

Delivery Methods	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Mth1 – Lectures	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Mth2 – Tutorial Sessions		Y	Y	Y	Y	Y	Y					
Mth3 – Laboratory Sitings		Y	Y	Y	Y		Y					
Mth4 – Quiz/Assignment	Y	Y	Y	Y	Y	Y	Y				Y	
Mth5 – Presentations								Y	Y	Y	Y	Y
Mth6 – Research Literature	Y					Y	Y					Y
Mth7 – Guest/Extension			Y	Y	Y						Y	Y
Mth8 – Workshops	Y	Y									Y	Y

Table-2.2b: Course delivery methods and linkage to POs.

Mathematics and Basic Science	Mathematics I & II	Mth1, Mth2, Mth4	PO1, PO2,PO4,PO11
	Physics I & II	Mth1, Mth2, Mth4	PO1, PO2, PO4,PO12
	Chemistry I & II	Mth1, Mth2, Mth4	PO1, PO2, PO4,PO7,PO12
	Chemistry lab I & II	Mth1, Mth3	PO1, PO2
	Physics lab I & II	Mth1, Mth3	PO1, PO2
Engineering Sciences	Engineering Drawing	Mth1, Mth3, Mth7	PO1, PO2,PO7,PO11,PO12
	Machine Drawing	Mth1, Mth3,	PO1, PO2,PO7
	Electronics I plus Lab	Mth1, Mth3 Mth2,Mth4	PO1, PO2,PO7
	Basic Electrical	Mth1, Mth2,Mth4	PO1, PO2,PO7
	Engineering Mechanics	Mth1, Mth3,	PO1, PO2,PO11
Humanities and Social Sciences	Humanities I & II	Mth1, Mth5,	PO1, PO8, PO9, PO11, PO10
	Self-awareness and ethics	Mth1, Mth5	PO1, PO8, PO9,PO11,PO10,PO12
	Basic management principles	Mth1, Mth5	PO1, PO8, PO9,PO11, PO10, PO12
	Introduction to Chemical Eng.	Mth1, Mth2, Mth5	

Professional Core	Material and Energy Balance	Mth1, Mth2	
	Process Fluid Mechanics	Mth1, Mth2, Mth5	PO1, PO2 , PO3, PO7
	Thermodynamics and Chemical Kinetics	Mth1, Mth2	PO1, PO2 , PO3, PO4
	Chemical Eng. Thermodynamics	Mth1, Mth2	PO1, PO2 , PO4
	Heat Transfer	Mth1, Mth2, Mth4	PO1, PO2 , PO3, PO4, PO6, PO7
	Mechanical Operations	Mth1, Mth2, Mth7	PO1, PO2 , PO3, PO5, PO6, PO7
	Fluid Mechanical and Mechanical Operation Lab.	Mth3, Mth1	PO1, PO2 , PO3, PO4, PO6, PO11, PO12
	Process Equipment design –I	Mth1, Mth2, Mth4	PO1, PO2 , PO3, PO4,PO6
	Chemical Reaction Eng.	Mth1, Mth2, Mth4	PO1, PO2,PO3 , PO4, PO5, PO6, PO7
	Material Science & Technology	Mth1, Mth2, Mth4	PO1, PO2 , PO4, PO6, PO7,
	Chemical Technology	Mth1, Mth5, Mth7	PO1, PO3 , PO5, PO6, PO7, PO12
	Mass Transfer-I	Mth1, Mth2, Mth4	PO1, PO2 , PO3, PO4, PO5, PO12
	Heat Transfer Lab	Mth3, Mth1	PO1, PO2 , PO3, PO4, PO6, PO11, PO12
	Process Equipment Design-II	Mth1, Mth2, Mth4	PO1, PO2 , PO3, PO4,PO6
	Mass Transfer-II	Mth1, Mth2, Mth4	PO1, PO2 , PO3, PO4, PO5
	Chemical Technology-II	Mth1, Mth5, Mth7	PO1, PO3 , PO5, PO6, PO7, PO12
	Energy Eng. Lab	Mth3, Mth1	PO1, PO2 , PO3, PO4, PO6, PO11, PO12
	Energy Eng.	Mth1, Mth2, Mth5, Mth8	PO1, PO2 , PO3, PO6,PO7
	Process Instrumentation	Mth1, Mth2, Mth5	PO1, PO2 , PO3, PO6
	Transport Phenomenon	Mth1, Mth2, Mth4	PO1, PO2 , PO3, PO4,PO5,PO6,PO12
Thermodynamics & Reaction Eng. Lab	Mth3, Mth1	PO1, PO2 , PO3, PO4, PO6, PO11, PO12	

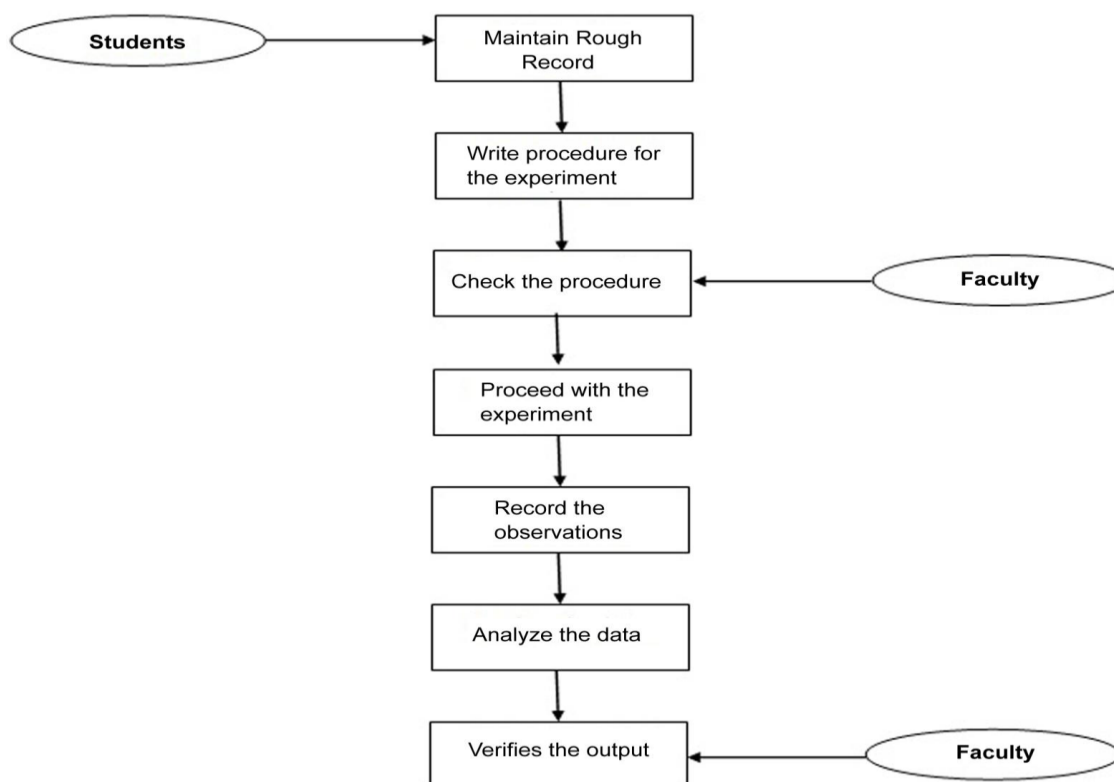
	Industrial Training & Presentation	Mth5, Mth6	PO1. PO2.PO9,PO10,P012
	Chemical Process Safety	Mth1, Mth2, Mth8	PO1, PO2 , PO3, PO4,PO5
	Process Dynamics & Control	Mth1, Mth2, Mth4	PO1, PO2 , PO3, PO4,PO5,PO6,PO7
	Process Dynamics & Control Lab	Mth3, Mth1	PO1, PO2 , PO3, PO4, PO6, PO11, PO12
	Process Economics & Plant Design	Mth1, Mth2, Mth4, Mth5	PO1, PO2 , PO3, PO4,PO6,PO11,PO12
	Biochemical Eng.	Mth1, Mth2	PO1, PO2 , PO3, PO4,PO5, PO6,PO7,PO8,PO11,PO12
	Mass transfer lab	Mth3, Mth1	PO1, PO2 , PO3, PO4, PO6, PO11, PO12
	Bio resource Technology	Mth1, Mth2	PO1, PO2 , PO3, PO4,PO5, PO6, PO7,PO8,PO11,PO12
	Biochemical Eng. Lab	Mth3, Mth1	PO1, PO2 , PO3, PO4,PO5, PO9,PO7,PO8,PO11,PO12
	Modelling & Simulation in Chemical Eng.	Mth1, Mth2, Mth3	PO1, PO2 , PO3, PO4,PO5,PO6,PO12
	Industrial Pollution Abatement	Mth1, Mth2, Mth8	PO1, PO2, PO3,PO4, PO5, PO6, PO7
Computing	Computer Science Programming I, II	Mth1, Mth4, Mth4, Mth8	PO1, PO2, PO12
	Computer Science Programming I, II Lab	Mth1, Mth3	PO1, PO2, PO12
Projects/Training/ Seminar	Major Project	Mth1, Mth3 Mth5, Mth6, Mth7, Mth8	PO1, PO2, PO4, PO5, PO6, PO7, PO9, PO10, PO11, PO12
	Pre-Project/Viva	Mth3 Mth5, Mth4, Mth6, Mth8	PO1, PO2, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12
	Industrial Training	Mth4, Mth5	PO1, PO2, PO9, PO10, PO12
	Seminar	Mth4, Mth5	PO1,PO2, PO10, PO12

E. Conduct of Experiments (Observations in Lab) (2)

- I. A lab manual is maintained in each laboratory.
- II. All the experiments in the prescribed syllabus is followed and completed by the end of the semester.
- III. The objective and the procedure for all experiments in the prescribed syllabus is available in the lab manual.

F. Continuous assessment in the laboratory (3)

- i. Each student should maintain a rough record to record the details of work done in each laboratory session.
- ii. The students are directed to write the step by step procedure to achieve a solution for the given experiment.
- iii. The faculty-in-charge will check the procedure and then students can proceed with doing the experiment.
- iv. Students should record the observations in the rough record while doing the experiment
- v. Students may also analyze the data to plot graph or other related work.
- vi. The final output will be verified by the faculty-in-charge.
- vii. Students should add the details of the experiments done in the laboratory to the prescribed record book. Process for conduct of experiment, record of observations and analysis of data have been given in Figure-B.2.2.

**Figure-B.2.2**

The Laboratories are evaluated by the faculties for 100 marks based on their performance during the semester, attendance, internal test and record submission.

The distribution of marks for laboratory subjects has been reflected in Table-B.2.2c.

Table-B.2.2c

Attendance	Practical Note Book	Practical Examination	Viva	Total	Grade
10	40	30	20	100

G. Student feedback of teaching-learning process and actions taken (2)

Feedback collected for all courses: Yes

Process:

- At the end of each semester exam, feedback forms on each subjects are collected.
- Student Feedback is valuable for identifying areas for instructional improvement because simple changes can help motivate students and enhance student learning.
- The questionnaire is prepared covering all areas of faculty's including ability of teaching, quality of learning, class-handling attitude, acceptance authority by students, etc. where students are asked to record their opinion directly.
- If the overall feedback falls below 80 % corrective actions are taken.
- The Head of the Department will provide some suggestions for improvement based on the feedback if required.

Note: Percentage of students participating: 95-100%

COURSE APPRAISAL/FEEDBACK FORM

Course No & Title

Date:

Instructor's Name

Sem:

Please Tick In The Appropriate Box

S. No.	Course Organisation	Range	5	4	3	2	1	
1	Were the objectives and course plan clearly specified?	Very clearly excellent						Very poorly
2	Was the course coverage and depth adequate?	Excellent						Very poor
3	Did the topics provide any new knowledge?	Mostly						Hardly
4	Was the prescribed study material readily available?	Very readily						Not available at all
Presentation and interaction								
5	How were the lectures in terms of clarity and presentation of the fundamental concepts?	Excellent						Poor
6	Rate the audibility and articulation of the instructors or'2al presentation	Excellent						Poor
7	Did the instructor encourage think logically and objectively?	Very much						Never
8	Was the instructor's response to the questions asked in the class satisfactory?	Very much						Not at all
9	Rate the instructor's attitude towards teaching of this course.	Enthusiastic						Indifferent
10	Were the classes held regularly and on time?	Always						Never
11	Rate the overall quality of teaching in this course	Outstanding						poor
Evaluation								
12	Did the examinations reflect the courses plan?	Very closely						Poorly
13	Were the examinations of appropriate level and length?	Always						Rarely
14	Were the answer script promptly checked and returned?	Always						Rarely
15	Was the grading fair and transparent?	Mostly						Rarely
16	Did the midterm evaluation (minor 1 &II) and feedback improve the understanding of this course?	Always						Rarely

2.2.2 Quality of internal semester Question papers, Assignments and Evaluation (15)

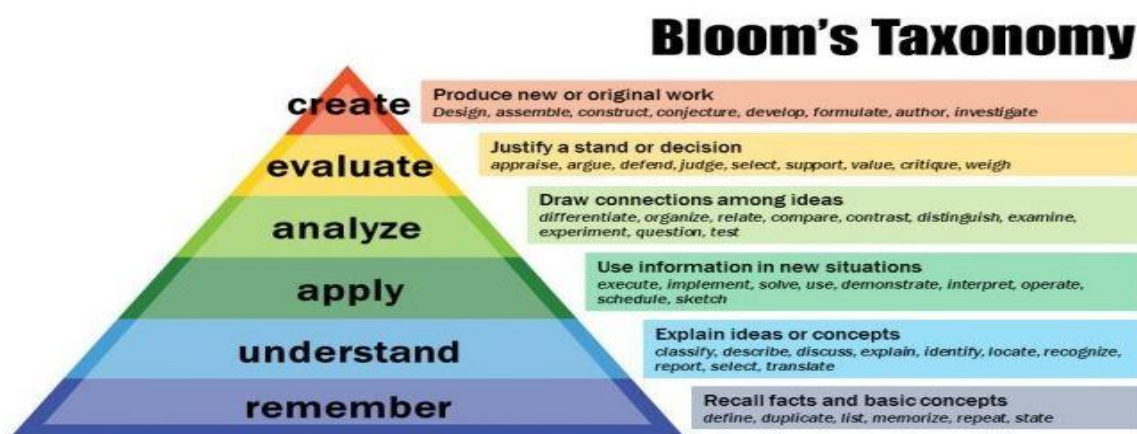
A. Process to ensure the quality of internal semester question papers:

Claimed 15

- All tests are conducted in strict adherence to the academic calendar.
- The question papers for each subject are set in such a way that it maps to the Course Outcomes of the respective subject.
- The question paper will be verified by the Head of the Department and may accept with or without modifications.
- The questions asked in each subject are categorized to knowledge, comprehension, application, analysis, evaluation and synthesis level.
- All course outcomes will be achieved through the tests conducted in each semester.

B. Process to ensure questions from outcomes/learning level perspective.

- For each subject, a tentative question list is prepared according to the COs.
- While setting the question paper, previous institute exam papers of at least three years are taken into consideration to avoid repetition of questions.
- While setting a question papers an attempt is made to follow Bloom's taxonomy. The questions are prepared according to the level of toughness (viz., analyzing the problems, implementation of modern tools, formulating the problems etc).



The questions asked are of three categories:

- Approximately one third of the questions is of elementary level and can be answered by an average student, which require fundamentals of the course.
- Approximate one third of the questions need analysis and use of content covered as per syllabus.
- Remaining one third of the questions are based on advanced level. The solution of these questions/problems requires certain amount of critical thinking, analysis and knowledge.

C. Evidence of COs coverage in class test / mid-term tests

- All class test and mid-term test papers cover all topics relevant to COs.
- A record of all class tests / mid-term tests / end semester test is maintained and submitted to the HOD for his perusal to ensure that all the topics are covered in these exams.
- HOD/faculty members ensure that the questions asked previously (midterm) are not repeated so that major portions of COs are covered.

- All the faculty members are compulsorily required to maintain a question paper file (soft and hard copy) where all the question papers are saved so that question paper for end term is set without repeating of any question from midterm. This scheme helps to prevent repetition of questions and coverage of maximum COs.

D. Assignments

The purpose of writing assignments is to help each student develop research and communication skills; specifically, technical communication skills needed to successfully complete the Engineering Curriculum.

- Writing assignments is a flexible means of demonstrating learning as well as a method of exploring one's thinking to stimulate learning.
- A minimum of two assignments will be given for each subject.
- The assignment given could be theoretical or a practical implementation.

Evaluation process: course work

Evaluation Process- Class test/ mid-term test schedules and procedures for systematic evaluation, internal assessments.

Assessment is based upon the efficacy process being followed.

Evaluation process and test schedules are all followed and monitored in accordance to the guidelines of academic section of the Institute as follows.

Minor-1	Minor-2	Assignment	End semester exam	Grand total
20	20	10	50	100

But from academic year 2017 Minor-1 and Minor-2 has been combined. A new scheme is as follows:

Mid term	Assignment	End semester exam	Grand total
30	10	60	100

Grading criteria (Absolute Values)

A+	A	B+	B	C+	C	D
>90	81-90	71-80	61-70	51-60	40-50	<40

Seminar and Presentation Evaluation

Assessment is based upon the methodology being followed and its effectiveness

A group of teachers along with UG coordinator evaluate the performance of students based on their presentation and viva-voce examination.

S. No.	Name	Seminar Report	Attendance	Viva and Presentation	Total Marks	Grade
		40	10	50	100	

Mechanism for addressing evaluation related grievances

Assessment is based upon the efficiency of the mechanism being followed.

- A transparent evaluation mechanism is followed as the answer sheets of mid-term examinations are shown to the students one week after the exam (date as mentioned in the institute academic calendar).
- The grades are displayed on the notice board prior to its finalization and submission to the controller of examination.

2.2.3 Quality of student projects (20)

Claimed 20

The process for project identification by students, guide allotment, continuous monitoring and evaluation are elaborated as:

2.2.3.1 Identification of projects and allocation methodology to Faculty Members (2)

- Students are divided into groups comprises of 4-5 students.
- Students are directed to submit the abstract of project proposal to the project coordinator.
- The project coordinator evaluates it and if the topic is relevant, forwards it to the evaluation committee.
- If abstract is approved, project area is identified and faculty having specialization in that particular area is assigned to the group of students.

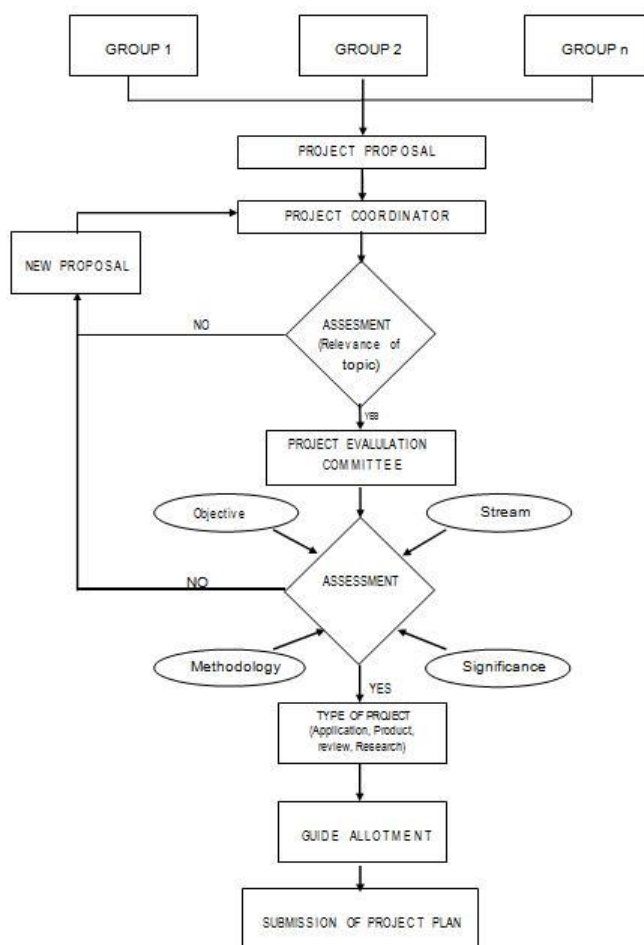


Figure-B.2.2.3.1

2.2.3.2 Project Related to Industry (3)

Students are directed to maintain a project diary to record the activities they do in relation to the project. Students should also record the details of their interaction with the guide in the project diary.

1.	Brand analysis of various cements in the state of J&K (India)	Good	Cement Industry	<ul style="list-style-type: none"> Quality assessment of various brands of cement (OPC-43 grade) available in J&K. Quality assessment facility for cement, developed in the lab (analytical).
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2.2.3.3 Some of the Good Projects

Some of the good projects carried out by B.Tech. students are given in the following **Table-B.2.2.3.3.**

S. No.	Project Title	Project Level	Area	Contribution	Relevance to POs
1.	Preparation and characterization of acetalized poly (vinyl alcohol) based hybrid organic-inorganic Nano composite polymer membrane embedded with SiO ₂ nanoparticles	Good	Membrane science	<ul style="list-style-type: none"> Acetalized PVA based membrane incorporated with silica nano particles was successfully prepared. The acetalization of the membrane and incorporation of silica promises better membrane stabilities. Such membranes could be industrially very useful for the separation of the effluents like surfactants and dyes in high temperature and variable PH feeds. 	PO1, PO2, PO6, PO7, PO9, PO10, PO12
2.	Fouling of cation exchange membrane	Good	Ion Exchange Membranes	<ul style="list-style-type: none"> Fouled membranes such as selemion CMV and Ralex CMH membranes were treated with acid (HCl and H₂SO₄) Results showed that right conc of HCl serves good agent for removing foulants from the membrane. 	PO1, PO2, PO5, PO6, PO7, PO9, PO10, PO12

3.	Development of ion exchange membranes ZrW/PVA and SnP/PVA for Direct methanol fuel cell.	Good	Membrane and Material	<ul style="list-style-type: none"> • Cation exchange membranes were successfully prepared by incorporating Inorganic material into polymeric matrix. • Electrochemical properties such as transport number, ion exchange capacity and proton conductivity were determined. 	PO1, PO2, PO6, PO7, PO9, PO10, PO12
4.	Production of bio diesel from sun flower seeds	Good	Energy	<ul style="list-style-type: none"> • Physicochemical characterization may be useful in extraction of bio diesel from the sunflower seed. 	PO1, PO2, PO6, PO7, PO9, PO10, PO12
5.	Modelling and simulation of sorbose production by fermentation.	Good	Biochemical	<ul style="list-style-type: none"> • Identification of the mathematical representation of the process which may be helpful for bioprocess development on sorbose production by fermentation. 	PO1, PO2, PO5, PO6, PO7, PO9, PO10, PO12
6.	Modelling of pyrolysis of biomass	Good	Biomass	<ul style="list-style-type: none"> • Characterization techniques studied. • Kinetic parameters evaluation through various models. 	PO1, PO2, PO5, PO6, PO7, PO9, PO10, PO12
7.	Characterization of locally available biomass	Good	Energy	<ul style="list-style-type: none"> • Characterization of biomass may be helpful in utilization of the locally available biomass wastes such as walnut shells for energy generation. 	PO1, PO2, PO6, PO7, PO9, PO10, PO12
8.	Brand analysis of various cements in the state of J&K (India)	Good	Environmental	<ul style="list-style-type: none"> • Quality assessment of various brands of cement (OPC-43 grade) available in J&K. • Quality assessment facility for cement, developed in the lab (analytical). 	PO1, PO2, PO6, PO7, PO9, PO10, PO12

9.	Power law fluid flow and heat transfer around a circular cylinder in laminar flow regime.	Good	Computational fluid	<ul style="list-style-type: none"> Covers wall effect on the steady forced convection heat transfer characteristics of incompressible power law fluids from an isothermal circular cylinder. All engineering parameters like drag coefficients, Nusselt number etc. have been studied. 	PO1, PO2, PO4, PO6, PO9, PO10, PO12
10.	Isobaric vapor liquid equilibrium data of binary mixture	Good	Multipha	<ul style="list-style-type: none"> Data was generated for o-xylene and p-xylene that will be helpful for the separation of O-xylene and p-xylene. 	PO1, PO2, PO4, PO6, PO9, PO10, PO12
11.	Water pollution modelling of dal lake using QUAL2K	Good	Environmental engineering	<ul style="list-style-type: none"> QUAL2K model for river and water quality was applied to predict the water quality and environmental capacity of Dal Lake. Results showed that NH₃-N, TN and TP pollution loads of river needs to be reduced by certain amount (percentage) to satisfy the water quality objectives. 	PO1, PO2, PO4, PO5, PO6, PO7, PO9, PO10, PO12
12.	Enhancement of heat transfer in helical coil heat transfer using nano fluids	Good	Heat transfer	<ul style="list-style-type: none"> Heat transfer is enhanced using nano fluids in the helical coil heat exchanger. Various parameters like Nusselt number, friction factor, pressure drop characteristics and performance was standard 	PO1, PO2, PO4, PO6, PO9, PO10, PO12
13.	Hydrothermal carbonization of Potamogeton Crispus into solid fuel	Good	Energy	<ul style="list-style-type: none"> Weed from Dal Lake was subjected to high thermal carbonization to form solid biofuel known as hydro char. The biofuel has huge potential to serve as an alternative fuel. 	PO1, PO2, PO4, PO6, PO7, PO9, PO10, PO12

Table-B.2.2.3.3.

2.2.3.4 Process of Evaluation

- The Departmental project evaluation committee meets twice in 7th and 8th semesters to assess the progress of the projects.
- The projects are evaluated by the committee according to the following scheme.
- The departmental Project evaluation committee and the project guide together will analyze the nature of the project during the different stages of evaluation and make sure that the work is environment friendly, ensures safety, ethics and is cost effective.
- Students, with the help of project guide should publish their work in relevant journals.

Final Review of the Project

Project and Project Guide	Names of students involved in the Project	Enrollment number	Project guide (80)	Project Report (30)			Viva (90)			Total (200)	Percentage (%)	Grade
				Internal Examiner (10)	External Examiner (10)	HOD (10)	Internal Examiner (30)	External Examiner (30)	HOD (30)			

2.2.3.5 Process to assess Individual and Team Performance (3)

As has been stated above the students remain in constant touch with the supervisor. During the interaction the supervisors enquires from the group members about the progress of the work. This process helps the supervisor to determine the performance of the individual and the team. The students are awarded marks during this interaction also by the supervisor so that none of the students lags behind and develop a quality to work individually and with the team.

2.2.3.6 Quality of Completed Projects/Working Prototypes (5)

List of good major projects for the academic years (2015-17) is shown:

2.2.3.7 Evidences of Papers Published /Awards Received by Projects etc. (3)

S. No.	Title of the Project	Students	Paper	Guide
1.	TiO ₂ Photocatalytic Degradation of Methylene Blue Dye by Utilizing Ultra Violet Light Emitting Diodes as Radiation Source	Akshey Modi, Anjan Raina, and Deep Priya Kapoor	Adv. Sci. Lett. 22, 834-838 (2016)	Dr. M.A Rather
2.	Synthesis of Ag doped TiO ₂ nano-particles and study of their efficacy towards degradation of Rhodamine -B dye	Rahul Goel, Saurabh Singh, Hemanshi Sarangal and Rahaul Panwar	Intl. Conf. on Nanotechnology for Better Living 2016 Vol. 3, No. 1, p. 338	Dr. M.A Rather

2.2.4 Initiatives related to industry interaction (10)

Claimed 8

Industry Institute interaction continuously supply input to better teaching-learning processes, create awareness among the students about the environment of industry, provide real practical knowledge to students and provides self-confidence for students to become an entrepreneur.

2.2.4.1 Industry supported laboratories (2)

There is no lab supported by industry.

2.2.4.2 Industry involvement in the program design and Curriculum. (3)

In light of vision and mission of the department industry involvement in the program design and curriculum are based on following surveys-

1. Alumni survey
2. Students survey

Refer to 2.1.4.2.

2.2.4.3 Industry involvement in partial delivery of any regular courses for students. (3)

To promote good Institute-Industry Interaction for our Institute, following schemes have been undertaken.

- Providing industrial training and other inputs to teaching-learning processes so as to develop awareness about the job functions in the industry among students.
- Arranging visits for students to various industries.
- Engineers from industry to deliver lectures.
- Organizing workshops by Industry/Institute Experts summarized in Table-B. 2.2.4.3.

Sl. No.	Venue	Domain Area of Curriculum Covered	Topic	Resource Person	Designation
1.	Room Tech Hi-	Environmental engineering	Environmental issues	Mr. Kaisar Parvaiz	General manager (J&K cement industry)
2.	Hi-Tech Room	Energy and Environmental Eng.	Microalgae based industrial effluent treatment and restoration of polluted water	Dr. V. Sivasubramanian	Director, PERC, Chennai
3.	Room Tech Hi-	Fuels	Alternative fuels- future perspectives	Dr. V.C. Srivastava	IIT Roorkee (Chemical Eng.)
4.	Room Tech Hi-	Fuels	Plasma Technology for Biomass	Dr. Vimal Kumar	IIT Roorkee (Chemical Eng.)
5.	Room Tech Hi-	Environmental	Dal is calling	Dr. Shafiq Pir	Technical Officer LAWDA
6.	h Tec Hi-	Energy	Bio Diesel	Dr. Anantharanman	NIT Trichy
7.	Room Tech Hi-	Refinery	Petroleum Refinery	Er. Junaid Ashraf Shah	Production Engr. IOCL Haldia Refinery

Table-B. 2.2.4.3

2.2.4.3 Impact analysis of industry institute interaction and actions taken thereof. (2)

- The effectiveness of this practice can be gauged by the great response of the participants for the workshops

- The feedback is obtained from the students at the end of 8th semester to assess the achievement of the objectives of the industrial training/ summer training/internship/ industrial tour.

2.2.5 Initiatives related to industry internship/summer training (10)

Claimed 10

2.2.5.1 Industrial training/tours for students (2)

The faculties of the Department constantly try to interact with industries like BARC, JK Cements and Khyber Cements Khonmoh etc. for industrial visit.

2.2.5.2 Industrial /internship /summer training of more than two weeks and post training Assessment. (3)

The main objective of interaction between of industry and institute is to improve the quality technical education adequately to meet the needs of the industry and economy. Internships offer students a practical experience in the industry relating to the field of study. This experience is valuable to students as a means of allowing them to experience how their studies are applied to real world. The bridge between industry and academic institute prepare engineering students for jobs in multinational companies by exposing them to new technology and engineering methodologies.

Some of the interactions are listed below:

- All the students have to undergo a six week industrial training after 6th semester.

Details of Industrial Training attended by Students:

2015-2019 Batch						
Sl. No.	Date	Name of Student	Area of Training	Name of Industry	Duration	Number of Beneficiaries
1	18.12.2017	Nikhil Sangwal	Petroleum Industry	ONGC, Surat	30 days	14
		Syed Faizan				
		Asrar Rahmat				
		Naveed Ahsan				
		Mir Shifayat				
		Vishnu				
		Zahid Akbar				
		Aadil Hamid				
		Anshul Rasyotra				
		Lalit Yadav				
		Kunnal Gupta				
		Dawood Rashid				
		Midhat Yassin				
		Syed Humayoun				
2	20.12.2017	Deepak Pingal	Petroleum Industry	ONGC, Gujarat	25 days	1

3	18.01.2017	Maida Lateef	Cement Industry	Jammu & Kashmir Cement Industry	30 days	4
		Amina				
		Sabbah Guljan				
		Aaqib Ashraf				
4	01.12.2017	Shriyansh	Petroleum Industry	IOCL Barauni Refinery	28 days	2
		Rahul Kumar				
5	15.12.2017	Abhishek	Petroleum Industry	IOCL Barauni Refinery	29 days	3
		Vishnu Kumar				
		Ahmad Ali				
6	04.12.2017	Anish Singh	Petroleum Industry (R&D)	ONGC, Ahmedabad	26 days	4
		Shubham Malav				
		Amit Pratap				
		Pashupat Modgil				
7	11.12.2017	Hafeez Hackla	Petroleum Industry	ONGC, Panvel	32 days	3
		Aamir Suhail				
		Lalit Basotra				
8.	16.1.2018	Pankaj Sonkar	Academic Institute	IIT, Kanpur	40 days	1
9.	1.12.2018	Aman Kundal	Fertilizer	National Fertilizer Limited, Punjab	30 days	5
		Nishant Sharma				
		Abdul Muqsit				
		Vineet Kumar				
		Manik Lamba				
10.	12.1.2017	Alok Kumar Vishnoi	Energy	BARC Mumbai	57 days	1
11.	2.1.2018	Pradyuman Singh	Uflex	Uflex	28 days	1
12.	19.12.2017	Dheeraj Sharma	Energy	ONGC, Dehradun	40 days	1
		Rishi Pal				
		Pankaj Kumar				
13.		Kapil Verma	Energy	ONGC, Jaipur.	42 days	3
		Gaurav Meena				
		Ravi Kumar				
14.	18.02.2018	Vishal Panhotra	Research	Jammu Uni	30 days	1
15.	08.12.2017	Tanisha Mahajan	Research	IIT Delhi	62 days	1
16.	1.12.2017	Vivek Raj	Energy	BARC Mumbai	90 days	2
		Nikhil Kumar				
17.	09.12.2017	Hindal Mustafa	Cement Industry	J&K Cement Industry	30 days	3
		Abdul Bari				
		Aaqib Mushtaq				

18.	11.12.2017	Keshav Kalsi	Petroleum Industry	ONGC, Mumbai	31 days	3
		Shubham				
		Upkar Kesar				
19.	15.1.2017	Abhishek Thapa	Paint Industry	Berger	32 days	1
20.	11.12.2017	Ruqaiyah Khursheed	Food and Beverages	Fil Industries	31 days	1

Table-2.2.5.2a

2014-2018 Batch					
Date	Name of Student	Area of Training	Name of Industry	Duration	No. of Beneficiaries
12.12.2016	Arshid Saif	Design of heat exchanger to cool wash oil in benzoyl recovery plant.	SAIL, Bhilai	30 days	13
	Danish Shah				
	Umer Ali				
	Irfan Ahmed				
	Irfan Ganie				
	Rochak Acharya				
	Sajid Ansari				
	Ujwal Dhakad				
	Mahesh Kumar Jat				
	Shubham Kardam				
	Ram Chandra				
	Deepak Nagar				
Junaid Gul					
26.11.2016	Basit Nabi Khan	Quality control of cement	JK Cements Khrew	30 days	2
	Toyiba				
17.11.16	Om Singh	Optical Emission Spectrometer	Grey Iron Foundary, Jabalpur	15 days	3
	Pankaj Choudhary				
	Surender Mahavar				
	Rahul Chandoriya				
	Himanshu Gupta				
	Dhruval Sunda				
	Sachin Kumar				
Sattavan					
10.02.2017	Umang Duggal	Petroleum Industry	ONGC, Delhi	30 days	1
12.12.2016	Akshay Dahiya	Design Of Heat Exchanger For Efficient Cooling Of Wash Oil	SAIL, Bhilai	30 days	5
	Devnath Baragada				
	Rakesh Kumar				
	Swaraj Meena				
	B. Sarvan Kumar				
1.11.2016	Aasim wani	Predicting	One	90 days	1

		Material Stability Using Machine Learning	Concern, Palo Alto		
02.11.2016	Varun Sharma	Formulation and Production Of Pesticides & Industrial Safety	Saraswati Agro Chemicals Private limited Jammu	52 days	6
	Parshant Rayaana				
	Nitish Verma				
	Akhilesh Magotra				
	Shahid				
	Shamsuddin				
26.12.16	Ankita Chaudhary	Evaluation of ion exchange resin	Defence Research Development Organization, Jodhpur, Rajasthan	38 days	1
29.12.2016	Zumair khan	General Plant Overview	SAIL, Rourkela Steel Plant	30 days	5
	Mohammad Basit				
	Mahrukh Arif Mir				
	Naif Bilal				
	Payal Singh				
15.12.16	Mayank Chopra	Biotechnology (Drilling fluid)	ONGC, Dehradun	62 days	3
	Goswami Kundan				
12.11.2016	Bhumana Teressa Jaya Bhanu	Alternative fuels in cement industry and plant training	JSW , Nandyal	30 days	1
21.11.2016	Mehak Jan	General Plant Overview	ONGC, Hazira Plant, Surat.	30 days	5
	Adfa				
	Farhat Sajad				
	Jhanvi Gupta				
	Diksha Bhagat				
21.12.2016	Raymal singh	Water Chemical Treatment	SAIL,	30 days	2
	Debhyoti				
10.12.2016	Hardeep Kumar	Designing of Distillation Column	DRDO, Delhi	30 days	1
1.12.2016	Sourav	Pesticides Formulation	Dhanuka Agrotech Limited Udampur, J&K	30 days	2
	Adhitya Kapil				

Table-2.2.5.2b

2.2.5.3 Impact Analysis of Industrial Training (2)

The students are provided with the feedback forms to rate their industrial training/internship. It is done to identify the level of achievement. The feedback is obtained from the students at the end of 8th semester to assess the achievement of the objectives of the industrial training/ summer training/internship/ industrial tour.

Feedback Form to Assess the Industrial Training

Name of the student:

Enrolment No. :

1. Rank the departmental initiative about the seriousness regarding industrial training etc.

Excellent	<input type="checkbox"/>	Good	<input type="checkbox"/>	Average	<input type="checkbox"/>	Fair	<input type="checkbox"/>	Poor	<input type="checkbox"/>
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2. Did the faculty help you in choosing the proper industry

Excellent	<input type="checkbox"/>	Good	<input type="checkbox"/>	Average	<input type="checkbox"/>	Fair	<input type="checkbox"/>	Poor	<input type="checkbox"/>
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3. Rank the exposure to the practical working environment

Excellent	<input type="checkbox"/>	Good	<input type="checkbox"/>	Average	<input type="checkbox"/>	Fair	<input type="checkbox"/>	Poor	<input type="checkbox"/>
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4. Did you become aware about the practical aspects in the industry

Excellent	<input type="checkbox"/>	Good	<input type="checkbox"/>	Average	<input type="checkbox"/>	Fair	<input type="checkbox"/>	Poor	<input type="checkbox"/>
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5. Did you notice some interesting facts and new technologies adopted in the industry

Excellent	<input type="checkbox"/>	Good	<input type="checkbox"/>	Average	<input type="checkbox"/>	Fair	<input type="checkbox"/>	Poor	<input type="checkbox"/>
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6. Would you suggest your juniors to undergo training there

Excellent	<input type="checkbox"/>	Good	<input type="checkbox"/>	Average	<input type="checkbox"/>	Fair	<input type="checkbox"/>	Poor	<input type="checkbox"/>
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7. Do you want to join this industry as permanent employee

Excellent	<input type="checkbox"/>	Good	<input type="checkbox"/>	Average	<input type="checkbox"/>	Fair	<input type="checkbox"/>	Poor	<input type="checkbox"/>
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2.2.5.4 Student feedback on Initiative (3)

- It is mandatory for all the students who do their industrial training to give feedback on this initiative.

Sl. No.	Participating Student	Initiative Satisfactory	Initiative Unsatisfactory	Comments
1.	Nikhil Sangwal	Yes	No	
2.	Syed Faizan	Yes	No	
3.	Asrar Rahmat	Yes	No	
4.	Naveed Ahsan	Yes	No	
5.	Mir Shifayat	Yes	No	
6.	Vishnu	Yes	No	
7.	Zahid Akbar	Yes	No	
8.	Aadil Hamid	Yes	No	
9.	Anshul Rasyotra	Yes	No	
10.	Lalit Yadav	Yes	No	
11.	Kunal Gupta	Yes	No	
12.	Dawood Rashid	Yes	No	
13.	Midhat Yassin	Yes	No	
14.	Syed Humayoun	Yes	No	
15.	Deepak Pingal	Yes	No	
16.	Maida Lateef	Yes	No	
17.	Amina	Yes	No	
18.	Sabbah Guljan	Yes	No	
19.	Shriyansh	Yes	No	
20.	Rahul Kumar	Yes	No	
21.	Abhishek	Yes	No	
22.	Vishnu Kumar	Yes	No	
23.	Ahmad Ali	Yes	No	
24.	Anish Singh	Yes	No	
25.	Shubham Malav	Yes	No	
26.	Amit Pratap	Yes	No	
27.	Pashupat Modgil	Yes	No	
28.	Hafeez Hackla	Yes	No	
29.	Aamir Suhail	Yes	No	
30.	Lalit Basotra	Yes	No	
31.	Pankaj Sonkar	Yes	No	
32.	Aman Kundal	Yes	No	
33.	Nishant Sharma	Yes	No	
34.	Abdul Muqsit	Yes	No	
35.	Vineet Kumar	Yes	No	
36.	Manik Lamba	Yes	No	

37.	Alok Kumar Vishnoi	Yes	No	
38.	Pradyumansingh	Yes	No	
39.	Dheeraj Sharma	Yes	No	
40.	Rishi Pal	Yes	No	
41.	Pankaj Kumar	Yes	No	
42.	Kapil Verma	Yes	No	
43.	Gaurav Meena	Yes	No	
44.	Ravi Kumar	Yes	No	
45.	Vishal Panhotra	Yes	No	
46.	Tanisha Mahajan	Yes	No	
47.	Vivek Raj	Yes	No	
48.	Nikhil Kumar	Yes	No	
49.	Hindal Mustafa	Yes	No	
50.	Abdul Bari	Yes	No	
51.	Aaqib Mushtaq	Yes	No	
52.	Keshav Kalsi	Yes	No	
53.	Shubham	Yes	No	
54.	Upkar Kesar	Yes	No	

Table-2.2.5.4

Criterion 3	Course Outcomes and Program Outcomes	175
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Marks Claimed	175
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3.1. Establish the correlation between the courses and the Program Outcomes (POs) & Program Specific Outcomes (PSOs) (25)

Claimed 25

The programme outcomes are achieved through curriculum that offers a number of mandatory courses as well as elective courses. Each course has defined course outcomes that are mapped to the programme outcomes and a set of performance criteria that are used to provide quantitative measurement of how well course outcomes are achieved.

The Course Outcomes are mapped to the programme Outcomes with three levels of attainment, viz.

- Strongly related, having a weightage of 3
- Moderately related, having a weightage of 2
- Related, having a weightage of 1

Table-B.3.1a provides the details of various courses and their mapping with the Program Outcomes (POs).

Program Articulation Matrix

Course Title	Course name	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
ChBC-31	Introduction to Chemical Engg	2	1.8	1.7	-	2	3	3	2	-	-	1	2
ChBC-32	Material and Energy Balance	2	1.8	1.7	-	2	3	3	2	-	-	1	2
ChBC-33	Process Fluid Mechanics	2.8	2.5	-	-	-	-	1.7	-	-	-	-	-
ChBC-34	Thermodynamics and Chemical Kinetics	2.7	1.7	1.5	-	-	-	-	-	-	-	-	-
ChBC-41	Chemical Eng. Thermodynamics	3	2.3	-	1.5	-	-	-	-	-	-	-	-
ChBC-42	Heat Transfer	2	3	3	1	-	1.5	1	-	1	1	-	1
ChBC-43	Mechanical Operations	1.5	2	2.7	-	1.5	2	-	-	-	-	2	-
ChBC-51	Process Equipment Design – I (Mechanical Aspects)	2.3	2.5	1.7	-	-	1.7	-	-	-	-	-	-
ChBC-53	Material Science & Technology	3	1.7	2	1.5	1.5	1	1	0	0	0	0	1
ChBC-54	Chemical Technology – I	3	-	1	-	1	-	1	-	-	-	-	2
ChBC-55	Mass Transfer -I	2.7	2.7	2.5	2.5	1	-	-	-	-	-	-	2.7
ChBC-61	Process Equipment Design -II (Process Aspect)	1.5	1.7	2.8	-	-	-	-	-	-	-	-	-
ChBC-62	Mass Transfer–II	2.7	2.7	2.5	2.5	1	-	-	-	-	-	-	-
ChBC-63	Chemical Technology–II	3	-	1	-	1	-	1	-	-	-	-	2
ChBC-64	Energy Engineering	2.8	2.8	2.3	2.8	1.5	-	3	-	1.5	-	2	2
ChBC-66	Process Instrumentation	2.7	2	1	-	-	2	-	-	-	-	-	-
ChBC-67	Transport Phenomena	2.8	2.3	2	1.5	2	1	-	-	-	-	-	2.8
ChBC-69	Industrial Training & Presentations	1.5	2	3	1	-	2	1	2	2	3	2	-
ChBC-72	Chemical Process Safety	2.7	3.7	2.5	2.5	1	-	-	-	-	-	-	-

ChBC-73	Process Dynamics & Control	2.4	2.2	1.5	1	1.5	2	2	0	0	0	0	0
ChBC-74P	Process Dynamics & Control Laboratory	2.5	1.8	2.3	1	0	2	0	0	0	0	2.3	1
ChBC-75	Process Economics & Plant Design	3	1.8	2.3	1	-	2	-	-	-	-	2.3	1
ChBC-76	Biochemical Engg	3	2.8	2.5	1	3	1	2.7	1	-	-	-	1
ChE-83P	Biochemical Engg Lab	2.5	2	1.5	1	3	-	-	3	3	1	1	1
ChBC-44P	Fluid Mechanics & Mechanical Operations Lab	2.5	1.8	2.3	1	-	2	-	-	-	-	2.3	1
ChBS-41	Seminar	1.7	1.3	-	-	1	2	2	1	-	3	-	-
ChBC-56P	Heat Transfer Lab.	2.5	1.8	2.3	1	-	2	-	-	-	-	2.3	1
ChBC-65P	Energy Eng. Lab.	2.5	1.8	2.3	1	-	2	-	-	-	-	2.3	1
ChBC-68P	Thermodynamics and Reaction Eng. Lab	2.5	1.8	2.3	1	-	2	-	-	-	-	2.3	1
ChBC-69	Industrial Training & Presentations	1.5	2	3	1	0	2	1	2	2	3	2	0
ChBC-77P	Mass Transfer Lab.	2.7	2	3	2	-	-	-	-	2	2	-	-
ChBC-73	Process dynamics and control	2.4	2.2	1.5	1	1.5	2	2	-	-	-	-	-
ChBE-82	Petroleum Technology	3	1		-	1.5	-	1.7	-	-	-	-	2.5

Table-B. 3.1a

Program Articulation Matrix

Course Title	Course name	PSO 1	PSO 2	PSO 3
ChBC-31	Introduction to Chemical Engg	1.9	0.3	1.9
ChBC-32	Material and Energy Balance	1.9	0.3	1.9
ChBC-33	Process Fluid Mechanics	0.6	0	0.6
ChBC-34	Thermodynamics and Chemical Kinetics	0.6	0	0.6
ChBC-41	Chemical Eng. Thermodynamics	0.6	0	0.4
ChBC-42	Heat Transfer	1.3	0.7	1.5
ChBC-43	Mechanical Operations	1.4	0.6	1.5
ChBC-51	Process Equipment Design – I (Mechanical Aspects)	0.9	0	0.7
ChBC-53	Material Science & Technology	1.4	0	1.6
ChBC-54	Chemical Technology – I	0.8	0	0.8
ChBC-55	Mass Transfer 0I	1.3	0	1.6
ChBC-61	Process Equipment Design 0II (Process Aspect)	0.6	0	1.0
ChBC-62	Mass Transfer – II	1.2	0	1.6
ChBC-63	Chemical Technology – II	0.8	0	0.8
ChBC-64	Energy Eng	2.0	1	2.3
ChBC-66	Process Instrumentation	0.9	0	0.5
ChBC-67	Transport Phenomena	1.5	0	1.6
ChBC-69	Industrial Training & Presentations	1.4	2.4	1.4
ChBC-72	Chemical Process Safety	1.2	0	1.7
ChBC-73	Process Dynamics & Control	1.5	0	1.6
ChBC-74P	Process Dynamics & Control Laboratory	1.4	0.6	1.0
ChBC-75	Process Economics & Plant Design	1.4	0.7	1.0

ChBC-76	Biochemical Engg	1.9	0	2.6
ChBC-83P	Biochemical Engg Lab	1.3	1.6	1.7
ChBC-44P	Fluid Mechanics & Mechanical Operations Lab	1.4	0.7	1.0
ChBS-41	Seminar	1.0	1.3	0.8
ChBC-56P	Heat Transfer Lab.	1.4	0.7	0.9
ChBC-65P	Energy Eng. Lab.	1.4	0.7	0.9
ChBC-68P	Thermodynamics and Reaction Eng. Lab	1.4	0.7	0.9
ChBC-69	Industrial Training & Presentations	1.4	2.4	1.4
ChBC-77P	Mass Transfer Lab.	1.0	1.4	1.3
ChBC-73	Process dynamics and control	1.5	0	1.6
ChBE-82	Petroleum Technology	1.0	0	0.9

Table-B. 3.1b

Table-B. 3.1c gives the mapping of Course Outcomes with the Program Outcomes (POs)

Course Articulation Matrix

CO	Statements	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
Introduction to Chemical Engineering													
ChBC-31.1	Introduction to Chemical Engineering: Origin, Growth, Relation to other sciences	2	1	-	-	-	3		2	-	-	-	-
ChBC-31.2	Knowledge of Unit Operations and Unit Processes and its application to Chemical Process Industries	3	2	2	-	-	-	-	-	-	-	-	-
ChBC-31.3	Concerns of Chemical Engineering in areas of Energy, Environment, new materials, health, bioengineering and safety	2	-	-	-	-	3	3	-	-	-	-	2
ChBC-31.4	Implementation of Chemical Engineering Basics to simple systems	2	2	1	-	-	-	-	-	-	-	1	-
ChBC-31.5	Role of modeling and simulation in chemical engineering	1	2	2	-	2	-	-	-	-	-	-	-
Thermodynamics and Chemical Kinetics													
ChBC-34.1	1st, 2nd & 3rd Law of Thermodynamics	3	2	1	-	-	-	-	-	-	-	-	-
ChBC-34.2	Entropy of Process	3	2	1	-	-	-	-	-	-	-	-	-
ChBC-34.3	Basic Idea of Reactors	2	1	3	-	-	-	-	-	-	-	-	-
ChBC-34.4	Rate of Reaction (Exothermic & Endothermic)	3	2	1	-	-	-	-	-	-	-	-	-
Mechanical Operations													
ChBC-43.1	Proper design and handling of fine particles	1		3	-	1	2	-	-	-	-	-	-
ChBC-43.2	Characterization of collection of particle	3	1		-		-	-	-	-	-	2	-
ChBC-43.3	Industrial screening Equipment	1		3	-	2	-	-	-	-	-	-	-
ChBC-43.4	Size reduction equipment	1	3	2	-		-	-	-	-	-	-	-
Mechanical Operations													
ChBC-51.1	Basic Idea of Pressure Vessel Equipment	3		1	-	-	2	-	-	-	-	-	-

ChBC-51.2	Basic Idea of tank	3		1	-	-	2	-	-	-	-	-	-
ChBC-51.3	Optimization of Equipment		3	2	-	-	1	-	-	-	-	-	-
ChBC-51.4	Design of Tank and Pressure Vessel	1	2	3	-	-		-	-	-	-	-	-
Mass Transfer -I													
ChBC-55.1	Fundamental Understanding of mass transfer based unit operations	3	2	-	-	-	-	-	-	-	-	-	-
ChBC-55.2	Analyze and interpret equilibrium data	3	3	2	2	-	-	-	-	-	-	-	-
ChBC-55.3	Design of mass transfer equipment	2	3	3	3	1	-	-	-	-	-	-	-
Process Equipment Design -II (Process Aspect)													
ChBC-61.1	Basic Idea of Shell and Tube Heat Exchanger	1	2	3	-	-	-	-	-	-	-	-	-
ChBC-61.2	Design of Shell and Tube Heat Exchanger	2	1	3	-	-	-	-	-	-	-	-	-
ChBC-61.3	Basic Idea of LMTD & NTU	2	1	3	-	-	-	-	-	-	-	-	-
ChBC-61.4	To Find out Over All Heat Transfer Coefficient	1	3	2	-	-	-	-	-	-	-	-	-
Mass Transfer – II													
ChBC-62.1	Fundamental Understanding of mass transfer based unit operations	3	2	-	-	-	-	-	-	-	-	-	-
ChBC-62.2	Interpretation of the thermodynamic and equilibrium data	3	3	2	2	-	-	-	-	-	-	-	-
ChBC-62.3	Design of equipment for mass transfer	2	3	3	3	1	-	-	-	-	-	-	-
Energy Engineering													
ChBC-64.1	Understanding various effects of energy based systems.	3	3	-	3	2	-	3	-	1	-	2	2
ChBC-64.2	Basic knowledge of primary convectional fuels	3	3	2	2	-	-	3	-	2	-	1	-
ChBC-64.3	Understanding the utility of using renewable fuels	2	3	3	3	1	-	3	-	2	-	-	-
ChBC-64.4	Analyzing the energy Audit and management system	3	2	2	3	-	-	3	-	1	-	3	-
Process Instrumentation													
ChBC-66.1	To impart the basic concept of instrumentation	3	1	-	-	-	-	-	-	-	-	-	-
ChBC-66.2	Analyze the response of instruments	2	2	-	-	-	-	-	-	-	-	-	-
ChBC-66.3	Ability to integrate the knowledge about instruments used for temperature, pressure and fluid flows	3	3	1	-	-	2	-	-	-	-	-	-
Industrial Training & Presentations													
ChBC-69.1	Correlate class mode learning to real industrial applications	2	3	3	1	-	2	1	2	-	-	2	-
ChBC-69.2	Efficient Writing skills for proper documentation	1	-	-	-	-	-	-	-	-	3	-	-
ChBC-69.3	Comprehensible Communication abilities	-	1	-	-	-	-	-	-	-	3	-	-
ChBC-69.4	Deliverables in terms of power point presentations	-	2	-	-	-	-	-	-	2	-	-	-
Process Economics & Plant Design													
ChBC-75.1	To provide the fundamentals of process plant design	3	2	2	-	-	-	-	-	-	-	-	-
ChBC-75.2	To provide knowledge of economics involved in	3	2	3	-	-	-	-	-	-	-	2	-

	development of chemical engineering processes and design												
ChBC-75.3	To Evaluate the profitability of process industry projects	3	1	-	-	-	-	-	-	-	-	3	-
ChBC-75.4	To create entrepreneurs with business ethics	3	-	-	-	-	2	-	-	-	-	2	1
ChBC-75.5	To perform optimum design of a process	3	2	2	1	-	-	-	-	-	-	-	-
Biochemical Engineering													
ChBC-76.1	Fundamental understanding of the subject based on various conversion roots	3	2	1	-	-	1	3					1
ChBC-76.2	Role of biochemical engineers in the development of modern fermentation industries	3	3	3		3	1	2	1				
ChBC-76.3	Analysis of the data Obtained during biochemical process.	3	3	3	1								1
ChBC-76.4	Application of the data in design of the systems for conversion and separation	3	3	3	1	3		3					
Seminar													
ChBS-41.1	Effective Report Writing	1	1	-	-	-	-	-	-	-	3	-	-
ChBS-41.2	Comprehensible Communication Skills	1	1	-	-	1	-	-	1	-	3	-	-
ChBS-41.3	Exposure to novel areas of research and latest trends	3	2	-	-		2	2	-	-	-	-	-
Biochemical Engineering Lab													
ChBC-83P.1	Generation and analysis of bioprocess data	3	3	1	1	3				3			1
ChBC-83P.2	Applications in bioprocess development	3	3	3		3				3	1	1	
ChBC-83P.3	Fundamental understanding of basic practicals and equipments used	3	1	1		3							
ChBC-83P.4	Understanding of basic estimation techniques	1	1	1		3			3	3	1		
Material Science & Technology													
ChBC-53.1	General look at materials and examination of fundamental origin of properties	3	-	-	-	-	-	-	-	-	-	-	1
ChBC-53.2	Basic Characteristics of materials, metals, ceramics and polymers	3	1			2							
ChBC-53.3	Functional Materials	3			2		1	1					
ChBC-53.4	How materials respond to different applied stresses	3	2	2	1	1	-	-	-	-	-	-	-
ChBC-53.5	Failure of Materials, Fractures, Corrosion and Fatigue	3	2	2	-	-	-	-	-	-	-	-	-
Process Dynamics & Control													
ChBC-73.1	To understand and model the dynamic behavior of chemical processes based on their time domain, Laplace domain and frequency domain representation	3	3	-	-	-	-	-	-	-	-	-	-
ChBC-73.2	Analyze properties eg speed of response, frequency response of first order and second order systems	3	2		1								

ChBC-73.3	to understand the operation of P,I,D and PID controllers and to tune them.	2	2	1		2							
ChBC-73.4	Analyse the stability of process systems	2	2				2						
ChBC-73.5	Apply control strategies to address safety and environmental issues.	2	2	2	1	1		2					
Transport Phenomena													
ChBC-67.1	To Identify transport properties and analyze the mechanism of momentum, energy and mass transport.	3		2	1								
ChBC-67.2	To Apply conservation laws to formulate differential form of equations of change for mass, momentum and heat transfer problems.	3	2										
ChBC-67.3	To solve linear partial differential equations along with appropriate boundary conditions to get the velocity, temperature and concentration profiles of different engineering problems.	3	3	2	1	2	1						
ChBC-67.4	Recognize non Newtonian fluids and apply appropriate models to solve them	2	2		2								
Process Fluid Mechanics													
ChBC-33.1	Ability to understand the basic principles of process fluid mechanics. Identify and obtain the values of different fluid properties and relationship between them.	3	1					2					
ChBC-33.2	Identify, formulate and solve integrative fluid flow problems with the application of the momentum and energy equations, derive forces acting on fluid and solve numerically.	2	3					2					
ChBC-33.3	Interpret different forms of pressure measurement and flow measurement, distinguish different types of flow and losses in pipes.	3	3					1					
ChBC-33.4	Apply dimensional analysis to predict physical parameters that influence the flow in process fluid mechanics.	3	3										
Chemical Eng. Thermodynamics													
ChBC-41.1	Predicting thermodynamic properties, fugacity, fugacity coefficients and VLE data	3	2										
ChBC-41.2	Identify and understand the principles of chemical equilibrium thermodynamics to solve multiphase equilibria problems	3	2	-	-	-	-	-	-	-	-	-	-
ChBC-41.3	Compute phase equilibrium	3	3	-	-	-	-	-	-	-	-	-	-

	data, bubble and flash point												
ChBC-41.4	Examine the effect of inefficiencies in each step of steady state flow process.	3	-	-	3								
Material and Energy Balance													
ChBC-32.1	Fundamental Understanding of material and energy balance applied in the chemical processes	3	2	-	-	-	-	-	-	-	-	-	-
ChBC-32.2	Design of processes where material and energy transfer takes place	3	3	2	2	-	-	-	-	-	-	-	-
ChBC-32.3	To be able to model material and energy flow around reacting chemical processes.	2	3	3	3	1	-	-	-	-	-	-	-
Heat Transfer													
ChBC-42.1	To understand the fundamentals and basic principles of conduction, convection, and radiation heat transfer mechanisms and their applications in various heat transfer equipment in process industries.	3	-	-	1	-	-	1	-	1	1	-	1
ChBC-42.2	To formulate, analyze, design and solve the problems related to heat transfer.	1	3	3	1	-	1	1	-	1	1	-	1
ChBC-42.3	To learn the thermal analysis and sizing of heat exchangers.	-	3	-	1		2	-	-	-	-	-	1
Seminar													
ChBS-41.1	Effective Report Writing	1	1	-	-	-	-	-	-	-	3	-	-
ChBS-41.2	Comprehensible Communication Skills	1	1	-	-	1	-	-	1		3	-	-
ChBS-41.3	Exposure to novel areas of research and latest trends.	3	2	-	-	-	2	2	-	-	-	-	-
Chemical Technology – I													
ChBC-54.1	Knowledge of the chemical processes along with emphasis on recent technological development.	3	-	-	-	1	-	1	-	-	-	-	2
ChBC-54.2	Develop chemical products and processes along with use of different equipments.	3	-	-	-	1		1					2
ChBC-54.3	Ability to deal with apparatus, unit operations, and chemical economics.	3		1									3
Heat Transfer Lab.													
ChBC-56P.1	Relate to concepts discussed in the Heat Transfer course.	3			1			1		1	1		1
ChBC-56P.2	Perform experiments on conduction, convection and radiation.	1	3	3	1		1	1		1	1		1
ChBC-56P.3	Identify the heat exchange properties of various materials.		3		1		2			1	1		1
ChBC-56P.4	Evaluate the amount of heat exchange for plane, cylindrical & spherical geometries.		2	3	2		1	1		2	2		2
ChBC-56P.5	Compare the performance of heat exchangers.		2	3	2		1	1		2	2		2

Mass Transfer Lab.												
ChBC-77P.1	Fundamental Understanding of the mass transfer principles and their industrial application	3	1	3						2	2	
ChBC-77P.2	Elaborate on the various equipments to determine the mass transfer coefficients, diffusion criterions.	3	2	3	2					2	2	
ChBC-77P.3	Derive and verify the mass transfer principles on basis of wetted columns, cooling towers and adsorption towers.	2	3	3						2	2	
Chemical Process Safety												
ChBE-72.1	Knowledge about production of crude oil, along with its properties and characterization methods.	3	1						2			2
ChBE-72.2	Understand the process of fractionation and identify the specifications for good quality petroleum	3				1		2				
ChBE-72.3	Identify different products obtained from refining process and their best utilization.	3										
ChBE-72.4	Integrate and evaluate problems pertaining to crude oil refinery engineering.	3				2		1				3

Table-B.3.1c

Course Articulation Matrix

CO	Statement	PSO 1	PSO 2	PSO 3
Introduction to Chemical Engineering				
ChBC31.1	Introduction to Chemical Engineering: Origin, Growth, Relation to other sciences	0.8	0	0.1
ChBC31.2	Knowledge of Unit Operations and Unit Processes and its application to Chemical Process Industries	0.7	0	0.8
ChBC31.3	Concerns of Chemical Engineering in areas of Energy, Environment, new materials, health, bioengineering and safety	1.2	0	0.6
ChBC31.4	Implementation of Chemical Engineering Basics to simple systems	0.6	0.3	0.5
ChBC31.5	Role of modelling and simulation in chemical engineering	0.8	0	1.4
Thermodynamics and Chemical Kinetics				
ChBC34.1	1st, 2nd & 3rd Law of Thermodynamics	0.6	0	0.5
ChBC34.2	Entropy of Process	0.6	0	0.5
ChBC34.3	Basic Idea of Reactors	0.6	0	1
ChBC34.4	Rate of Reaction (Exothermic & Endothermic)	0.6	0	0.5
Mechanical operations				
ChBC43.1	Proper design and handling of fine particles	0.9	0	1.2
ChBC43.2	Characterization of collection of particle	0.6	0.6	0.1
ChBC43.3	Industrial screening Equipment	0.8	0	1.5
ChBC43.4	Size reduction equipment	0.5	0	0.9
Mechanical Operations				
ChBC51.1	Basic Idea of Pressure Vessel Equipment	0.8	0	0.3

ChBC51.2	Basic Idea of tank	0.8	0	0.3
ChBC51.3	Optimization of Equipment	0.6	0	0.9
ChBC51.4	Design of Tank and Pressure Vessel	0.6	0	1.1
Mass Transfer I				
ChBC55.1	Fundamental Understanding of mass transfer based unit operations	0.4	0	0.2
ChBC55.2	Analyse and interpret equilibrium data	0.9	0	1.1
ChBC55.3	Design of mass transfer equipment	1.2	0	1.8
Process Equipment Design II (Process Aspect)				
ChBC61.1	Basic Idea of Shell and Tube Heat Exchanger	0.6	0	1.1
ChBC61.2	Design of Shell and Tube Heat Exchanger	0.6	0	1
ChBC61.3	Basic Idea of LMTD & NTU	0.6	0	1
ChBC61.4	To Find out Over All Heat Transfer Coefficient	0.5	0	0.9
Mass Transfer – II				
ChBC62.1	Fundamental Understanding of mass transfer based unit operations	0.4	0	0.2
ChBC62.2	Interpretation of the thermodynamic and equilibrium data	0.9	0	1.1
ChBC62.3	Design of equipment for mass transfer	1.2	0	1.8
Energy Engineering				
ChBC64.1	Understanding various effects of energy based systems.	1.8	0.9	1.8
ChBC64.2	Basic knowledge of primary convectional fuels	1.4	0.9	1.7
ChBC64.3	Understanding the utility of using renewable fuels	1.6	0.6	2.4
ChBC64.4	Analysing the energy Audit and management system	1.7	1.1	1.7
Process Instrumentation				
ChBC66.1	To impart the basic concept of instrumentation	0.4	0	0.1
ChBC66.2	Analyse the response of instruments	0.3	0	0.2
ChBC66.3	Ability to integrate the knowledge about instruments used for temperature, pressure and fluid flows	0.9	0	0.6
Industrial Training & Presentations				
ChBC69.1	Correlate class mode learning to real industrial applications	1.5	0.6	1.5
ChBC69.2	Efficient Writing skills for proper documentation	0.1	1.3	0
ChBC69.3	Comprehensible Communication abilities	0.1	1.3	0.1
ChBC69.4	Deliverables in terms of power point presentations	0.1	0.6	0.2
Process Economics & Plant Design				
ChBC75.1	To provide the fundamentals of process plant design	0.7	0	0.8
ChBC75.2	To provide knowledge of economics involved in development of chemical engineering processes and design	1	0.6	1.1
ChBC75.3	To Evaluate the profitability of process industry projects	0.7	0.9	0.1
ChBC75.4	To create entrepreneurs with business ethics	0.9	0.6	0
ChBC75.5	To perform optimum design of a process	0.8	0	0.9
Biochemical Engineering				
ChBC76.1	Fundamental understanding of the subject based on various conversion roots	1.1	0	1.1
ChBC76.2	Role of biochemical engineers in the development of modern fermentation industries	1.7	0	2.5
ChBC76.3	Analysis of the data Obtained during biochemical process.	1	0	1.3

ChBC76.4	Application of the data in design of the systems for conversion and separation	1.7	0	2.8
Seminar				
ChBS41.1	Effective Report Writing	0.2	1.3	0.1
ChBS41.2	Comprehensible Communication Skills	0.3	1.3	0.4
ChBS41.3	Exposure to novel areas of research and latest trends	1	0	0.6
Biochemical Engineering Lab				
ChBC83P.1	Generation and analysis of bioprocess data	1.3	0.9	1.6
ChBC83P.2	Applications in bioprocess development	1.4	1.6	2.1
ChBC83P.3	Fundamental understanding of basic practical and equipments used	1	0	1.3
ChBC83P.4	Understanding of basic estimation techniques	0.8	1.3	1.3
Material Science & Technology				
ChBC53.1	General look at materials and examination of fundamental origin of properties	0.4	0	0
ChBC53.2	Basic Characteristics of materials, metals, ceramics and polymers	0.7	0	0.7
ChBC53.3	Functional Materials	0.8	0	0.4
ChBC53.4	How materials respond to different applied stresses	0.9	0	1.2
ChBC53.5	Failure of Materials, Fractures, Corrosion and Fatigue	0.7	0	0.8
Process Dynamics & Control				
ChBC73.1	To understand and model the dynamic behaviour of chemical processes based on their time domain, Laplace domain and frequency domain representation	0.5	0	0.3
ChBC73.2	Analyse properties eg speed of response, frequency response of first order and second order systems	0.6	0	0.3
ChBC73.3	To understand the operation of P, I and D and PID controllers and to tune them.	0.8	0	1.1
ChBC73.4	Analyse the stability of process systems	0.7	0	0.2
ChBC73.5	Apply control strategies to address safety and environmental issues.	1.1	0	1.6
Transport Phenomena				
ChBC67.1	To Identify transport properties and analyse the mechanism of momentum, energy and mass transport.	0.7	0	0.7
ChBC67.2	To Apply conservation laws to formulate differential form of equations of change for mass, momentum and heat transfer problems.	0.4	0	0.2
ChBC67.3	To solve linear partial differential equations along with appropriate boundary conditions to get the velocity, temperature and concentration profiles of different engineering problems.	1.3	0	1.6
ChBC67.4	Recognize non Newtonian fluids and apply appropriate models to solve them	0.6	0	0.4
Process Fluid Mechanics				
ChBC33.1	Ability to understand the basic principles of process fluid mechanics. Identify and obtain the values of different fluid properties and relationship between them.	0.6	0	0.5
ChBC33.2	Identify, formulate and solve integrative fluid flow problems with the application of the momentum and energy equations, derive forces acting on fluid and solve numerically.	0.6	0	0.7
ChBC33.3	Interpret different forms of pressure measurement and flow measurement, distinguish different types of flow and losses in pipes.	0.6	0	0.5

ChBC33.	Apply dimensional analysis to predict physical parameters that influence the flow in process fluid mechanics.	0.5	0	0.3
Chemical Eng. Thermodynamics				
ChBC41.1	Predicting thermodynamic properties, fugacity, fugacity coefficients and VLE data	0.4	0	0.2
ChBC41.2	Identify and understand the principles of chemical equilibrium thermodynamics to solve multiphase equilibria problems	0.4	0	0.2
ChBC41.3	Compute phase equilibrium data, bubble and flash point	0.5	0	0.3
ChBC41.4	Examine the effect of inefficiencies in each step of steady state flow process.	0.7	0	0.3
Material and Energy Balance				
ChBC32.1	Fundamental Understanding of material and energy balance applied in the chemical processes	0.4	0	0.2
ChBC32.2	Design of processes where material and energy transfer takes place	0.9	0	1.1
ChBC32.3	To be able to model material and energy flow around reacting chemical processes.	1.2	0	1.8
Heat Transfer				
ChBC42.1	To understand the fundamentals and basic principles of conduction, convection, and radiation heat transfer mechanisms and their applications in various heat transfer equipment in process industries.	0.6	0.7	0.3
ChBC42.2	To formulate, analyse, design and solve the problems related to heat transfer.	1.1	0.7	1.5
ChBC42.3	To learn the thermal analysis and sizing of heat exchangers.	0.7	0	0.4
Seminar				
ChBS41.1	Effective Report Writing	0.2	1.3	0.1
ChBS41.2	Comprehensible Communication Skills	0.3	1.3	0.4
ChBS41.3	Exposure to novel areas of research and latest trends.	1	0	0.6
Chemical Technology – I				
ChBC54.1	Knowledge of the chemical processes along with emphasis on recent technological development.	0.7	0	0.5
ChBC54.2	Develop chemical products and processes along with use of different equipments.	0.7	0	0.5
ChBC54.3	Ability to deal with apparatus, unit operations, and chemical economics.	0.6	0	0.3
Heat Transfer Lab.				
ChBC56P.1	Relate to concepts discussed in the Heat Transfer course.	0.6	0.7	0.3
ChBC56P.2	Perform experiments on conduction, convection and radiation.	1.1	0.7	1.5
ChBC56P.3	Identify the heat exchange properties of various materials.	0.7	0.7	0.4
ChBC56P.4	Evaluate the amount of heat exchange for plane, cylindrical & spherical geometries.	1.1	1.4	1.5
ChBC56P.5	Compare the performance of heat exchangers.	1.1	1.4	1.5
Mass Transfer Lab.				
ChBC77P.1	Fundamental Understanding of the mass transfer principles and their industrial application	0.7	1.4	1
ChBC77P.2	Elaborate on the various equipments to determine the mass transfer coefficients, diffusion criterions.	1	1.4	1.3
ChBC77P.3	Derive and verify the mass transfer principles on basis of wetted columns, cooling towers and adsorption towers.	0.7	1.4	1.2
Chemical Process Safety				
ChBE72.1	Knowledge about production of crude oil, along with its properties and characterization methods.	0.7	0	0.5

ChBE72.2	Understand the process of fractionation and identify the specifications for good quality petroleum	0.7	0	0.7
ChBE72.3	Identify different products obtained from refining process and their best utilization.	0.3	0	0
ChBE72.4	Integrate and evaluate problems pertaining to crude oil refinery engineering.	0.9	0	0.8

Table-B.3.1d**3.2. Attainment of Course Outcomes**

(75)

Marks Claimed	75
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3.2.1. Describe the assessment tools and processes used to gather the data upon which the evaluation of Course Outcome is based (10)**Claimed 10**

The assessment tools being used to assess the impact of delivery methods can be divided in two categories i.e. Direct Assessment Tools and Indirect Assessment Tools.:

Direct Assessment Tools

- Assignment-The assignment is both a quantitative and qualitative performance assessment tool designed to assess students' knowledge of engineering practices, framework and problem solving. 10% marks in every theory course are fixed for this component.
- Mid-semesters (or Minors) -This type of performance assessment is carried out during the examination sessions which is held once a semester. Each and every sessional is focused in attaining the course outcomes. Each Mid-semester is having a weightage of 30% in the final tally of the end semester score for each of the theory courses.
- End Semester Examination-Semester End examination is a metric for assessing whether all the POs are attained or not. Examination is more focused on attainment of course outcomes and program outcomes using a descriptive exam which covers the entire syllabus taught during the semester for a given course. This component is having a weightage of 60% in the final tally of the end semester score for each of the theory courses.

A typical evaluation at the end of the course would like as shown in **Table-B.3.2.1a-b**.

Table-3.2.1a (used till Dec 2016)

Name	Enrollment Number	Minor-I (20)	Minor-II (20)	Assessment (10)	Major (50)	Total (100)	Grade

Table-3.2.1b (w.e.f. Jan 2017)

Name	Enrollment Number	Mid-Term (30)	Assessment (10)	Major (60)	Total (100)	Grade

- Practical Evaluation– The students are continuously evaluated towards their performance during lab sessions in routines. Viva-Voce exam related to the experiment is also held in routine. A typical assessment is shown in **Table 3.2.1c**.

Format for Practical Evaluation

Name	Enrollment No.	Practical Copy/ Report (40)	Attendance (10)	Written/ External (30)	Viva (20)	Total	Grade

Table-3.2.1c

- **Seminar:** Students are advised to choose topic from their area of research interest and undertake a thorough literature survey to prepare a presentation as a part of seminar. Students are evaluated for their presentation skills, contents & delivery by a group of faculty members. A report is also submitted by the students, which also forms the basis of evaluation as shown in **Table-3.2.1d**.

Format for Seminar Evaluation

Sl. No.	Name	Seminar Report (40)	Attendance (10)	Seminar Evaluation Board (50)	Total Marks (100)	Grade

Table-3.2.1d

- **Project:** Projects are taken by students individually and under the guidance of faculty members. Project topics are based on a large variety of problems mostly related with the industry and many a times are of a multidisciplinary nature. Projects imbibe the quality of problem solving and independently handling the complex situation in a methodical manner using scientific principles. Project reports are written and presented with open discussion. A sample of evaluation is shown in **Table-3.2.1e**.

Format for Project Evaluation

Project and Project Guide	Names of students involved in the Project	Enrollment number	Project guide (80)	Project Report (30)			Viva (90)			Total (200)	Percentage (%)	Grade
				Internal Examiner (10)	External Examiner (10)	HOD (10)	Internal Examiner (30)	External Examiner (30)	HOD (30)			

Table-3.2.1e**Indirect Assessment Tools and Technique**

Feedback- Indirect assessment strategies may be easily implemented by embedding them in the end-of-course evaluation form, Alumni Survey and Employer Survey.

- Program Exit Survey: during the program
- Alumni Survey: after the graduation
- Employer Survey: after one year of graduation

Survey Forms

i. Alumni Survey

National Institute of Technology Srinagar		
Alumni Survey Form		
Thank you for taking the time to fill out this questionnaire. All the information will be kept confidential and will be used only for statistical purposes. As an alumnus, your opinions are valued and are utilized to help us make periodic changes and updates for continuous improvement of our undergraduate program		
Alumni name		
Year of Graduation		
Mailing address		
Placement	Before/after graduation	Core/Software
Name of the Company		
Please rate each of the following skills, abilities or attributes in terms of their importance to state how well your education at Chemical Engineering Department, National Institute of Technology, Srinagar prepare you for these.		
Skills, Abilities and Attributes		
Scale (3 to 1) Excellent to poor		
Apply Knowledge of mathematics, Basic sciences and Engineering		
Problem Identification and Analysis		
Design a system and develop solution to the problem		
Investigate and Handle complex problems		
Ability to use techniques and tools in engineering practice		
Understand and appreciate the impact of engineering in the societal and global contexts		
Awareness of existing issues (e.g. Economics of engineering, Environmental issues)		
Understand professional and ethical responsibilities as an engineer (e.g., safety, professional ethics, code of conduct)		
Function effectively in teams		
Proficient in English language in both communicative and technical forms		
Awareness of the need for life-long learning (Seeking further education, self learning, Membership in professional societies)		
Project Management and Finance		
Signature	Suggestion if any:	

ii. Employer Survey

Chemical Engineering Department <u>National Institute of Technology, Srinagar</u> EMPLOYER SURVEY FORM				
The purpose of this survey is to obtain Employer's input on the quality of education of undergraduate programs in NIT, Srinagar. Your sincere cooperation would enable us to improve the quality of our graduates as per your requirements				
Name of Company/ Organization				
Mailing address				
Sector Private/Public/Academia				
What are the pertinent employability skills to stay updated in current industry trends and thereby improve the quality of the undergraduate program?	Logical Thinking	Good Aptitude	Excellent Communication	
Rate the NIT Srinagar Graduates working in your organization using the following criterion. Put tick mark Knowledge, Skills, Abilities, Attitude and other Attributes expected out of NIT Srinagar graduates.				
Sl. No.	Overall, are you satisfied with	Excellent (3)	Good (2)	Satisfied (1)
i.	Capacity for development and analysis of engineering problems and formulation of appropriate solutions, retaining professional and ethical responsibilities.			
ii.	Aptitude for self education, ability to learn new skills and a clear appreciation for the value of life-long learning to update professional knowledge.			
iii.	Understanding professional engineering solutions for sustainable development and their application in global, national and societal contexts.			
iv.	Competence for acquiring new skills and applying them in research and development.			
v.	Fundamental knowledge in mathematics and science and professional fluency in English both communicative and technical forms.			
vi.	Dexterity in differentiation of management techniques and possession of leadership skills that enable successful function of multi-disciplinary teams.			

Signature:

Name and Designation:

iii. In Program Students Survey

National Institute of Technology, Srinagar <u>Chemical Engineering Department</u> In-Program Student Survey Form		
Name:		Year Passed out:
Email:		Phone:
Assessment of Knowledge, Skills, Abilities and Attributes presently acquired at NIT Srinagar		
Please rate each of the following Knowledge, Skills, Abilities, Attitudes or attribute in terms how well NIT Srinagar inculcated them in your education so far. (tick mark the your choice)		
1	Ability to acquire and apply knowledge of basic mathematics, science and engineering fundamentals. If not satisfied give your suggestions to improve	
	Extremely Satisfied	Satisfied
2	Ability to apply analytical skills to engineering problems. If not satisfied give your suggestions to improve	
	Extremely Satisfied	Satisfied
3	Ability to conduct experiments, analyze data, and present results. If not satisfied give your suggestions to improve	
	Extremely Satisfied	Satisfied
4	Ability to conduct independent research for information required in engineering problem Solving. If not satisfied give your suggestions to improve	
	Extremely Satisfied	Satisfied
5	Ability to use modern technologies and tools necessary for practice. If not satisfied give your suggestions to improve	
	Extremely Satisfied	Satisfied
6	Ability to understand global issues related to engineering. If not satisfied give your suggestions to improve.	
	Extremely Satisfied	Satisfied
7	Understand the importance of ethical and professional responsibility. If not satisfied give your suggestions to improve	
	Extremely Satisfied	Satisfied
8	An ability to function on multi-disciplinary teams. If not satisfied give your suggestions to improve	
	Extremely Satisfied	Satisfied
9	An ability to communicate effectively. If not satisfied give your suggestions to improve	
	Extremely Satisfied	Satisfied
10	A recognition of the need for, and an ability to engage in life-long learning. If not satisfied give your suggestions to improve	
	Extremely Satisfied	Satisfied

iv. Exiting Students Survey

Chemical Engineering Department			
<u>National Institute of Technology, Srinagar</u>			
Exiting Students Survey			
Name:		En. Roll.No:	
Phone No.		Email:	
Assessment of Abilities, Skills and Attributes acquired at NIT Srinagar. Please rate each of the following items in terms how well your education at NIT Srinagar prepared you for them.			
i.	Basic knowledge in mathematics, science, engineering and humanities.		
	Extremely Satisfied	Satisfied	Not Satisfied
ii.	Ability to identify, design, analyze and solve mechanical engineering problems		
	Extremely Satisfied	Satisfied	Not Satisfied
iii.	Ability to identify, design, analyze and solve mechanical engineering problems		
	Extremely Satisfied	Satisfied	Not Satisfied
iv.	Design/ development of complex engineering problems and their solutions		
	Extremely Satisfied	Satisfied	Not Satisfied
v.	Use of research-based knowledge and research methods		
	Extremely Satisfied	Satisfied	Not Satisfied
vi.	Demonstrate the ability to apply advanced technologies to solve contemporary and new problems		
	Extremely Satisfied	Satisfied	Not Satisfied
vii.	Awareness to apply engineering solutions in global, national and societal contexts		
	Extremely Satisfied	Satisfied	Not Satisfied
viii.	Understanding professional engineering solutions in societal and environmental contexts		
	Extremely Satisfied	Satisfied	Not Satisfied
ix.	Understanding professional engineering solutions in societal and environmental contexts		
	Extremely Satisfied	Satisfied	Not Satisfied
x.	Understanding of professional and ethical responsibility		
	Extremely Satisfied	Satisfied	Not Satisfied
xi.	Ability to function as an effective member in multi-disciplinary teams		
	Extremely Satisfied	Satisfied	Not Satisfied
xii.	Proficient in English language in both communicative and technical forms		
	Extremely Satisfied	Satisfied	Not Satisfied
xiii.	Demonstrate the ability to choose and apply appropriate resource management techniques		
	Extremely Satisfied	Satisfied	Not Satisfied
xiv.	Capable of self-education and clearly understand the value of updating their professional knowledge to engage in life-long learning		
	Extremely Satisfied	Satisfied	Not Satisfied

xv.	Ability to integrate theory and practice to construct systems of varying complexity		
	Extremely Satisfied	Satisfied	Not Satisfied
xvi	Ability to apply mechanical engineering skills, tools and mathematical techniques to analyze, design and model complex systems		
	Extremely Satisfied	Satisfied	Not Satisfied
xvii.	Ability to design and manage small-scale projects to develop a career in mechanical engineering		
	Extremely Satisfied	Satisfied	Not Satisfied

4. Please list some very important skills that you think you had learned in the engineering program.

5. Please write down any comments or suggestions that you think will improve the engineering programs at NIT Srinagar.

6. Please comment about the department Vision and Mission:

Signature:

- Participation in Conferences / workshops/STCs and publications- Students are encouraged to participate in Conferences / workshops/STCs, so as to keep them updated in the latest areas of research. Also they are encouraged to publish the results of their dissertation work in Journals / Conference proceedings.
- Higher Education- Based upon the aptitude of the students, they take up the option of higher studies and faculty members guide the students to choose the area of research for Ph.D in India & abroad.
- Organizing conferences/ Workshops and other activities- In order to develop team work culture and leadership qualities students are encouraged to participate in organizing conferences/ workshops and other activities in and across the departments All the assessment techniques used were designed such so as to satisfy the Program Outcomes. A mapping of the assessment techniques with the POs is shown in **Table-3.2.1f**.

Mapping of Assessment Technique with the POs

		Eng. Knowledge	Problem Analysis	Design	Complex Problems	Investigation of Usage	Modern Tool Society	Eng. and Environment	Ethics	Team Work	Communication	Project Management	Lifelong Learning
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
Direct Assessment Technique (80% weightage)	Assignments	Y	Y	Y	Y	Y				Y	Y	Y	Y
	Minor Exams (or Mid Sem Exams)	Y	Y	Y	Y	Y	Y	Y	Y				Y
	End Sem Exam	Y	Y	Y	Y	Y	Y	Y	Y				Y
	Seminar	Y				Y	Y	Y	Y	Y	Y	Y	Y
	Quizzes	Y	Y	Y	Y	Y	Y						
	Practical Exam/Performance	Y	Y				Y	Y	Y	Y	Y	Y	Y
	Project	Y	Y	Y	Y		Y	Y		Y	Y	Y	Y
	Program exit Survey	Y	y	y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Indirect Assessment Technique (20% weightage)	Participation in Conferences / Workshops/STCs and Publications	Y				Y				Y	Y		Y
	Employer Survey	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	Organizing Conferences/ Workshops and other Activities								Y	Y	Y	y	
	Alumni Survey	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Table-3.2.1f

3.2.2. Record the attainment of Course Outcomes of all courses with respect to set attainment levels (65)

Claimed Marks	65
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For the Academic year 2014-2015

CO	Statement	Target Level	Attainment Level
ChBC-31.1	Introduction to Chemical Engineering: Origin, Growth, Relation to other sciences	2	1.3
ChBC-31.2	Knowledge of Unit Operations and Unit Processes and its application to Chemical Process Industries	2.3	1.5
ChBC-31.3	Concerns of Chemical Engineering in areas of Energy, Environment, new materials, health, bioengineering and safety	2.5	1.7

ChBC-31.4	Implementation of Chemical Engineering Basics to simple systems	1.5	1.0
ChBC-31.5	Role of modeling and simulation in chemical engineering	1.75	1.2
ChBC-43.1	Proper design and handling of fine particles	1.8	1.2
ChBC-43.2	Characterization of collection of particle	2	1.3
ChBC-43.3	Industrial Screening Equipment	2	1.3
ChBC-43.4	Size Reduction Equipment	2	1.3
ChBC-51.1	Basic Idea of Pressure Vessel Equipment	2	1.4
ChBC-51.2	Basic Idea of tank	2	1.4
ChBC-51.3	Optimization of Equipment	2	1.4
ChBC-51.4	Design of Tank and Pressure Vessel	2	1.4
ChBC-55.1	Fundamental Understanding of mass transfer based unit operations	2.5	1.5
ChBC-55.2	Analyze and interpret equilibrium data	2.5	1.5
ChBC-55.3	Design of mass transfer equipment	2.4	1.4
ChBC-62.1	Fundamental Understanding of mass transfer based unit operations	2.5	1.5
ChBC-62.2	Interpretation of the thermodynamic and equilibrium data	2.5	1.5
ChBC-62.3	Design of equipment for mass transfer	2.4	1.5
ChBC-64.1	Understanding various effects of energy based systems.	2.4	1.5
ChBC-64.2	Basic knowledge of primary convective fuels	2.3	1.4
ChBC-64.3	Understanding the utility of using renewable fuels	2.4	1.5
ChBC-64.4	Analysing the energy Audit and management system	2.4	1.5
ChBC-66.1	To impart the basic concept of instrumentation	2	1.3
ChBC-66.2	Analyse the response of instruments	2	1.3
ChBC-66.3	Ability to integrate the knowledge about instruments used for temperature, pressure and fluid flows	2.3	1.5
ChBC-69.1	Correlate class mode learning to real industrial applications	2	1.5
ChBC-69.2	Efficient Writing skills for proper documentation	2	1.5
ChBC-69.3	Comprehensible Communication abilities	2	1.5
ChBC-69.4	Deliverables in terms of power point presentations	2	1.5
ChBC-75.1	To provide the fundamentals of process plant design	2.3	1.4
ChBC-75.2	To provide knowledge of economics involved in development of chemical engineering processes and design	2.5	1.5
ChBC-75.3	To Evaluate the profitability of process industry projects	2.3	1.4
ChBC-75.4	To create entrepreneurs with business ethics	2	1.2
ChBC-75.5	To perform optimum design of a process	2	1.2
ChBC-76.1	Fundamental understanding of the subject based on various conversion roots	1.8	1.2
ChBC-76.2	Role of biochemical engineers in the development of modern fermentation industries	2.3	1.6
ChBC-76.3	Analysis of the data Obtained during biochemical process.	2.2	1.5
ChBC-76.4	Application of the data in design of the systems for conversion and separation	2.7	1.9

ChBS-41.1	Effective Report Writing	1.7	1.3
ChBS-41.2	Comprehensible Communication Skills	1.4	1.1
ChBS-41.3	Exposure to novel areas of research and latest trends	2.3	1.7
ChBC-83P.1	Generation and analysis of bioprocess data	2.1	1.6
ChBC-83P.2	Applications in bioprocess development	2.4	1.8
ChBC-83P.3	Fundamental understanding of basic practical and equipments used	2	1.5
ChBC-83P.4	Understanding of basic estimation techniques	1.9	1.5
ChBC-53.1	General look at materials and examination of fundamental origin of properties	2	1.4
ChBC-53.2	Basic Characteristics of materials, metals, ceramics and polymers	2	1.4
ChBC-53.3	Functional Materials	1.8	1.3
ChBC-53.4	How materials respond to different applied stresses	1.8	1.3
ChBC-53.5	Failure of Materials, Fractures, Corrosion and Fatigue	2.3	1.7
ChBC-73.1	To understand and model the dynamic behaviour of chemical processes based on their time domain, Laplace domain and frequency domain representation	3	2.0
ChBC-73.2	Analyse properties e.g. speed of response, frequency response of first order and second order systems	2	1.3
ChBC-73.3	To understand the operation of P,I,D and PID controllers and to tune them.	1.8	1.2
ChBC-73.4	Analyse the stability of process systems	2	1.3
ChBC-73.5	Apply control strategies to address safety and environmental issues.	1.7	1.1
ChBC-67.1	To Identify transport properties and analyse the mechanism of momentum, energy and mass transport.	3	1.5
ChBC-67.2	To Apply conservation laws to formulate differential form of equations of change for mass, momentum and heat transfer problems.	2.5	1.3
ChBC-67.3	To solve linear partial differential equations along with appropriate boundary conditions to get the velocity, temperature and concentration profiles of different engineering problems.	2	1.0
ChBC-67.4	Recognise non Newtonian fluids and apply appropriate models to solve them	2	1.0
ChBC-33.1	Ability to understand basic principles of process fluid mechanics .Identify and obtain the values of different fluid properties and relationship between them .	2	1.2
ChBC-33.2	Identify, formulate and solve integrative fluid flow problems with the application of the momentum and energy equations, derive forces acting on fluid and solve numerically.	2.3	1.3

ChBC-33.3	Interpret different forms of pressure measurement and flow measurement, distinguish different types of flow and losses in pipes.	2.3	1.3
ChBC-33.4	Apply dimensional analysis to predict physical parameters that influence the flow in process fluid mechanics.	3	1.7
ChBC-32.1	Fundamental Understanding of material and energy balance applied in the chemical processes	2.5	1.4
ChBC-32.2	Design of processes where material and energy transfer takes place	2.5	1.4
ChBC-32.3	To be able to model material and energy flow around reacting chemical processes.	2.4	1.4
ChBC-42.1	To understand the fundamentals and basic principles of conduction, convection, and radiation heat transfer mechanisms and their applications in various heat transfer equipment in process industries.	1.3	0.7
ChBC-42.2	To formulate, analyse, design and solve the problems related to heat transfer.	1.4	0.8
ChBC-42.3	To learn the thermal analysis and sizing of heat exchangers.	1.8	1.0
ChBC-54.1	Knowledge of the chemical processes along with emphasis on recent technological development.	1.8	1.3
ChBC-54.2	Develop chemical products and processes along with use of different equipments.	1.8	1.3
ChBC-54.3	Ability to deal with apparatus, unit operations, and chemical economics.	2.3	1.6
ChBC-77P.1	Fundamental Understanding of the mass transfer principles and their industrial application	2.2	1.6
ChBC-77P.2	Elaborate on the various equipments to determine the mass transfer coefficients, diffusion criterions.	2.3	1.7
ChBC-77P.3	Derive and verify the mass transfer principles on basis of wetted columns, cooling towers and adsorption towers.	2.4	1.7
ChBE-72.1	Knowledge about production of crude oil, along with its properties and characterization methods.	2	1.4
ChBE-72.2	Understand the process of fractionation and identify the specifications for good quality petroleum	2	1.4
ChBE-72.3	Identify different products obtained from refining process and their best utilization.	3	2.2
ChBE-72.4	Integrate and evaluate problems pertaining to crude oil refinery engineering.	2.3	1.7

Table-3.2.2a

For the Academic Year 2015-2016

CO	Statement	Target Level	Attainment Level
ChBC-31.1	Introduction to Chemical Engineering: Origin, Growth, Relation to other sciences	2	1.3
ChBC-31.2	Knowledge of Unit Operations and Unit Processes and its application to Chemical Process Industries	2.3	1.5
ChBC-31.3	Concerns of Chemical Engineering in areas of Energy, Environment, new materials, health, bioengineering and safety	2.5	1.7
ChBC-31.4	Implementation of Chemical Engineering Basics to simple systems	1.5	1.0
ChBC-31.5	Role of modelling and simulation in chemical engineering	1.75	1.2
ChBC-34.1	1st, 2nd & 3rd Law of Thermodynamics	2	1.3
ChBC-34.2	Entropy of Process	2	1.3
ChBC-34.3	Basic Idea of Reactors	2	1.3
ChBC-34.4	Rate of Reaction (Exothermic & Endothermic)	2	1.3
ChBC-43.1	Proper design and handling of fine particles	1.8	1.0
ChBC-43.2	Characterization of collection of particle	2	1.1
ChBC-43.3	Industrial Screening Equipment	2	1.1
ChBC-43.4	Size Reduction Equipment	2	1.1
ChBC-51.1	Basic Idea of Pressure Vessel Equipment	2	1.6
ChBC-51.2	Basic Idea of Tank	2	1.6
ChBC-51.3	Optimization of Equipment	2	1.6
ChBC-51.4	Design of Tank and Pressure Vessel	2	1.6
ChBC-55.1	Fundamental Understanding of mass transfer based unit operations	2.5	1.7
ChBC-55.2	Analyse and interpret equilibrium data	2.5	1.7
ChBC-55.3	Design of mass transfer equipment	2.4	1.7
ChBC-62.1	Fundamental Understanding of mass transfer based unit operations	2.5	1.6
ChBC-62.2	Interpretation of the thermodynamic and equilibrium data	2.5	1.6
ChBC-62.3	Design of equipment for mass transfer	2.4	1.5
ChBC-64.1	Understanding various effects of energy based systems.	2.4	1.9
ChBC-64.2	Basic knowledge of primary convectional fuels	2.3	1.8
ChBC-64.3	Understanding the utility of using renewable fuels	2.4	1.9
ChBC-64.4	Analysing the energy Audit and management system	2.4	1.9
ChBC-66.1	To impart the basic concept of instrumentation	2	1.3
ChBC-66.2	Analyse the response of instruments	2	1.3
ChBC-66.3	Ability to integrate the knowledge about instruments used for temperature, pressure and fluid flows	2.3	1.5
ChBC-69.1	Correlate class mode learning to real industrial applications	2	1.5
ChBC-69.2	Efficient Writing skills for proper documentation	2	1.5
ChBC-69.3	Comprehensible Communication abilities	2	1.5

ChBC-69.4	Deliverables in terms of power point presentations	2	1.5
ChBC-75.1	To provide the fundamentals of process plant design	2.3	1.4
ChBC-75.2	To provide knowledge of economics involved in development of chemical engineering processes and design	2.5	1.5
ChBC-75.3	To Evaluate the profitability of process industry projects	2.3	1.4
ChBC-75.4	To create entrepreneurs with business ethics	2	1.2
ChBC-75.5	To perform optimum design of a process	2	1.2
ChBS-41.1	Effective Report Writing	1.7	1.3
ChBS-41.2	Comprehensible Communication Skills	1.4	1.1
ChBS-41.3	Exposure to novel areas of research and latest trends	2.3	1.8
ChBC-53.1	General look at materials and examination of fundamental origin of properties	2	1.4
ChBC-53.2	Basic Characteristics of materials, metals, ceramics and polymers	2	1.4
ChBC-53.3	Functional Materials	1.8	1.3
ChBC-53.4	How materials respond to different applied stresses	1.8	1.3
ChBC-53.5	Failure of Materials, Fractures, Corrosion and Fatigue	2.3	1.7
ChBC-73.1	To understand and model the dynamic behavior of chemical processes based on their time domain, Laplace domain and frequency domain representation	3	1.9
ChBC-73.2	Analyze properties eg speed of response, frequency response of first order and second order systems	2	1.3
ChBC-73.3	to understand the operation of P,I,D and PID controllers and to tune them.	1.8	1.2
ChBC-73.4	Analyse the stability of process systems	2	1.3
ChBC-73.5	Apply control strategies to address safety and environmental issues.	1.7	1.1
ChBC-67.1	To Identify transport properties and analyse the mechanism of momentum, energy and mass transport.	3	1.6
ChBC-67.2	To Apply conservation laws to formulate differential form of equations of change for mass, momentum and heat transfer problems.	2.5	1.3
ChBC-67.3	To solve linear partial differential equations along with appropriate boundary conditions to get the velocity, temperature and concentration profiles of different engineering problems.	2	1.1
ChBC-67.4	Recognise non Newtonian fluids and apply appropriate models to solve them	2	1.1
ChBC-33.1	Ability to understand basic principles of process fluid mechanics .Identify and obtain the values of different fluid properties and relationship between them.	2	1.4
ChBC-33.2	Identify, formulate and solve integrative fluid flow problems with the application of the momentum and energy equations, derive forces acting on fluid and solve numerically.	2.3	1.7

ChBC-33.3	Interpret different forms of pressure measurement and flow measurement, distinguish different types of flow and losses in pipes.	2.3	1.7
ChBC-33.4	Apply dimensional analysis to predict physical parameters that influence the flow in process fluid mechanics.	3	2.2
ChBC-41.1	Predicting thermodynamic properties, fugacity, fugacity coefficients and vapor-liquid equilibrium (VLE) data using generalized equations of state.	2.5	1.4
ChBC-41.2	Identify and understand the principles of chemical equilibrium thermodynamics to solve multiphase equilibria problems	2.5	1.4
ChBC-41.3	Compute phase equilibrium data, bubble and flash point	3	1.7
ChBC-41.4	Examine the effect of inefficiencies in each step of steady state flow process.	3	1.7
ChBC-32.1	Fundamental Understanding of material and energy balance applied in the chemical processes	2.5	1.6
ChBC-32.2	Design of processes where material and energy transfer takes place	2.5	1.6
ChBC-32.3	To be able to model material and energy flow around reacting chemical processes.	2.4	1.5
ChBC-42.1	To understand the fundamentals and basic principles of conduction, convection, and radiation heat transfer mechanisms and their applications in various heat transfer equipment in process industries.	1.3	0.8
ChBC-42.2	To formulate, analyse, design and solve the problems related to heat transfer.	1.4	0.8
ChBC-42.3	To learn the thermal analysis and sizing of heat exchangers.	1.8	1.1
ChBC-54.1	Knowledge of the chemical processes along with emphasis on recent technological development.	1.8	1.4
ChBC-54.2	Develop chemical products and processes along with use of different equipments.	1.8	1.4
ChBC-54.3	Ability to deal with apparatus, unit operations, and chemical economics.	2.3	1.8
ChBC-77P.1	Fundamental Understanding of the mass transfer principles and their industrial application	2.2	1.7
ChBC-77P.2	Elaborate on the various equipments to determine the mass transfer coefficients, diffusion criterions.	2.3	1.8
ChBC-77P.3	Derive and verify the mass transfer principles on basis of wetted columns, cooling towers and adsorption towers.	2.4	1.9
ChBE-72.1	Knowledge about production of crude oil, along with its properties and characterization methods.	2	1.6
ChBE-72.2	Understand the process of fractionation and identify the specifications for good quality petroleum	2	1.6

ChBE-72.3	Identify different products obtained from refining process and their best utilization.	3	2.4
ChBE-72.4	Integrate and evaluate problems pertaining to crude oil refinery engineering.	2.3	1.8

Table-3.2.2b**For the Academic Year 2016-2017**

CO	Statement	Target Level	Attainment Level
ChBC-31.1	Introduction to Chemical Engineering: Origin, Growth, Relation to other sciences	2	1.3
ChBC-31.2	Knowledge of Unit Operations and Unit Processes and its application to Chemical Process Industries	2.3	1.5
ChBC-31.3	Concerns of Chemical Engineering in areas of Energy, Environment, new materials, health, bioengineering and safety	2.5	1.7
ChBC-31.4	Implementation of Chemical Engineering Basics to simple systems	1.5	1.0
ChBC-31.5	Role of modelling and simulation in chemical engineering	1.75	1.2
ChBC-34.1	1st, 2nd & 3rd Law of Thermodynamics	2	1.3
ChBC-34.2	Entropy of Process	2	1.3
ChBC-34.3	Basic Idea of Reactors	2	1.3
ChBC-34.4	Rate of Reaction (Exothermic & Endothermic)	2	1.3
ChBC-43.1	Proper design and handling of fine particles	1.8	1.1
ChBC-43.2	Characterization of collection of particle	2	1.3
ChBC-43.3	Industrial screening Equipment	2	1.3
ChBC-43.4	Size reduction equipment	2	1.3
ChBC-51.1	Basic Idea of Pressure Vessel Equipment	2	1.6
ChBC-51.2	Basic Idea of tank	2	1.6
ChBC-51.3	Optimization of Equipment	2	1.6
ChBC-51.4	Design of Tank and Pressure Vessel	2	1.6
ChBC-55.1	Fundamental Understanding of mass transfer based unit operations	2.5	1.8
ChBC-55.2	Analyse and interpret equilibrium data	2.5	1.8
ChBC-55.3	Design of mass transfer equipment	2.4	1.7
ChBC-61.1	Basic Idea of Shell and Tube Heat Exchanger	2	1.3
ChBC-61.2	Design of Shell and Tube Heat Exchanger	2	1.3
ChBC-61.3	Basic Idea of LMTD & NTU	2	1.3
ChBC-61.4	To Find out Over All Heat Transfer Coefficient	2	1.3
ChBC-62.1	Fundamental Understanding of mass transfer based unit operations	2.5	1.6
ChBC-62.2	Interpretation of the thermodynamic and equilibrium data	2.5	1.6
ChBC-62.3	Design of equipment for mass transfer	2.4	1.5
ChBC-64.1	Understanding various effects of energy based systems.	2.4	1.8
ChBC-64.2	Basic knowledge of primary convectional fuels	2.3	1.7

ChBC-64.3	Understanding the utility of using renewable fuels	2.4	1.8
ChBC-64.4	Analysing the energy Audit and management system	2.4	1.8
ChBC-66.1	To impart the basic concept of instrumentation	2	1.4
ChBC-66.2	Analyse the response of instruments	2	1.4
ChBC-66.3	Ability to integrate the knowledge about instruments used for temperature, pressure and fluid flows	2.3	1.6
ChBC-69.1	Correlate class mode learning to real industrial applications	2	1.6
ChBC-69.2	Efficient Writing skills for proper documentation	2	1.6
ChBC-69.3	Comprehensible Communication abilities	2	1.6
ChBC-69.4	Deliverables in terms of power point presentations	2	1.6
ChBC-75.1	To provide the fundamentals of process plant design	2.3	1.6
ChBC-75.2	To provide knowledge of economics involved in development of chemical engineering processes and design	2.5	1.8
ChBC-75.3	To Evaluate the profitability of process industry projects	2.3	1.6
ChBC-75.4	To create entrepreneurs with business ethics	2	1.4
ChBC-75.5	To perform optimum design of a process	2	1.4
ChBC-76.1	Fundamental understanding of the subject based on various conversion roots	1.8	1.2
ChBC-76.2	Role of biochemical engineers in the development of modern fermentation industries	2.3	1.5
ChBC-76.3	Analysis of the data Obtained during biochemical process.	2.2	1.5
ChBC-76.4	Application of the data in design of the systems for conversion and separation	2.7	1.8
ChBS-41.1	Effective Report Writing	1.7	1.3
ChBS-41.2	Comprehensible Communication Skills	1.4	1.1
ChBS-41.3	Exposure to novel areas of research and latest trends	2.3	1.7
ChBC-83P.1	Generation and analysis of bioprocess data	2.1	1.6
ChBC-83P.2	Applications in bioprocess development	2.4	1.8
ChBC-83P.3	Fundamental understanding of basic practical's and equipments used	2	1.5
ChBC-83P.4	Understanding of basic estimation techniques	1.9	1.4
ChBC-53.1	General look at materials and examination of fundamental origin of properties	2	1.4
ChBC-53.2	Basic Characteristics of materials, metals, ceramics and polymers	2	1.4
ChBC-53.3	Functional Materials	1.8	1.3
ChBC-53.4	How materials respond to different applied stresses	1.8	1.3
ChBC-53.5	Failure of Materials, Fractures, Corrosion and Fatigue	2.3	1.6
ChBC-73.1	To understand and model the dynamic behaviour of chemical processes based on their time domain, Laplace domain and frequency domain representation	3	2.1
ChBC-73.2	Analyse properties e.g. speed of response, frequency response of first order and second order systems	2	1.4

ChBC-73.3	To understand the operation of PID and PID controllers and to tune them.	1.8	1.3
ChBC-73.4	Analyse the stability of process systems	2	1.4
ChBC-73.5	Apply control strategies to address safety and environmental issues.	1.7	1.2
ChBC-67.1	To Identify transport properties and analyse the mechanism of momentum, energy and mass transport.	3	1.9
ChBC-67.2	To apply conservation laws to formulate differential form of equations of change for mass, momentum and heat transfer problems.	2.5	1.6
ChBC-67.3	To solve linear partial differential equations along with appropriate boundary conditions to get the velocity, temperature and concentration profiles of different engineering problems.	2	1.3
ChBC-67.4	Recognise non Newtonian fluids and apply appropriate models to solve them	2	1.3
ChBC-33.1	Ability to understand basic principles of process fluid mechanics .Identify and obtain the values of different fluid properties and relationship between them.	2	1.4
ChBC-33.2	Identify, formulate and solve integrative fluid flow problems with the application of the momentum and energy equations, derive forces acting on fluid and solve numerically.	2.3	1.6
ChBC-33.3	Interpret different forms of pressure measurement and flow measurement, distinguish different types of flow and losses in pipes.	2.3	1.6
ChBC-33.4	Apply dimensional analysis to predict physical parameters that influence the flow in process fluid mechanics.	3	2.1
ChBC-41.1	Predicting thermodynamic properties, fugacity, fugacity coefficients and vapor-liquid equilibrium (VLE) data using generalized equations of state.	2.5	1.7
ChBC-41.2	Identify and understand the principles of chemical equilibrium thermodynamics to solve multiphase equilibria problems.	2.5	1.7
ChBC-41.3	Compute phase equilibrium data, bubble and flash point.	3	2.0
ChBC-41.4	Examine the effect of inefficiencies in each step of steady state flow process.	3	2.0
ChBC-32.1	Fundamental Understanding of material and energy balance applied in the chemical processes.	2.5	1.3
ChBC-32.2	Design of processes where material and energy transfer takes place.	2.5	1.3
ChBC-32.3	To be able to model material and energy flow around reacting chemical processes.	2.4	1.3

ChBC-42.1	To understand the fundamentals and basic principles of conduction, convection, and radiation heat transfer mechanisms and their applications in various heat transfer equipment in process industries.	1.3	0.8
ChBC-42.2	To formulate, analyze, design and solve the problems related to heat transfer.	1.4	0.8
ChBC-42.3	To learn the thermal analysis and sizing of heat exchangers.	1.8	1.0
ChBC-54.1	Knowledge of the chemical processes along with emphasis on recent technological development.	1.8	1.4
ChBC-54.2	Develop chemical products and processes along with use of different equipments.	1.8	1.4
ChBC-54.3	Ability to deal with apparatus, unit operations, and chemical economics.	2.3	1.8
ChBC-77P.1	Fundamental Understanding of the mass transfer principles and their industrial application.	2.2	1.7
ChBC-77P.2	Elaborate on the various equipments to determine the mass transfer coefficients, diffusion criterions.	2.3	1.8
ChBC-77P.3	Derive and verify the mass transfer principles on basis of wetted columns, cooling towers and adsorption towers.	2.4	1.8
ChBE-72.1	Knowledge about production of crude oil, along with its properties and characterization methods.	2	1.5
ChBE-72.2	Understand the process of fractionation and identify the specifications for good quality petroleum.	2	1.5
ChBE-72.3	Identify different products obtained from refining process and their best utilization.	3	2.3
ChBE-72.4	Integrate and evaluate problems pertaining to crude oil refinery engineering.	2.3	1.8

Table-3.2.2c

3.3. Attainment of Program Outcomes and Program Specific Outcomes (75)

Marks Claimed	75
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3.3.1. Describe assessment tools and processes used for measuring the attainment of each Program Outcome and Program Specific Outcomes (10)

Claimed 10

Attainment Level (A.L.) for each Program Outcome was calculated by multiplying the average PO assessment mapping given for each course outcome with the cumulative average (C.A.) of direct assessment techniques obtained for the said course in the respective academic year, as per the following formula

$$A.L. = C.A. \times \langle P.O. \text{ assessment} \rangle$$

A.L. is the attainment level

C.A. is the cumulative average for a course which is calculated as follows:

$$C.A. = \frac{10 \times [A+] + 9 \times [A] + 8 \times [B+] + 7 \times [B] + 6 \times [C+] + 5 \times [C]}{\text{Total Numbers of Students}}$$

The overall attainment level was then calculated by taking a weighted average of the attainment levels obtained by both the direct and indirect assessment techniques.

$$A. L_{\text{overall}} = 0.8 \times A. L_{\text{Direct}} + 0.2 \times A. L_{\text{indirect}}$$

3.3.2. Provide Results of Evaluation of each PO & PSO (65)

Claimed 65

PO Attainment Level

For the Academic year 2014-15

Course No.	Course Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CHBS-41	Seminar	2.3	1.1	0.8	0.8	0.0	0.8	0.8	0.0	0.8	2.3	0.0	0.0
ChE-301	Introduction to Chemical Engg	2.0	1.8	2.0	1.3	0.7	0.0	0.0	0.0	0.7	0.0	0.0	0.0
ChE-302	Mechanical Operations	1.4	1.4	0.8	0.0	1.2	1.2	0.0	0.0	0.0	0.0	0.6	0.0
ChE-401	Momentum Transfer	1.7	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ChE-403	Mass and Energy Balance	1.8	1.7	1.8	1.2	0.6	0.0	0.0	0.0	0.6	0.0	0.0	0.0
ChE-404	Heat and power Engg	1.0	1.1	1.5	1.0	0.0	0.0	0.0	0.0	0.9	1.1	0.0	0.6
ChE-502P	Heat transfer Lab	2.2	2.2	0.7	0.0	0.0	0.0	0.0	0.0	2.2	2.2	0.0	0.0
ChE-503	Process Equipment Design	2.1	1.7	1.4	0.9	0.0	0.0	0.0	0.0	0.7	0.7	1.0	0.0
ChE-504	Chemical Engg Thermodynamics - I	1.9	0.6	1.3	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ChE-506	Material Science and Technology	1.9	1.2	1.2	0.0	0.0	0.7	0.7	0.0	0.7	1.2	0.7	1.4
ChE-702P	Chemical Reaction Engg Lab	2.2	2.2	0.7	0.0	0.0	0.0	0.0	0.0	2.2	2.2	0.0	0.0
ChE-703	Chemical Engg Thermodynamics - II	1.6	0.7	0.0	0.0	1.4	1.6	1.2	0.7	1.4	0.7	0.7	0.7
ChE-704P	Mass Transfer lab	2.2	2.2	0.7	0.0	0.0	0.0	0.0	0.0	2.2	2.2	0.0	0.0
ChE-803	Biochemical Engg	2.1	2.1	1.9	1.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ChE-805P	Process Dynamics and Control Lab	2.4	2.4	0.8	0.0	0.0	0.0	0.0	0.0	2.4	2.4	0.0	0.0
ChE-810	Petroleum and Petroleum Technology	2.4	0.8	0.0	0.0	0.8	0.0	0.8	0.0	0.0	0.0	0.0	0.0
ChE-601	Chemical Technology – I	2.1	0.7	0.0	0.0	0.7	0.0	0.7	0.0	0.0	0.0	0.0	0.0
ChE-501	Mass Transfer-I	1.8	1.7	1.8	1.2	0.6	0.0	0.0	0.0	0.6	0.0	0.0	0.0
ChE-604	Mass Transfer – II	1.8	1.9	2.1	1.4	0.7	0.0	0.0	0.0	0.7	0.0	0.0	0.0
ChE-606	Process Instrumentation	2.0	1.7	0.7	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.0	0.0
ChE-607	Transport phenomena	1.1	1.3	0.5	0.8	0.0	0.0	0.0	0.0	1.0	0.5	0.0	0.0
ChE-705	Process Dynamics and Control	2.0	1.5	1.0	0.7	0.7	0.0	0.7	0.0	1.4	0.7	0.0	0.0
ChE-706	Industrial Economics and Management	1.4	0.6	0.0	0.0	1.2	1.4	1.0	0.6	1.2	0.6	0.6	0.6
ChE-804P	Biochemical Engg Lab	2.3	2.3	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ChE-402P	Momentum Transfer Lab	2.3	2.3	0.8	0.0	0.0	0.0	0.0	0.0	2.3	2.3	0.0	0.0
ChE-603	Industrial Training and Presentation	1.1	1.1	0.8	0.8	0.8	0.8	0.0	0.8	2.3	2.3	0.0	0.0
Direct Assessment Attainment Level (80%)		1.9	1.5	0.9	0.5	0.4	0.3	0.2	0.1	0.9	0.8	0.1	0.1
Indirect Assessment Attainment level (20%)		1.5	1.6	1.8	2.0	1.3	2.2	2.5	2.0	1.7	1.3	1.8	2.0
Overall PO Attainment Level		1.8	1.5	1.1	0.8	0.6	0.6	0.7	0.5	1.1	0.9	0.5	0.5
Target PO Level		2.5	1.9	1.8	1.1	1.0	1.4	0.9	0.6	0.4	0.5	1.2	0.9

Table-B.3.3.2a

For the Academic Year 2015-2016

Course No.	Course name	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
ChBC-31	Introduction to Chemical Eng.	2.0	1.8	2.0	1.3	0.7	0.0	0.0	0.0	0.7	0.0	0.0	0.0
ChBC-32	Material and Energy Balance	1.9	0.8	0.8	0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ChBC-33	Process Fluid Mechanics	2.2	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ChBC-34	Thermodynamics & chemical kinetics	2.1	0.7	1.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ChBC-42	Heat Transfer	1.1	1.2	1.6	1.0	0.0	0.0	0.0	0.0	0.9	1.2	0.0	0.6
ChBC-43	Mechanical Operations	1.3	1.3	0.8	0.0	1.1	1.1	0.0	0.0	0.0	0.0	0.6	0.0
ChBC-44P	Fluid Mechanics and Mechanical Operations Lab	2.2	2.2	0.7	0.0	0.0	0.0	0.0	0.0	2.2	2.2	0.0	0.0
CHBS-41	Seminar	2.3	1.2	0.8	0.8	0.0	0.8	0.8	0.0	0.8	2.3	0.0	0.0
ChE-501	Mass Transfer – I	1.9	1.7	1.9	1.2	0.6	0.0	0.0	0.0	0.6	0.0	0.0	0.0
ChE-502P	Heat Transfer Lab	2.4	2.4	0.8	0.0	0.0	0.0	0.0	0.0	2.4	2.4	0.0	0.0
ChE-503	Process Equipment Design	2.1	1.8	1.4	0.9	0.0	0.0	0.0	0.0	0.7	0.7	1.1	0.0
ChE-506	Material Science and Technology	1.8	1.1	1.2	0.0	0.0	0.7	0.7	0.0	0.7	1.2	0.7	1.4
ChE-601	Chemical Technology-I	1.9	0.6	0.0	0.0	0.6	0.0	0.6	0.0	0.0	0.0	0.0	0.0
ChE-603	Industrial Training and Presentations	1.1	1.1	0.7	0.7	0.7	0.7	0.0	0.7	2.1	2.1	0.0	0.0
ChE-604	Mass Transfer- II	1.9	1.9	2.1	1.4	0.7	0.0	0.0	0.0	0.7	0.0	0.0	0.0
ChE-606	Process Instrumentation	2.0	1.7	0.7	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.0	0.0
ChE-607	Transport Phenomena	1.2	1.3	0.5	0.8	0.0	0.0	0.0	0.0	1.1	0.5	0.0	0.0
ChE-702P	Chemical Reaction Eng. Lab.	2.3	2.3	0.8	0.0	0.0	0.0	0.0	0.0	2.3	2.3	0.0	0.0
ChE-703	Chemical Technology – II	1.7	0.7	0.0	0.0	1.5	1.7	1.3	0.7	1.5	0.7	0.7	0.7
ChE-704P	Mass Transfer Lab.	2.4	2.4	0.8	0.0	0.0	0.0	0.0	0.0	2.4	2.4	0.0	0.0
ChE-705	Process Dynamics and Control	1.9	1.4	1.0	0.6	0.6	0.0	0.6	0.0	1.3	0.6	0.0	0.0
ChE-706	Industrial Economics and Management	1.5	0.6	0.0	0.0	1.3	1.5	1.1	0.6	1.3	0.6	0.6	0.6
ChE-803	Biochemical Engg	2.1	2.1	1.9	1.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ChE-805P	Process Dynamics and Control Lab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Direct Assessment Attainment Level (80%)		1.8	1.5	0.9	0.4	0.3	0.3	0.2	0.1	0.9	0.9	0.1	0.1
Indirect Assessment Attainment level (20%)		1.5	1.6	1.8	2.0	1.3	2.2	2.5	2.0	1.7	1.3	1.8	2.0
Overall PO Attainment Level		1.8	1.5	1.1	0.8	0.5	0.6	0.7	0.5	1.1	0.9	0.5	0.5
Target PO Level		2.5	1.9	1.9	1.2	0.9	1.5	0.9	0.6	0.4	0.5	1.3	0.9

Table-B.3.3.2b

For the Academic Year 2016-2017

Course No.	Course name	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
ChBC 56P	Heat Transfer Lab	2.2	2.2	0.7	0.0	0.0	0.0	0.0	0.0	2.2	2.2	0.0	0.0
ChBC-31	Introduction to Chemical Engg	1.7	1.5	1.7	1.1	0.6	0.0	0.0	0.0	0.6	0.0	0.0	0.0
ChBC-32	Material and Energy Balance	1.6	1.5	1.6	1.1	0.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0
ChBC-33	Process Fluid Mechanics	2.1	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ChBC-34	Thermodynamics & Chemical Kinetics	2.0	0.7	1.3	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ChBC-42	Heat Transfer	1.0	1.2	1.5	1.0	0.0	0.0	0.0	0.0	0.9	1.2	0.0	0.6
ChBC-43	Mechanical Operations	1.5	1.5	0.8	0.0	1.3	1.3	0.0	0.0	0.0	0.0	0.6	0.0
ChBC-44P	FM and MO lab	2.0	2.0	0.7	0.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	0.0
ChBC-51	Process Equipment Design-I	2.4	2.0	1.6	1.1	0.0	0.0	0.0	0.0	0.8	0.8	1.2	0.0
ChBC-53	Material Science and Technology	1.8	1.1	1.2	0.0	0.0	0.7	0.7	0.0	0.7	1.2	0.7	1.4
ChBC-54	Chemical Technology - I	2.3	0.8	0.0	0.0	0.8	0.0	0.8	0.0	0.0	0.0	0.0	0.0
ChBC-55	Mass Transfer-I	2.1	1.9	2.1	1.4	0.7	0.0	0.0	0.0	0.7	0.0	0.0	0.0
ChBC-61	Process Equipment Design –II	1.9	1.6	1.3	0.8	0.0	0.0	0.0	0.0	0.6	0.6	0.9	0.0
ChBC-62	Mass Transfer-II	1.9	1.9	2.1	1.4	0.7	0.0	0.0	0.0	0.7	0.0	0.0	0.0
ChBC-63	chemical Technology - II	1.5	0.7	0.0	0.0	1.3	1.5	1.1	0.7	1.3	0.7	0.7	0.7
ChBC-66	Process Instrumentation	2.0	1.7	0.7	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.0	0.0
ChBC-67	Transport Phenomena	1.4	1.6	0.6	1.0	0.0	0.0	0.0	0.0	1.3	0.6	0.0	0.0
ChBC-69	Industrial Training and Presentations	1.2	1.2	0.8	0.8	0.8	0.8	0.0	0.8	2.3	2.3	0.0	0.0
CHE-702P	Chemical Reaction Engg Lab	2.3	2.3	0.8	0.0	0.0	0.0	0.0	0.0	2.3	2.3	0.0	0.0
CHE-704P	Mass Transfer Lab	2.3	2.3	0.8	0.0	0.0	0.0	0.0	0.0	2.3	2.3	0.0	0.0
CHE-705	Process Dynamics and Control	2.1	1.6	1.1	0.7	0.7	0.0	0.7	0.0	1.4	0.7	0.0	0.0
CHE-706	Industrial Economics and Management	1.9	0.8	0.0	0.0	1.7	1.9	1.5	0.8	1.7	0.8	0.8	0.8
CHE-802	Seminar	23.4	11.7	7.8	7.8	0.0	7.8	7.8	0.0	7.8	23.4	0.0	0.0
CHE-803	Biochemical Engg	2.0	2.0	1.8	1.3	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CHE-804P	Biochemical Engg lab	2.3	2.3	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CHE-805P	Process Dynamics and Control Lab	2.2	2.2	0.7	0.0	0.0	0.0	0.0	0.0	2.2	2.2	0.0	0.0
Direct Assessment Attainment Level (80%)		2.7	1.9	1.2	0.7	0.4	0.5	0.5	0.1	1.3	1.6	0.2	0.1
Indirect Assessment Attainment level (20%)		1.5	1.6	1.8	2.0	1.3	2.2	2.5	2.0	1.7	1.3	1.8	2.0
Overall PO Attainment Level		2.5	1.9	1.3	1.0	0.6	0.8	0.9	0.5	1.3	1.6	0.5	0.5
Target PO Level		2.5	1.9	1.8	1.1	1.0	1.4	1.0	0.6	0.4	0.5	1.3	1.0

Table-B.3.3.2c**PSO Attainment Level****For academic year 2014-15**

Course no	Course name	PSO 1	PSO 2	PSO 3
CHBS-41	Seminar	0.69	1.18	0.56
ChE-301	Introduction to Chemical Engg	0.8	0.19	1.11
ChE-302	Mechanical Operations	0.79	0.17	0.74
ChE-401	Momentum Transfer	0.27	0	0.13
ChE-403	Mass and Energy Balance	0.73	0.17	1.01
ChE-404	Heat and power Engg	0.48	0.73	0.67

ChE-502p	Heat transfer Lab	0.45	1.59	0.44
ChE-503	Process Equipment Design	0.7	0.79	0.68
ChE-504	Chemical Engg Thermodynamics - I	0.46	0	0.51
ChE-506	Material Science and Technology	0.77	0.93	0.62
ChE-702p	Chemical Reaction Engg Lab	0.45	1.56	0.44
ChE-703	Chemical Engg Thermodynamics - II	0.98	0.91	0.74
ChE-704p	Mass Transfer lab	0.44	1.54	0.43
ChE-803	Biochemical Engg	0.84	0	1.14
ChE-805p	Process Dynamics and Control Lab	0.48	1.69	0.47
ChE-810	Petroleum and petroleum technology	0.53	0	0.47
ChE-601	Chemical Technology – I	0.47	0	0.43
ChE-501	Mass Transfer-I	0.73	0.17	1.01
ChE-604	Mass Transfer – II	0.82	0.2	1.17
ChE-606	Process Instrumentation	0.39	0.48	0.37
ChE-607	Transport phenomena	0.33	0.5	0.35
ChE-705	Process Dynamics and Control	0.69	0.68	0.87
ChE-706	Industrial economics and management	0.81	0.75	0.61
ChE-804P	Biochemical Engg Lab	0.48	0	0.47
ChE-402P	Momentum Transfer Lab	0.46	1.61	0.45
ChE-603	Industrial Training and presentation	0.6	1.61	0.64
Direct Assessment Attainment Level (80%)		0.554	0.656	0.585
Indirect Assessment Attainment level (20%)		1.85	1.56	1.8
Overall PSO Attainment Level		0.8	0.8	0.8
Target PSO Level		1.2	0.5	1.2

Table-B.3.3.2d

For academic year 2015-16

Course no	Course name	PSO 1	PSO 2	PSO 3
ChBC-31	Introduction to Chemical Engg	0.8	0.2	1.1
ChBC-32	Material and Energy Balance	0.5	0	0.5
ChBC-33	Process Fluid Mechanics	0.33	0.00	0.16
ChBC-34	Thermodynamics & chemical kinetics	0.5	0	0.6
ChBC-42	Heat Transfer	0.50	0.76	0.69
ChBC-43	Mechanical Operations	0.75	0.16	0.70
ChBC-44P	Fluid Mechanics and Mechanical Operations Lab	0.45	1.59	0.44
CHBS-41	Seminar	0.71	1.21	0.58
ChE-501	Mass Transfer – I	0.75	0.18	1.04
ChE-502P	Heat Transfer Lab	0.49	1.71	0.48
ChE-503	Process Equipment Design	0.71	0.80	0.69
ChE-506	Material Science and Technology	0.73	0.89	0.59
ChE-601	Chemical Technology-I	0.42	0.00	0.38
ChE-603	Industrial Training and Presentations	0.57	1.52	0.60
ChE-604	Mass Transfer- II	0.82	0.20	1.17
ChE-606	Process Instrumentation	0.39	0.48	0.37
ChE-607	Transport Phenomena	0.35	0.53	0.37
ChE-702p	Chemical Reaction Engg Lab	0.46	1.63	0.46
ChE-703	Chemical Technology – II	1.02	0.94	0.77
ChE-704p	Mass Transfer Lab	0.48	1.69	0.47
ChE-705	Process Dynamics and Control	0.65	0.64	0.82
ChE-706	Industrial Economics and Management	0.89	0.82	0.67

ChE-803	Biochemical Engg	0.84	0.00	1.14
ChE-805p	Biochemical Engg Lab	0.48	0.00	0.47
Direct Assessment Attainment Level (80%)		0.5	0.6	0.5
Indirect Assessment Attainment level (20%)		1.9	1.6	1.8
Overall PSO Attainment Level		0.78	0.81	0.77
Target PSO Level		1.2	0.5	1.1

Table-B.3.3.2e

For academic year 2016-17

Course no	Course name	PSO 1	PSO 2	PSO 3
ChBC-31	Introduction to Chemical Engg	0.7	0.2	0.9
ChBC-32	Material and Energy Balance	0.6	0.2	0.9
ChBC-33	Process Fluid Mechanics	0.3	0.0	0.2
ChBC-34	Thermodynamics & chemical kinetics	0.5	0.0	0.5
ChBC-42	Heat Transfer	0.5	0.7	0.7
ChBC-43	Mechanical Operations	0.8	0.2	0.8
ChBC-44P	FM and MO lab	0.4	1.4	0.4
ChBC-51	Process Equipment Design-I	0.8	0.9	0.8
ChBC-53	Material Science and Technology	0.8	0.9	0.6
ChBC-54	Chemical Technology - I	0.5	0.0	0.5
ChBC-55	Mass Transfer-I	0.8	0.2	1.2
ChBC-61	Process Equipment Design –II	0.6	0.7	0.6
ChBC-62	Mass Transfer-II	0.8	0.2	1.2
ChBC-63	chemical Technology - II	0.9	0.8	0.7
ChBC-66	Process Instrumentation	0.4	0.5	0.4
ChBC-67	Transport Phenomena	0.4	0.6	0.4
ChBC-69	Industrial Training and Presentations	0.6	1.7	0.7
CHE-702P	Chemical Reaction Engg Lab	0.5	1.6	0.5
CHE-704P	Mass Transfer Lab	0.5	1.7	0.5
CHE-705	Process Dynamics and Control	0.7	0.7	0.9
CHE-706	Industrial Economics and Management	1.2	1.1	0.9
CHE-802	Seminar	7.2	12.3	5.9
CHE-803	Biochemical Engg	0.8	0.0	1.1
CHE-804P	Biochemical Engg lab	0.5	0.0	0.5
CHE-805P	Process Dynamics and Control Lab	0.5	1.6	0.4
ChE-810	Petroleum and petroleum technology	0.5	0.0	0.4
Direct Assessment Attainment Level (80%)		0.9	1.1	0.8
Indirect Assessment Attainment level (20%)		1.9	1.6	1.8
Overall PSO Attainment Level		1.1	1.2	1.0
Target PSO Level		1.3	0.6	1.3

Table-B.3.3.2f

CRITERION 4	Students Performance	100
Marks Claimed		88

Item	CAY	CAYm1	CAYm2
Sanctioned intake in the program (N)	77	77	77
Total no of admitted students in the first year minus no of students migrated to the other programs/ institutions, plus no of students migrated in the program (N1)	57	34	60
No of students admitted in the 2 nd year in the same batch via lateral entry (N2)	NIL	NIL	NIL
Separate division students, if applicable (N3)	NIL	NIL	NIL
Total no of students admitted in the program (N1+N2+N3)	57	34	60

Table- B.4a

CAY – Current Academic Year

CAYm1 - Current Academic Year minus1

CAYm2 - Current Academic Year minus2

LYG - Last Year Graduate

LYGm1 - Last Year Graduate minus1

LYGm2 - Last Year Graduate minus2

Year of Entry	N1+N2+N3 (As defined above)	Number of students who have successfully graduated without backlogs in any semester/ year of study. (Without backlog means no compartment or failures in any semester/ year of study)			
		1 year	II year	III year	IV year
CAY	57				
CAYm1	34	30			
CAYm2	60	30	26		
CAYm3	64	45	44	42	
LYG	49	33	27	27	27
LYGm1	65	49	43	42	42
LYGm2	71	55	47	44	43

Table- B.4b

Year of entry	N1+N2+N3 (As defined above)	Number of students who have successfully graduated (With backlog in Stipulated period of study)			
		1 year	II year	III year	IV year
CAY	57				
CAYm1	34	30			
CAYm2	60	32	47		
CAYm3	64	45	59	57	
LYG	49	37	39	39	48
LYGm1	65	41	49	51	60
LYGm2	71	55	51	61	63

Table- B.4c**4.1 Enrolment Ratio = N1/N (20)****Claimed 20**

Item	Marks
(Students enrolled at the first year Level on average basis during the last three years starting from current academic year)	
$\geq 90\%$ student enrolled	20

4.2 Success rate in the stipulated period in the program (20)

Claimed 15

4.2.1 Success Rate without backlogs in any semester/ year of study (15)

Claimed 10

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

Average SI = mean of success index (SI) for past three batches

Success rate without backlogs in any semester = $15 \times$ mean of success index (SI) for past three batches

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

Items	2013-2014 (LYG)	2012-2013 (LYGm1)	2011-2012 (LYGm2)
No of students admitted in the corresponding 1 st year + admitted 2 nd year via lateral entry and separate division, if applicable	49	65	71
No of students who have graduated without backlogs in the stipulated period	27	42	43
Success Index(SI)	0.55	0.65	0.60

Average SI = 0.60

Table-B.4.2.1

Success rate = $15 \times 0.60 = 9.0$

4.2.2 Success Rate with backlogs in stipulated period of study (5)

Claimed 05

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

Average SI = mean of success index (SI) for past three batches

Success rate = $5 \times$ mean of success index (SI) for past three batches

Items	2013-2014 (LYG)	2012-2013 (LYGm1)	2011-2012 (LYGm2)
No of students admitted in the corresponding 1 st year + admitted 2 nd year via lateral entry and separate division, if applicable	49	65	71
No of students who have graduated with backlogs in the stipulated period	48	60	63
Success Index(SI)	0.98	0.92	0.89

Table-B.4.2.2

Average SI = 0.93

Success rate = $5 \times 0.93 = 4.65$

4.3 Academic performance in Second year (10)**Claimed 08**

Academic performance = Average API (Academic Performance Index)

Where $API = ((\text{Mean of second year grade point average of all successful students on a 10 points scale}) \text{ or } (\text{Mean of the percentage of marks of all successful student in second year}/10)) * (\text{no of successful students} / \text{no of students appeared in the examination})$

Successful students are those who are permitted to proceed to the third year:

Academic performance	CAYm1	CAYm2	CAYm3
Mean of CGPA or percentage of all successful students(X)	7.415	7.087	7.130
Total no of successful students(Y)	34	60	64
Total no of students appeared in the examination(Z)	34	60	64
$API = X*(Y/Z)$	7.415	7.087	7.130
Average API = $(AP1+AP2+AP3)/3$	7.210		

Table B.4.3**4.4 Placement and Higher Studies, Entrepreneurship (30)****Claimed 25****Assessment Points = 30×Average placement**

Items	LAY	LAYm1	LAYm2
Total no of final year students(N)	48	65	66
Students placed in companies/ Government Sector (X)	09	17	16
Students admitted in higher studies with valid qualifying scores(GATE/ equivalent State/ National Level Tests, GRE, GMAT etc.) (Y)	08	13	12
Students turned entrepreneur in engg/tech(Z)	00	00	00
Total = (X+Y+Z)	17	30	28
Placement Index = $(X+Y+Z)/ N$	0.35	0.46	0.42
Average Assessment Points $(P1+P2+P3)/3$	0.41		

Table-B.4.4**4.4(a) Provide the placement data in the below mentioned format with the name of the program and the assessment year:**

Programs Name and Assessment Year				
Sl. No.	Name of the Student Placed	Enrollment No.	Name of the Employer	Appointment Letter Reference No. with Date /Date of Joining
1	Priyanka Gupta	CHEM/21/2013	Vedanta	25July -2017
2	Rishabh Sharma	CHEM/38/2013	Bharat Aluminum Company	25July -2017
3	Anurag Alok	CHEM/4/2013	GREY-B	August -2017
4	Keshav Kumar	CHEM/01/2013	PHD(IIT Guwahati)	176107017
5	Ashish Singh	CHEM/43/2013	M.Tech(IIT – Kharagpur)	August -2017
6	Aditya Prakash	CHEM/50/2013	M.Tech(NIT-Delhi)	August -2017
7	Girish Kondapalli	CHEM/46/2013	M.S(RUTGERS)	November-2017

			University USA)	
8	Divyanshu Gupta	CHEM/10/2013	M.Tech(IIT-Delhi)	August-2018
9	Naresh Kumar	CHEM/51/2013	M.Tech(IIT Madras)	August-2018
10	Kavi Kant Yadav	CHEM/27/2013	GODREJ(Mahad MAHARASTRA)	September-2017
11	Manish Kumar	CHEM/03/2013	M.Tech(IIT –Bombay)	August-2018
12	Udita Bharadwaj	CHEM/48/2013	INFOSYS-Benglore	September-2017
13	Ambuj Jaiswal	CHEM/41/2013	M.Tech(IIT Kanpur)	August-2018
14	Hariom	CHEM/4/2013	RGPIIT –Rai Baraili	August-2018
15	Kunal Sapoury	CHEM/22/2013	GATE	March-2018
16	Tauseef Manzoor	CHEM/24/2013	Avanti Learning Centre	March-2018
17	Jaya Srivastawa	CHEM/08/2013	Indian Navy	September-2017
18	Faheem Hamid	CHEM/11/2013	Research Assistant NIT Srinagar	June-2018
19	Abeer Mushtaq	CHEM/12/2013	Ph.D. (IIT-Delhi)	August -2017
20	Ahmad Husain	CHEM/530/2012	RCFL	September-2018
21	Prashant Lavania	CHEM/411/2012	Banas Dairy	September-2018
22	Raghav Khajuria	CHEM/263/2012	Mu- Sigma	August -2018
23	Devesh Chander	CHEM/121/2012	SBI BANK	August -2017
24	Akhileshwar singh	CHEM/143/2012	TCS	August -2016
25	Avavi Singh	CHEM/565/2012	M.Tech(ICT Mumbai)	08-2018
26	Poban Kumar	CHEM/251/2012	PROMPT	August -2016
27	Prakhar Nigam	CHEM/517/2012	M.Tech (IIT Bombay)	August -2018
28	Vipul Gupta	CHEM/543/2012	M.Tech (IIT Bombay)	August -2018
29	Saurabh Singh	CHEM/562/2012	MBA(Puna)	June -2018
30	Vipul Rajput	CHEM/566/2012	M.Tech (IIT Bombay)	August -2018
31	Anukul Kumar	CHEM/571/2012	Water Purification (Self employed)	August -2016
32	Dhrub Malik	CHEM/569/2012	MBA	June-2017
33	Swyam Gupta	CHEM/554/2012	INFOSYS	August -2016
34	Rahul Goil	CHEM/251/2012	IOCL	August -2016
35	Seema Tomar	Chem/546/2012	IB	September-2018
36	Vishesh Sharma	CHEM/236/2012	M.Tech (IIT Gandhinagar)	August -2018
37	Avani Singh	CHEM/565/2012	M.Tech.(ICT Mumbai)	August-2018
38	Hemanshi Sarengal	CHEM/352/2012	M.Ba(Symcosis-Pune)	June -2018
39	Gowhar Ahmad	CHEM/503/2012	M.TECH	2017MCHECH003
40	Ishfaq Ahmad	CHEM/503/2012	M.TECH	2017MCHECH003
41	Fayaz Ahmad	CHEM/503/2012	M.TECH	2017MCHECH003
42	Dechen Angmo	CHEM/402/2012	M.Tech(IIT-BHU)	August-2017
43	Rahul Panwar	CHEM/618/2012	IOCL	August-2016
44	Mohd Sarwar	CHEM/218/2012	J&k Cement	September-2017
45	Saqib Gulzar	CHEM/54/2012	J&k Cement	September-2017

46	Sachin Verma	CHEM/595/2012	Banas Dairy	September-2018
47	Surbhi Gauswami	CHEM/572/2012	ONGC	2018AMD00187
48	Rjat Srivastawa	CHEM/599/2012	Imprint India Program(Rashtrapati bhawan)	November-2017
49	Vaibhav Shukla	CHEM/609/2012	ONGC	10-04-2017
50	Ronak Giria	CHEM/448/2012	Gujrat Industry PVL	August -2016
51	Rahul Bhagat	CHEM/131/2012	INFOSYS	August -2016
52	Vikash saini	CHEM/536/2012	IOCL	August -2017
53	Adarsh Saini	CHEM/46/2011	Kribco	November 2015
54	Tahir Zaman	CHEM/536/2011	INFOSYS	August -2015
55	Mohammad Furqan	CHEM/51/2012	WIPRO	07-09-2015
56	Dharam Singh	CHEM/580/2011	IOCL	August -2016
57	Hanan Bhat	CHEM/356/2011	INFOSYS	August -2015
58	Waris Baba	CHEM/366/2011	PhD(NIT-Srinagar)	August -2017
59	Mohit Suman	CHEM/526/2011	IOCL	August -2015
60	Wamik Hamid	CHEM/534/2011	GATE	March-2017
61	Fatima Zalid	CHEM/559/2011	NIT Srinagar	12-2015
62	Anam Adil	CHEM/367/2011	PhD(IISc Bangalore)	07-2017
63	Mohd Tabish	CHEM/548/2011	PhD(IISc- Bangalore)	September 2016
64	Anisha	CHEM/249/2011	HR(Delhi)	September 2016
65	Suraj Tyagi	CHEM/560/2011	IOCL	08-2015
66	Goverdhan Singh	CHEM/615/2011	INTAS Pharmaceuticals	09-07-2018
67	Devesh Mishra	CHEM/596/2011	WIPRO	07-09-2015
68	Shagar Sharnma	CHEM/589/2011	WIPRO	07-09-2015
69	Dharam Singh	CHEM/580/2011	GATE score	Ch16S23004014
70	Iqra Altaf	CHEM/359/2011	MBA(Kashmir University)	March-2018
71	Saksham Sharma	CHEM/577/2011	INTAS(Ahmedabad)	August -2018
72	Yasser Rashid	CHEM/79/2011	SHELL	September 2016
73	Jeet Ram Yogi	CHEM/502/2011	Ph.D. Roorkee	August 2017
74	Zumair Muzaffer	CHEM/357/2011	TCS	August 2015
75	Piyush Kohli	CHEM/166/2011	INFOSYS	August 2015
76	Shantanu Kumar Sharma	CHEM/586/2011	IOCL	August 2016

Table-B.4.4a

4.5 Professional Activities (20)

Claimed 20

4.5.1. Professional societies / chapters and organising engineering events (5)

Claimed 05

Indian Institute of Chemical Engineers (IChE)

- Dr. Mohammad Noor Salam Khan (lifetime membership) Student Chapter of IChE at Department of chemical engineering NIT srinagar
- Mr. TanveerRasool Dar(lifetime membership) Student Chapter of IChE at Department of chemical engineering NIT srinagar

- Dr. Saptak Rarotra(lifetime membership) Guwahati Chapter at IIT Guwahati
- Mr. Malik Parvez Student Chapter of IChE at Department of chemical engineering NIT srinagar

International Institute for Science Technology and Education (IISTE)

Mr. Tanveer Rasool Dar (lifetime membership) The IISTE is an IT firm delivering IT supports to education professionals and research institute around world. Its mission is accelerating global knowledge creation and sharing. In partnership government, community organizations, and education related foundations, IISTE offers a variety of programs and activities to promote education development, international collaboration. Following are the members

Institution of Engineers India(IEI)

Mr. Tanveer Rasool Dar

Institute of Engineers, India (IEI) The IEI has its headquarters located in Kolkata with national presence through more than hundred Centres and several Overseas Chapters, Foras and Organ.Following are the members

American Chemical Society (ACS)

Dr. Saptak Rarotra

Founded in 1876 and chartered by the U.S. Congress, it is the world's largest scientific society. Their mission is to advance the broader chemistry enterprise and its practitioners for the benefit of Earth and its people. Their vision is to improve people's lives through the transforming power of chemistry.

Following are the members

Sl. No.	Event/ Workshop Organized	Organized/ Participated Faculty
i.	Organized one day seminar in the department in collaboration with Institution of Engineers (I) JK State Centre, Srinagar on World Environment Day-2015 on 5th June-2015.	Dr. T. R. Dar
ii.	Workshop on process control	Dr. M.A.Rather Dr.F.Q.Mir
iii.	Workshop on Transport process	Dr. M.A.Rather Dr.F.Q.Mir
iv.	National Conference	Dr. M.A.Rather
v.	Organized a five day national workshop on Environment, "Connecting People to Nature-2017" at N.I.T Srinagar from 25-29th September, 2017	Dr. T. R. Dar

4.5.2 Publication of Papers , Technical Magazine, Newsletters (5)

Claimed 05

Miss Fatima Jalid (Ch/559/11)

Jalid F, Khan TS, Mir FQ, Haider MA, Understanding trends in hydrodeoxygenation reactivity of metal and bimetallic alloy catalysts from ethanol reaction on stepped surface(2017) J Catal 353:265-273.

4.5.3 Participation in inter-Institute Events by Students of the Program of Study (10)

Claimed 10

Sl.No.	Event/ Workshop	Organized/ Participated
i.	Freshers (NIT Srinagar) 2k15, Tech fest, NIT Srinagar 2k15	Rohit Mulhen (Ch/363/14)
ii.	ICNBL (International conference on nanotechnology for a better living) , from 25-29th May, 2016.	Adfa (Ch/419/14)
iii.	Social welfare club	Sachin Kumar Sattavan (Ch/363/14)
iv.	National Conference on Advances in Materials and Materials Processing (AMMP-15) 22-3 rd May 2015 pp 31	Mudasir Akbar Shah(2017-PhD-FoE-Spring-04)
v.	Recent Research Trends in Chemical and Environmental Sciences' August 18-19 ,2015 at Sri Pratap College M.A.Road Srinagar.pp38.	Saksham Sharma(Ch/577/11), Adarsh Saini Ch/610/11), Himkush Gupta (Ch/607/11), Anil Kumar (Ch/276/11) , Vishal Malmotra (Ch/296/11), and Nishant Gupta(Ch/557/11),
vi.	Proceedings of International conference ICEEMS -14 organized by School of Engineering Cochin University from 10-12 th December 2014 ,Page 207 to 217.	Parveena Ch/363/14),, Sohail Rasool Lone Ch/363/14), Qaiser Hajam (Ch/363/14) and Pankaj Pradhan (Ch/363/14),
vii.	Int .Conf Nanotechnology for better living May 25-29 th jointly by IIT Kanpur & NIT Srinagar. Proc. of the Intl. Conf. on Nanotechnology for Better Living, 2016 Vol. 3, No. 1, p. 338 .doi:10.3850/978-981-09-7519-7nbl16-rps-338 (awarded 1 st Prize jointly (poster) under Post-graduate Scientist category.) ISBN-13: 978-981-09-7519-7.	Rahul Goel (Ch/556/12),, Saurabh Singh(Ch/562/12), Hemanshi Sarangal(Ch/352/12), and Rahaul Panwar (Ch/618/12),
viii.	Int. Conf. on Water: From Pollution to Purification (ICW 2016) Kottayam Kerala 12-15 th Dec. 2016 proceedings page 28	Rahul Goel(Ch/556/12), Saurabh Singh (Ch/562/12), Himanshi Sarangal (Ch/352/12), and Rahul Panwar Ch/618/12),
ix.	Chemcon 2015 held in IIT Guwahati on Dec,2015	Nasir Ahmed (2017-PhD-FoE-Spring-22), Sachin Verma (Ch/595/12)
x.	Advances in Chemical and Environmental Engg on April,2016 in NIT Jalandhar	Nasir Ahmed (2017-PhD-FoE-Spring-22), Sachin Verma(Ch/595/12)

Table-B.4.5.3

RESEARCH PAPERS/CONFERENCES

International Journals

- i. Mushtaq Ahmad Rather, Ashok N. Bhaskarwar, Akshey Modi, Anjan Raina, and Deep Priya Kapoor "TiO₂ Photocatalytic Degradation of Methylene Blue Dye by Utilizing Ultra Violet Light Emitting Diodes as Radiation Source" *Adv. Sci. Lett.* 22, 834-838 (2016)

Conferences

National Conferences

- i. Mushtaq Ahmad Rather and Mudasir Akbar Shah "Iron oxide Magnetic Nanoparticles: Applications, synthesis and Properties" National Conference on Advances in Materials and Materials Processing (AMMP-15) 22-3rd May 2015 pp 31.
- ii. Mushtaq Ahmad Rather and Mudasir Akbar Shah "Synthesis of Monodisperse Anatase Phase aqueous Stabilized TiO₂ Nanoparticles" National Conference on Advances in Materials and Materials Processing (AMMP-15) 22-3rd May 2015 pp 32.
- iii. Mushtaq Ahmad Rather, Tanveer Rasool, Saksham Sharma, Adarsh saini, Himkush Gupta, Anil Kumar, Vishal Malmotra and Nishant Gupta, "Synthesis and Characterization of Activated carbon from locally Available Biomass –Horse chestnut shell. Also to study its Adsorption Potential Towards Methylene Blue dye. National Conf. 'Recent Research Trends in Chemical and Environmental Sciences' August 18-19, 2015 at Sri Pratap College M.A.Road Srinagar. pp38.

International Conferences

- i. Mushtaq Ahmad Rather, Parveena, Sohail Rasool Lone, Qaiser Hajam and Pankaj Pradhan "Estimation of Calorific value and Proximate analysis parameters (PAP) of some abundantly available biomass species in Kashmir region and derivation of correlation for HHV in terms of PAP" 'Mushtaq Ahmad Rather, Parveena, Sohail Rasool Lone, Qaiser Hajam and Pankaj Pradhan' Proceedings of International conference ICEEMS -14 organized by School of Engineering Cochin University from 10-12th December 2014, Page 207 to 217.
- ii. Mushtaq Ahmad Rather, Rahul Goel, Saurabh Singh, Hemanshi Sarangal and Rahul Panwar "Synthesis of Ag doped TiO₂ nano-particles and study of their efficacy towards degradation of rhodamine -B dye' Int. Conf Nanotechnology for better living May 25-29th jointly by IIT Kanpur & NIT Srinagar. Proc. of the Intl. Conf. on Nanotechnology for Better Living, 2016 Vol. 3, No. 1, p. 338 .doi:10.3850/978-981-09-7519-7nbl16-rps-338 (awarded 1st Prize jointly (poster) under Post-graduate Scientist category.) ISBN-13: 978-981-09-7519-7.
- iii. Mushtaq Ahmad Rather, M.S.Charoo, Rahul Goel, Saurabh Singh, Himanshi Sarangal and Rahul Panwar. "Enhanced photocatalytic activity of Ag-doped nanoparticles towards degradation of Rhodamine-B dye. Int. Conf. on Water: From Pollution to Purification (ICW 2016) Kottayam Kerala 12-15th Dec. 2016 proceedings page 28.

CRITERION 5	Faculty Information and Contributions	200
Total Marks Claimed		149.12

Name of the Faculty Member	Qualification			Association with the Institution	Designation	Date of Joining the Institution	Department	Specialization	Academic Research			Sponsored Research (Funded Research)	Consultancy and Product Development
	Degree (highest degree)	University	Year of Graduation						Research Paper Publications	Ph.D. Guidance	Faculty Receiving Ph.D. during the Assessment Years		

Table B.5

Note: Please provide details for the faculty of the department, cumulative information for all the shifts for all academic years starting from current year in above format in **Annexure - II**.

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

Claimed 18

(To be calculated at Department Level)

No. of UG Programs in the Department (n): **01**

No. of PG Programs in the Department (m): **01**

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 lateral entry students

(The above data to be provided considering all the UG and PG programs of the department)

$S = \text{Number of Students in the Department} = UG1 + UG2 + UG3 + PG1 + PG2$

$F = \text{Total Number of Faculty Members in the Department (excluding first year faculty)}$

Student Faculty Ratio (SFR) = S / F

Year	CAY(2017-18)	CAYm1(2016-17)	CAYm2(2015-16)
u1.1	77	77	77
u1.2	77	77	77
u1.3	77	77	77
UG1	231	231	231
p1.1	18	18	18
p1.2	18	18	18
PG1	36	36	36
Total No. of Students in the Department (S)	267	267	267
No. of Faculty in the Department (F)	17	18	18
Student Faculty Ratio (SFR)	15.70	14.83	14.83
Average SFR	15.12		

Table-B.5.1

Assessment	18
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Marks to be given proportionally from a maximum of 20 to a minimum of 10 for average SFR between 15:1 to 25:1, and zero for average SFR higher than 25:1. Marks distribution is given as below:

- = 15 - 20 Marks
- < = 17 - 18 Marks
- < = 19 - 16 Marks
- < = 21 - 14 Marks
- < = 23 - 12 Marks
- < = 25 - 10 Marks
- > 25.0 - 0 Marks

Note: Minimum 75% should be Regular/ full time faculty and the remaining shall be Contractual Faculty/Adjunct Faculty/Resource persons from industry as per AICTE norms and standard.

The contractual Faculty will be considered for assessment only if a faculty is drawing a salary as prescribed by the concerned State Government for the contractual faculty in the respective cadre and who have taught over consecutive 4 semesters.

5.1.1. Provide the information about the regular and contractual faculty as per the format mentioned below:

	Total number of regular faculty in the department	Total number of contractual faculty in the department
CAY	10	08
CAYm1	10	08
CAYm2	10	08

Table-B. 5.1.1

5.2. Faculty Cadre Proportion (20)

Claimed 20

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

F1: Number of Professors required = $1/9 \times$ Number of Faculty required to comply with 20:1

Student-Faculty ratio based on no. of students (N) as per 5.1

F2: Number of Associate Professors required = $2/9 \times$ Number of Faculty required to comply with 20:1 Student-Faculty ratio based on no. of students (N) as per 5.1

F3: Number of Assistant Professors required = $6/9 \times$ Number of Faculty required to comply with 20:1

Student-Faculty ratio based on no. of students (N) as per 5.1

Year	Professors		Associate Professors		Assistant Professors	
	Required F1	Available	Required F2	Available	Required F3	Available
CAY	1.48	2	2.96	2	8.88	14
CAYm1	1.48	2	2.96	2	8.88	14
CAYm2	1.48	2	2.96	2	8.88	14
Average Numbers	RF1=1.48	AF1=2	RF2=2.96	AF2=2	RF3=8.88	AF3=14

Table B.5.2

$$a. \text{ Cadre Ratio marks} = \left[\left(\frac{AF1}{RF1} \right) + \left(\frac{AF2}{RF2} \times 0.6 \right) + \left(\frac{AF3}{RF3} \times 0.4 \right) \right] \times 10 = 23.8 \text{ (limited to 20)}$$

- If AF1 = AF2= 0 then zero marks
- Maximum marks to be limited if it exceeds 20

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

Case 1: AF1/RF1= 1; AF2/RF2 = 1; AF3/RF3 = 1; Cadre proportion marks = $(1+0.6+0.4) \times 10 = 20$

Case 2: AF1/RF1= 1; AF2/RF2 = 3/2; AF3/RF3 = 8/9; Cadre proportion marks = $(1+0.9+0.3) \times 10 =$ limited to 20

Case 3: AF1/RF1=0; AF2/RF2=1/2; AF3/RF3=11/9; Cadre proportion marks = $(0+0.3+0.49) \times 10 = 7.9$

5.3. Faculty Qualification (20)**Claimed 12.88**

$FQ = 2.0 \times [(10X + 4Y)/F]$ 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 Faculty Student ratio (no. of faculty and no. of students required are to be calculated as per 5.1)

	X	Y	F	$FQ=2.0 \times [(10X + 4Y)/F]$
CAY	10	2	13.35	16.18
CAYm1	7	2	13.35	11.68
CAYm2	6	3	13.35	10.79
Average Assessment				12.88

Table B.5.3**5.4. Faculty Retention(10)****Claimed 10**

No. of regular faculty members in CAYm2 = 10, CAYm1 = 10, CAY = 13

Item	Marks
(% of faculty retained during the period of assessment keeping CAYm3 as base year)	
>=90% of required Faculty members retained during the period of three academic years keeping CAYm3 as base year	10
>=75% of required Faculty members retained during the period of three academic years keeping CAYm3 as base year	08
>=60% of required Faculty members retained during the period of three academic years keeping CAYm3 as base year	06
>=50% of required Faculty members retained during the period of three academic years keeping CAYm3 as base year	04
<50% of required Faculty members retained during the period of three academic years keeping CAYm3 as base year	0

Table B.5.4

Faculty Retention			
DESCRIPTION	2015-16	2016-17	2017-18
No. of Faculty Retained	10	10	10
Total Number of Faculty	10	10	13
% of Faculty Retained	100	100	76.92
AVERAGE ASSESSMENT			92.31

Assessment	10
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5.5. Faculty Competencies in Correlation to Program Specific Criteria (10)**Claimed 10**

Faculty members of Chemical Engineering Department are specialized in diversified areas of Chemical Engineering. They have good research exposure and have published research papers in journals of repute (American Chemical Society (ACS), Springer, Elsevier, Taylor and Francis, etc.) and presented several papers in national and international conferences in India as well as abroad. Faculty has got the provision for going for higher studies sponsored by the Institute under QIP. The faculty members participate in FDPs, STCs, and Workshops to upgrade their knowledge in latest field of research. Faculty is involved in developing working models for laboratories for the effective teaching-learning process. Faculty members are also actively involved in conducting events such as STCs and Workshops. Faculty shows keen interest in developing central library facility by recommending latest books for the benefit of students and faculty. Faculty members also takes keen interest in developing Research facilities for the benefit of B.Tech., M.Tech. and Ph.D. students.

The Department of Chemical Engineering has faculty expertise available in the domains of Transport Processes, Biochemical Engineering, Membrane science & Engineering, Energy & Environment, Modeling and Simulation, CFD, Catalysis, Nanotechnology, Mathematics, Electrical Technology, Electronics and Management, etc. The Faculty in each domain and their research areas are given below:

Name of Faculty	Qualification	Area of Specialization/ Research Area
Dr. Mohd. Noor Salam Khan	Ph.D. (Chemical Engineering)	Bioseparation, Energy, Environment, Fermentation, Modelling And Simulation
Dr. Fasil Qayoom Mir	Ph.D. (Chemical Engineering)	Membrane Science And Technology, Transport Processes, Fuel Cells, Electrodialysis
Dr. Tanveer Rasool Dar	Ph.D. (Chemical Engineering)	Biomass Conversion, Modelling & Simulation
Dr. Mushtaq Ahmad Rather	Ph.D. (Chemical Engineering)	Energy, Environment, Waste Water Treatment, Nanotechnology, Photocatalysis,
Dr. Malik Parvez Ahmad	Ph.D. (Chemical Engineering)	Multicomponent Separation Processes, CFD, Rheology
Dr. Mohammad Farooq Lala	Ph.D. (Humanities & Social Sciences)	Marketing & Finance
Dr. Tanveer Jalal	Ph.D. (Mathematics)	Sequence Spaces, Summability Theory
Dr. Zamrooda Jabeen	Ph.D. (Mathematics)	
Dr. Javed Ahmad Banday	Ph.D. (Chemistry)	Chemistry of Natural Products, Essential Oils, Medicinal Chemistry, Synthetic Organic Chemistry
Miss Fatima Jalid	B.Tech. (Chemical Engineering) Registered for Ph.D at	Catalysis

	IIT Delhi	
Miss Iqra	M.Tech (Chemical Engineering)	Membrane Science, Biofuels.
Miss Iqra Akbar	M.S. (Biochemical Engineering)	Nanotechnology, Environmental Engineering, Pharmaceuticals, Nutraceuticals
Miss Afkham Mir	M.Tech. (Chemical Engineering)	Graphene, 2D Materials, Energy Storage Devices
Mr. Saptak Rarotra	Ph.D. (Chemical Engineering)	Micro & Nanotechnology, Interfacial Phenomena, Clean Energy, High Energy Materials.
Mr. Rupak Kumar Singh	M.Tech. (Chemical Engineering)	Microfluidic Fuel Cells
Miss Parul Singh	M.Tech. (Chemical Engineering)	Petroleum Technology
Assessment		10

5.6. Innovations by the Faculty in Teaching and Learning (10)

Claimed 10

Instructional Materials

Each classroom is equipped with overhead projectors and some are equipped with the state-of-the-art smart boards. Study material prepared by teachers using standard text books and reference books are used for instruction of the students. Other instruction tools are whiteboard, charts and diagrams and laboratory demonstration models.

Working Models/Charts/Monograms

Apart from the test rigs and experimental set-ups, the labs of the Chemical Engineering Department are equipped with different high end equipment such as CHNS analyzer, Capillary Flow Porometer, BET analyzer, Spectrophotometers, Bioreactor, Digital Bomb Calorimeter and working models for the effective teaching-learning process.

Assessment	10
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5.7. Faculty as participants in Faculty development/training activities/STTPs (15) Claimed 8.24

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

Name of the Faculty	Max. 5 per Faculty		
	CAY	CAYm1	CAYm2
Dr. Mohd. Noor Salam Khan	3	3	-
Dr. Fasil Qayoom Mir	3	5	5
Dr. Tanveer Rasool Dar	3	5	5
Dr. Mushtaq Ahmad Rather	-	5	-
Dr. Malik Parvez Ahmad	3	5	5
Dr. Mohammad Farooq Lala	-	-	-
Dr. Tanveer Jalal	-	5	-
Dr. Zamrooda Jabeen	-	-	-

Dr. Javed Ahmad Banday	-	-	-
Sum	12	28	15
RF= Number of Faculty required to comply with 20:1 Student-Faculty ratio as per 5.1	13.35	13.35	13.35
Assessment = $3 \times (\text{Sum}/0.5\text{RF})$ (Marks limited to 15)	5.39	12.58	6.74
Average assessment over three years (Marks limited to 15) =			8.24

Table-B.5.7

5.8 Research and Development (75)

Claimed	60
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5.8.1 Academic Research (20)

Claimed 20

Pub: No. of research publications in refereed/SCI Journals, Conferences, Books, Book Chapters, etc.

PhD: No. of Ph. D. Scholars registered/ awarded

Name of the Faculty	2017-18		2016-17		2015-16	
	Pub	PhD	Pub	PhD	Pub	PhD
Dr. Mohd. Noor Salam Khan	02	0-Awarded	03	01-Awarded	-	0-Awarded
		02-Total Reg.		03-Total Reg.		03-Total Reg.
Dr. Fasil Qayoom Mir	03	0-Awarded	01	0-Awarded	02	-
		01-Total Reg.		01-Total Reg.		-
Dr. Tanveer Rasool Dar	05	-	-	-	02	-
		-		-		-
Dr. Mushtaq Ahmad Rather	08	-	05	-	03	-
		-		-		-
Dr. Malik Parvez Ahmad	02	-	03	-	03	-
		-		-		-
Miss Fatima Jalid	01	-	-	-	-	-
		-		-		-
Dr. Mohammad Farooq Lala	01	0-Awarded	02			
		02-Total Reg.				
Dr. Tanveer Jalal	08	0-Awarded	04			
		01-Total Reg.				
Dr. Zamrooda Jabeen	-	-	-			
Dr. Javed Ahmad Banday	03	1-Awarded	01			
		01-Total Reg.				
Assessment		20				

5.8.2 Sponsored Research (20)

Claimed 5

- Funded research from outside

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

Funding Amount (Cumulative during last three academic years starting from CAYm1):

Amount > 50 Lacs– 20 Marks,

Amount > 40 and \leq 50 Lacs – 15 Marks,

Amount > 30 and \leq 40 Lacs– 10 Marks,

Amount \geq 15 and \leq 30 Lacs – 5 Marks,

Amount < 15 Lacs – 0 Marks

Sl.No.	Name	Agency	Amount
1.	Briqueting of Dal Lake weeds to serve as a fuel source.	MHRD-Swachhata Action Plan	24.94 lakhs
	Assessment		05

5.8.3 Development Activities (15)

Claimed 15

Provide details:

5.8.3.1 Product Development

5.8.3.2 Research laboratories

5.8.3.3 Instructional materials

5.8.3.4 Working models/charts/monograms etc.

5.8.3.1 In House Product Development

Sl. No.	Name of product
i.	Development of microfiltration test cell.
ii.	Development of manual press for compression.
iii.	Fabrication of die for ceramic membrane preparation.
iv.	Fabrication and development of Electrodialysis cell.
v.	Design and fabrication of packed column in order to determine flow characteristics and pressure drop in non-newtonian fluid through different packings.
vi.	Design and fabrication of VLE still for generation of equilibrium data.
vii.	Design and fabrication of helical coil heat exchanger for heat transfer enhancement using nano fluid.
viii.	Fabrication of experimental setup to carry out photocatalysis involving UV light employing UV LED's than traditional UV tube.

5.8.3.2 Research Laboratories

Sl.No.	Name
i.	Energy Engineering Lab.
ii.	Environmental Engineering Lab.
iii.	Catalysis Lab.
iv.	Biochemical Engineering Lab.
v.	Membrane Science & Technology Lab.

5.8.3.3 Instructional Materials

Each high end equipment in every research lab is supported with instruction manuals and operating softwares for proper and safe use. The instruction material also provides procedure for calibrating and trouble shooting of the equipment.

5.8.3.4 Working models/charts/monograms etc.

Apart from different high end equipment such as CHNS analyzer, Capillary Flow Porometer, BET analyzer, Spectrophotometers, Bioreactor, Digital Bomb Calorimeter working models like Electrolysis cell, Microfiltration cell, distillation still, Packed columns etc. are available in the department for the effective teaching-learning process.

Assessment	15
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5.8.4 Consultancy (from Industry) (20)

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

Funding Amount (Cumulative during last three academic years starting from CAYm1):

Amount >10 Lacs – 20 Marks,

Amount ≤ 10 and ≥ 8 Lacs – 15 Marks,

Amount < 8 and ≥ 6 Lacs– 10 Marks, Amount < 6 and ≥ 4 Lacs–5 Marks, Amount < 4 and ≥ 2 Lacs– 2 Marks,

Amount <2 Lacs – 0 Marks

Sl. No.	Name	Amount

5.9 Faculty Performance Appraisal and Development System (FPADS) (10) **Claimed 10**

The institute has in place a continuous, incisive, well-organized, and effective faculty performance appraisal system for the faculty members. For this purpose an “Annual Assessment Report for the Faculty and the Staff” is prepared for every member. This report gives a detailed description of the members’ contribution to teaching-learning process, contribution in laboratory development, course development and development of teaching aids, laboratory manuals, and special lectures. In addition, participation in of organizing seminars, symposia, conferences, continuing education programs, research and development activities, sponsored research projects, contribution to department and institute administration, etc., are also taken into account. A copy of the Assessment form is provided in the Annexure.

The annual assessment report is given due consideration in the process of promotion and up-gradation of faculty members and hence plays a vital role in the development of the academic, research and administrative system of the institute.

Assessment	10
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5.10 Visiting/Adjunct/Emeritus Faculty etc. (10)**Claimed 10**

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

5.10.3 Provision of visiting/adjunct faculty(1)

5.10.4 Minimum 50 hours per year interaction with adjunct faculty from industry/retired professors etc.(9)

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

2015-2016

Sl. No.	Date	Name of Event	Delivered By
01.	March 11, 2016	Guest lecture on Petroleum, Petroleum Refinery and its Significance for Chemical Engineering	Mr. Junaid Ashraf Shah Production Engineer, IOCL Haldia
02.	March 17-20, 2016	Expert Lectures	Dr. M.K Jha, Professor, Department of Chemical Engineering, NIT Jalandhar & Dr. V.C. Srivastava, Associate Professor, Department of Chemical Engineering, IIT Roorkee

2016-2017

Sl. No.	Date	Name of Event	Organized by
01	April 3, 2017	Seminar on “Emerging trends in Android based mobile app”	Mr. Abhishek Kumar, Senior Corporate Technical Trainer (IBM Experts)
02	April 15-16, 2017	Two day’s workshop on Robotics	Utkranti, eDC Team, IIT Delhi
03	April 29-30, 2017	Two day’s Workshop on “PLC & SCADA”	CETPA Infotech. Pvt. Ltd.
04	May 6-7, 2017	Two day’s workshop cum National Championship on Internet of things	TechieNest Pvt. Ltd. and IIT Hyderabad
05	June 10, 2017	Interaction session with Kashmir’s Entrepreneurs	Founder of KashBook, Co- Founder of Captivating Kashmir and INSPIRE award winner Zufa Iqbal

2017-2018

Sl. No.	Date	Name of Event	Delivered By
01	Sep 6-7, 2017	“Youth Entrepreneurship in conflict areas” Symposium in Srinagar, J&K	CHINAR International in association with South Asia Network of Impact Masters and IIED Center, NIT Srinagar
02	Oct 2, 2017 (MEGA EVENT)	IDEA CHALLENGE 2017 – “The Future World”	IIED Center
03	Oct 2, 2017	Swach Bharat Abhiyan	Srinagar Municipal Corporation
04	Oct 2, 2017	Orientation Session of Batch 2016 & Batch 2017	IIED Center
05	Oct 5, 2017	Orientation program of “The Better You”	STARTUP KASHMIR
06	Oct 29, 2017	One day seminar on “Importance of international certification in Design, Automation and IT industries”	CETPA Infotech. Pvt. Ltd.
07	Nov 2, 2017	Interaction Session with “Prof. Anil Kumar Gupta”, Founder of Honey Bee Network.	Central University of Kashmir
08	Nov 9, 2017	Catalysing a cultural shift in youth entrepreneurship	EDP Cell on National Entrepreneurship Day
09	May 07, 2018	Lecture on Gas Hydrates	Dr. Jatindra Sangwai, Centre of Ocean Technology (IIT Madras)
Assessment			10

Annexure - II

Name of the Faculty Member	Qualification			Association with the Institution	Designation	Date of Joining the Institution	Department	Specialization	Academic Research			Sponsored Research (Funded Research)	Consultancy and Product Development
	Degree (highest degree)	University	Year of Graduation						Research Paper Publications	Ph.D. Guidance	Faculty Receiving Ph.D. during the Assessment Years		
Dr. Mohd. Noor Salam Khan	Ph.D.	IIT Roorkee	2005		Prof.	16-05-1989	Chemical	Biochemical	07	03	No	None	None
Dr. Fasil Qayoom Mir	Ph.D	IIT Delhi	2015		Asstt. Prof.	8-03-2002	Chemical	Membrane Science	06	01	No	None	None
Dr. Tanveer Rasool Dar	Ph.D.	NIT Srinagar	2018	Roorkee IIT	Asstt. Prof.	8-03-2002	Chemical	Biomass conversion	07	0	No	None	None
Dr. Mushtaq Ahmad Rather	Ph.D.	NIT Srinagar	2017		Asstt. Prof.	30-12-2006	Chemical	Energy, Environment	16	0	Yes	01	None
Dr. Malik Parvez Ahmad	Ph.D	NIT Srinagar	2018	Roorkee IIT	Asstt. Prof.	30-12-2006	Chemical	CFD	08	0	No	None	None
Ms Fatima Jalid	B.Tech pursuing Ph.D	IIT Delhi	2015	NIT Sgr.	Trainee teacher	08-01-2016	Chemical	Catalysis	01	0	No	None	None
Dr. Mohammad Farooq Lala	Ph.D		2002		Prof.	18-03-1982	Humanities	Marketing & Finance	03	02	No	None	None
Dr. Tanveer Jalal	Ph.D	AMU	1993		Assoc. Prof.	3-7-1998	Mathematics	Sequence spaces	15	01	No	None	None
Dr. Zamrooda Jabeen	Ph.D		2004		Assoc. Prof.	6/03/1996	Mathematics	Operation Research					
Dr. Javed Ahmad Banday	Ph.D	NIT Srinagar	2014		Asstt. Prof.	14-03-1996	Chemistry	Organic Chemistry	25	7	No	None	None
Mr. Mohammad Asif	M. Tech.	AMU	2013		Cont.	12-08-2015	Chemical	Process Modeling & Simulation	-	-	No	None	None
Mr. Mohd. Imran	M. Tech.	IIT Roorkee	2014		Cont.	07-08-2015	Chemical	Industrial Pollution Abatement	-	-	No	None	None
Mr. Aash Mohammad	M. Tech.	IIT Roorkee	2014		Cont.	17-08-2015	Chemical	Industrial Pollution Abatement	-	-	No	None	None
Mr. Ram Singh	M.Tech	IIT Roorkee	2013		Cont.	07-08-2015	Chemical	Chemical Eng.	-	-	No	None	None

Mr. Tejbir Singh	M.Tech	IIT Roorkee	2014		Cont.	08-09-2015	Chemical	Chemical Eng.	-	-	No	None	None
Mr. Rupak Kumar Singh	M.Tech	IIT-BHU	2013		Cont.	07-09-2015	Chemical	Microfluidic fuel cells	-	-	No	None	None
Dr. Shashikant Kumar	Ph.D	ISM Dhanbad	2016		Cont.	08-03-2016	Chemical	Membrane science	-	-	No	None	None
Miss Parul Singh	M.Tech	AMU	2014		Cont.	16-03-2016	Chemical	Petroleum Technology	-	-	No	None	None
Mr. Mohammad Umair Iqbal	M.Tech	IIT Gandhinagar	2016		Cont.	19-12-2016	Chemical	Process Safety	-	-	No	None	None
Mr. Nasir Ahmed	M.Tech	NIT Jalandhar	2016		Cont.	17-12-2016	Chemical	Membrane science	-	-	No	None	None
Miss Iqra	M.Tech	NIT Srinagar	2017		Cont.	05-09-2017	Chemical	Membrane science	-	-	No	None	None
Miss Iqra Akbar	M.Tech	IIUM Malaysia	2014		Cont.	05-09-2017	Chemical	Nanotechnology	-	-	No	None	None
Miss Afkham Mir	M.Tech	NIT Jalandhar	2013		Cont.	05-03-2018	Chemical	Graphene, 2D materials	-	-	No	None	None
Mr. Saptak Rarotra	Ph.D	IIT Guwahati	2018		Cont.	05-03-2018	Chemical	Micro & Nanotechnol	-	-	No	None	None

Criterion 6 – Facilities and Technical Support

(80)

Marks Claimed

70

6.1 Adequate and Well Equipped Laboratories, and Technical Manpower (40)

Claimed 30

Sl. No.	Name of the Laboratory	No. of students per setup (Batch Size)	Name of the Important Equipment	Weekly utilization status (all the courses for which the lab is utilized)	Technical Manpower Support		
					Name of Technical Staff	Designation	Qualification
1.	Fluid Mechanics and Mechanical Operations Laboratory	5	1. Reynolds Apparatus 2. Rotameter 3. Venturi Orifice 4. Bernouli's Thermometer 5. Centrifugal Pump 6. Reciprocating Pump 7. Fraction of Pipes (U- Type) 8. Vacuum Pump 9. Ball Mill 10. Ribbon Mixer 11. Vibrating Screen 12. Trommel 13. Screw Conveyer 14. Elutriator 15. Belt Conveyer 16. Plate and Frame Filter Press 17. Jaw Crusher 18. Cyclone 19. Sieve Shaker 20. Drum Type Filter Press 21. Pulvirizer 22. Sedimentation Apparatus	Spring Session Fluid Mechanics & Mechanical Operations Laboratory (ChBC-44P) – 6hrs. Total Utilization Per Week – 6 hrs.	Mr. Abdul Hamid Shaikh Mr. Abdul Sattar Bhat Mr. Mushtaq Ahmed Bhat	Lab Assistant Works Assistant Technical Assistant	Under Matric Under Matric Matric, Participation in Laboratory Management System Awareness and Internal Auditing

2.	Mass Transfer Laboratory	5	<ol style="list-style-type: none"> Hot Air Dryer and Air blower Wetted Wall column Water cooling Tower Crystallizer Spray Dryer Steam Distillation Setup Liquid Liquid Extraction Packed Tower Gaseous Diffusion Apparatus Liquid Diffusion Setup Solid Liquid Extraction Packed Bed 	Autumn Session Mass Transfer Laboratory (ChBC-77P) – 6hrs. Total Utilization Per Week – 6 hrs.	Mr. Abdul Sattar Bhat Mr. Mushtaq Ahmad Bhat	Works Assistant Technical Assistant	Under Matric Matric and Participation in Laboratory Management System Awareness and Internal Auditing
3.	Process Dynamics & Control Laboratory	5	Multiprocess Control Trainer Pressure Control System Mutiprocess Pressure Control System Air Compressor Temperature Control System	Autumn Session Process Dynamics & Control Laboratory (ChBC-74P) – 6hrs Total Utilization Per Week – 6 hrs.	Mushtaq Ahmed Bhat	Technical Assistant	Matriculation and Participation in Laboratory Management System Awareness and Internal Auditing
4.	Thermodynamics and Reaction Engineering Laboratory	5	<ol style="list-style-type: none"> Plug Flow Reactor Isothermal Batch Reactor Adiabatic Batch Reactor Continuous Stirred Tank Reactor RTD Studies Packed Bed reactor RTD Studies CSTR 	Spring Session Thermodynamics and Reaction Engineering Laboratory (ChBC-68P) – 6 hrs. Total Utilization Per Week – 6 hrs.	Mustaq Ahmed Bhat Abdul Sattar Bhat	Technical Assistant Lab Assistant	Matriculation and Participation in Laboratory Management System Awareness and Internal Auditing Under Matriculation

5.	Heat Transfer Laboratory	5	<ol style="list-style-type: none"> 1. Heat Transfer by Forced Convection 2. Heat Transfer through Composite Wall 3. Dropwise and Filmwise Condensation 4. Finned Tube Heat Exchanger 5. Emissivity Measurement Apparatus 6. Heat Transfer by Natural Convection 7. Shell and Tube Heat Exchanger 	<p>Autumn Session –</p> <p>Heat Transfer Laboratory (ChBC-56P) – 6 hrs.</p> <p>Total Utilization Per Week – 6 hrs.</p>	<p>Mr. Abdul Hamid Shaikh</p> <p>Mr. Mushtaq Ahmed Bhat</p>	<p>Lab Assistant</p> <p>Technical Assistant</p>	<p>Under Matriculation</p> <p>Matriculation and Participation in Laboratory Management System Awareness and Internal Auditing</p>
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6.	Energy Engineering Laboratory	5	<ol style="list-style-type: none"> 1. Pour Point Apparatus 2. Flash Point Apparatus 3. Smoke Point Apparatus 4. Dew Point Apparatus 5. Cloud Point Apparatus 6. Fire Point Apparatus 7. Incubator 8. Furnace 9. Oven 10. Magnetic Stirrer 11. Microscope 12. Vacuum Oven 13. Automatic Bomb Calorimeter 14. Proximate Analyzer 15. CHNS/O Analyzer 16. pH Meter 17. Hydrothermal Reactor 18. Double Distilled Water Unit 19. Centrifugal Pump 20. Vacuum pump 21. COD/Photometer 22. Dissolved Oxygen Meter 23. Filtration Assembly 24. Autoclave 25. Ball Mill 26. Double Beam Spectrophotometer 27. Ultra Sonic Cleaner 28. Electronic balance 29. Nano Autoclave 30. Sieve Set 	<p>Spring Session</p> <p>Energy Engineering Laboratory (ChBC-65P) – 6 hrs.</p> <p>Project (ChBP-81) – 15 hrs.</p> <p>Total Utilization Per Week – 21hrs.</p> <p>Autumn Session –</p> <p>Pre-Project Work (ChBP-71) – 15 hrs.</p> <p>Total Utilization Per Week – 15hrs.</p>	Mr. Noor Mohammad Mir	Technical Assistant	Under Matriculation
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7.	Biochemical Engineering Laboratory		<ol style="list-style-type: none"> 1. BOD Incubator 2. Furnace 3. Biosafety Cabinet 4. Autoclave 5. Waterbath 6. Fermenter 7. Centrifuge 8. Oxygen Analyzer 9. pH meter 10. Electronic Balance 11. Vacuum Pump 12. UV-Vis Spectrophotometer 13. Incubator Shaker 14. Bioreactor 	<p>Spring Session Biochemical Engineering Lab. (ChBC-83P) – 6 hrs. Project (ChBP-81) – 15 hrs. Total Utilization Per Week – 21hrs.</p> <p>Autumn Session Pre-Project Work (ChBP-71) – 15 hrs. Total Utilization Per Week – 15hrs.</p>	Abdul Hamid Shaikh	Lab Assistant	Under Matriculation
8.	Environment Engineering Laboratory	6	<ol style="list-style-type: none"> 1. BET Analyzer 2. Hot Air Oven 3. Laboratory Oven 4. Turbidity Meter 5. Orbital Incubator Shaker 6. Shaking Incubator 7. Magnetic Stirrer 8. Sieve Shaker 9. pH/Ion meter 10. Multiparameter Meter (pH, Conductivity, DO) 11. Digital Flame Photometer 12. Water Demineralizer 13. Water Purification System 14. Weighing Balance 15. UV-Visible Spectrophotometer 	<p>Spring Session Project (ChBP-81) – 15 hrs. Total Utilization Per Week – 15hrs.</p> <p>Autumn Session Pre-Project Work (ChBP-71) – 15 hrs. Total Utilization Per Week – 15hrs.</p>	Mr. Tanveer Rasool Dar	Assistant Professor	Ph.D. Chemical Engineering
9.	Membrane Science and Technology Laboratory	6	<ol style="list-style-type: none"> 1. Magnetic Stirrer 2. DC Power Supply 3. Hot Air Oven 4. Programmable Muffle Furnace 5. pH and conductivity Meter 6. Syringe Infusion Pump 7. P-type Rotameter 8. Weighing Balance 9. Porometer 10. Preistaltic Pump 11. Vacuum Pump 	<p>Spring Session Project (ChBP-81) – 15 hrs. Total Utilization Per Week – 15hrs.</p> <p>Autumn Session Pre-Project Work (ChBP-71) – 15 hrs. Total Utilization Per Week – 15hrs.</p>	Dr. Fasil Qayoom Mir	Assistant Professor	PhD Chemical Engineering

10.	Multiphase System Laboratory	6	1. Rheotest 2. Monoblock Pump 3. Reflectometer 4. Helical Coil Heat Exchanger 5. Single Pipe Heat Exchanger 6. Ultrasonic Water Bath Cryostat	Spring Session Project (ChBP-81) – 15 hrs. Total Utilization Per Week – 15hrs. Autumn Session Pre-Project Work (ChBP-71) – 15 hrs. Total Utilization Per Week – 15hrs.	Mr. Malik Parvez Ahmad	Assistant Professor	Ph.D. Chemical Engineering
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Table B.6.1

Sub criteria	Evaluation	Marks
6.1 Adequate and well equipped laboratories and technical manpower.	All laboratories are well equipped to run the program with sufficient manpower	30

6.2 Laboratories maintenance and overall ambience (10)

Claimed 10

Sl. No.	Name of the Laboratory	Space, Number of Students	Number of Experiments	Quality of Instruments	Laboratory Manuals
1.	Fluid Mechanics and Mechanical Operations Laboratory	158 m ² (35)	20	Good	Available
2.	Mass Transfer Laboratory	158 m ² (35)	8	Good	Available
3.	Process Dynamics & Control Laboratory	158 m ² (35)	5	Good	Available
4.	Thermodynamics and Reaction Engineering Laboratory	157 m ² (35)	6	Good	Available
5.	Heat Transfer Laboratory	157 m ² (35)	7	Very Good	Available
6.	Energy Engineering Laboratory	40 m ² (35)	8	Very Good	Available
7.	Biochemical Engineering Laboratory	60 m ² (35)	8	Very Good	Available
8.	Environment Engineering Laboratory	42 m ² (12)		Very Good	Available
9.	Membrane Science and Technology Laboratory	54 m ² (12)		Very Good	Available
10.	Multiphase System Laboratory	42 m ² (12)		Good	Available

- All the labs have sufficient space to accommodate specified number/batch of students with sufficient number of equipment.
- Groups of 5-6 students are allotted an experiment for the lab work assigned.
- All the labs have good ambience equipment and experiments are arranged in such a manner to make the students feel comfortable while working.
- All the laboratories have fire extinguishers.
- All the laboratories are in the ground floor.
- Proper storage facilities for the allied accessories.
- White boards for demonstration of the experiment.
- Bookracks and cupboards for storing laboratory records.
- LAN facility along with desktop is available in every laboratory.
- Proper ventilation with exhaust fans.
- Proper Seating Area for Laboratory Assistants.
- Bulletin Boards for news and updates.
- Power backup in some laboratories.
- Proper and aesthetic electrical fitting.
- Cooling fans installed.
- Electrical heating system and gas heaters are provided for in the winter months.

Sub criteria	Evaluation	Marks
6.2 Maintenance and overall ambience	All laboratories are well equipped to run the program with sufficient manpower	10

6.3 Safety measures in laboratories (10)

Claimed 10

Sl. No.	Name of Laboratory	Safety measures
1.	Fluid Mechanics and Mechanical Operations Laboratory	<ul style="list-style-type: none"> • Proper ventilation • Safety fabric gloves • Miniature circuit breaker • Fire Extinguisher • Safety instructions chart • Smoke Alarms • First Aid Box • Laboratory Aprons
2.	Mass Transfer Laboratory	<ul style="list-style-type: none"> • Proper ventilation • Safety fabric gloves • Miniature circuit breaker • Fire Extinguisher • Safety instructions chart • Smoke alarms • First Aid Box • Laboratory Aprons
3.	Process Dynamics & Control Laboratory	<ul style="list-style-type: none"> • Proper ventilation • Safety fabric gloves • Miniature circuit breaker • Fire Extinguisher • Safety instructions chart • Smoke alarms

		<ul style="list-style-type: none"> • First Aid Box • Laboratory Aprons
4.	Thermodynamics and Reaction Engineering Laboratory	<ul style="list-style-type: none"> • Proper ventilation • Heat resistant fabric covers around heating vessels • Safety gloves • Miniature circuit breaker • Fire Extinguisher • Safety instructions chart • Smoke alarms • First Aid Box • Safety Goggles • Laboratory Aprons
5.	Heat Transfer Laboratory	<ul style="list-style-type: none"> • Proper ventilation • Wear aprons in the laboratory • Wear shoes while operating any machine • Heat resistant fabric covers around heating vessels • Safety gloves • Miniature circuit breaker • Fire Extinguisher • Safety instructions chart • Smoke alarms • First Aid Box
6.	Energy Engineering Laboratory	<ul style="list-style-type: none"> • Proper ventilation • Safety disposal system • Safety gloves • Miniature circuit breaker • Fire Extinguisher • Safety instructions chart • Smoke alarms • First Aid Box • Laboratory Aprons • Safety Goggles
7.	Biochemical Engineering Laboratory	<ul style="list-style-type: none"> • Proper ventilation • Proper ventilation • Safety rubber gloves • Safety shield • Chemical splash goggles • Chemical storage cabinets • Miniature circuit breaker • Fire Extinguisher • Safety instructions chart • Smoke Alarms • First Aid Box • Laboratory Aprons • Safety Goggles • Proper biochemical waste disposal

8.	Environment Engineering Laboratory	<ul style="list-style-type: none"> • Proper ventilation • Proper ventilation • Safety rubber gloves • Safety shield • Chemical splash goggles • Chemical storage cabinets • Miniature circuit breaker • Fire Extinguisher • Safety instructions chart • Smoke Alarms • First Aid Box • Laboratory Aprons • Safety Goggles • Proper biochemical waste disposal
9.	Membrane Science and Technology Laboratory	<ul style="list-style-type: none"> • Proper ventilation • Proper ventilation • Safety rubber gloves • Safety shield • Chemical splash goggles • Chemical storage cabinets • Miniature circuit breaker • Fire Extinguisher • Safety instructions chart • Smoke Alarms • First Aid Box • Laboratory Aprons
10.	Multiphase System Laboratory	<ul style="list-style-type: none"> • Proper ventilation • Safety shield • Chemical splash goggles • Chemical storage cabinets • Miniature circuit breaker • Fire Extinguisher • Safety instructions chart • Smoke Alarms • First Aid Box • Laboratory Aprons • Safety Goggles

Table B.6.3

Sub criteria	Evaluation	Marks
6.3 Safety measures in the Laboratories	All the laboratories have proper safety measures in place.	10

6.4 Project Laboratory (20)

Claimed 20

Sl. No.	Name of Laboratory	Name of the Important equipment	Laboratory Incharge
1.	Biochemical Engineering Laboratory	<ol style="list-style-type: none"> 1. BOD Incubator 2. Furnace 3. Biosafety Cabinet 4. Autoclave 5. Waterbath 6. Fermenter 7. Centrifuge 8. Oxygen Analyzer 9. pH meter 10. Electronic Balance 11. Vacuum Pump 12. UV-Vis Spectrophotometer 13. Incubator Shaker 14. Bioreactor 	Prof. (Dr.) Muhammad Noor Salam Khan
2.	Environment Engineering Laboratory	<ol style="list-style-type: none"> 1. BET Analyzer 2. Hot Air Oven 3. Laboratory Oven 4. Turbidity Meter 5. Orbital Incubator Shaker 6. Shaking Incubator 7. Magnetic Stirrer 8. Sieve Shaker 9. pH/Ion meter 10. Multiparameter Meter (pH, Conductivity, DO) 11. Digital Flame Photometer 12. Water Demineralizer 13. Water Purification System 14. Weighing Balance 15. UV-Visible Spectrophotometer 	Dr. Tanveer Rasool Dar

3.	Energy Engineering Laboratory	<ol style="list-style-type: none"> 1. Pour Point Apparatus 2. Flash Point Apparatus 3. Smoke Point Apparatus 4. Dew Point Apparatus 5. Cloud Point Apparatus 6. Fire Point Apparatus 7. Incubator 8. Furnace 9. Oven 10. Magnetic Stirrer 11. Microscope 12. Vaccum Oven 13. Automatic Bomb Calorimeter 14. Proximate Analyzer 15. CHNS/O Analyzer 16. pH Meter 17. Hydrothermal Reactor 18. Double Distilled Water Unit 19. Centrifugal Pump 20. Vacuum pump 21. COD/Photometer 22. Dissolved Oxygen Meter 23. Filtration Assembly 24. Autoclave 25. Ball Mill 26. Double Beam Spectrophotometer 27. Ultra Sonic Cleaner 28. Electronic balance 29. Nano Autoclave 30. Sieve Set 	Dr. Mushtaq Ahmad Rather
4.	Membrane Science and Technology Laboratory	<ol style="list-style-type: none"> 1. Magnetic Stirrer 2. DC Power Supply 3. Hot Air Oven 4. Programmable Muffle Furnace 5. pH and conductivity Meter 6. Syringe Infusion Pump 7. P-type Rotameter 8. Weighing Balance 9. Porometer 10. Preistaltic Pump 11. Vacuum Pump 	Dr. Fasil Qayoom Mir
5.	Multiphase System Laboratory	<ol style="list-style-type: none"> 1. Rheotest 2. Monoblock Pump 3. Reflectometer 4. Helical Coil Heat Exchanger 5. Single Pipe Heat Exchanger 6. Ultrasonic Water Bath 7. Cryostat 	Dr. Malik Parvez Ahmad

6.	Catalysis Laboratory	<ol style="list-style-type: none"> 1. Triple Output Programmable DC Power Supply 2. Electrolysis Cell 3. Anion and Cation Exchange Membranes 	Ms. Fatima Jalid
7.	Computer Laboratory	<ol style="list-style-type: none"> 1. 10 PCs of the configuration: Dell Optiplex 9020, i7-4790 CPU @ 3.60GHz, 64 bit, 4GB RAM 	Dr.,Malik Parvez Ahmad

Sub criteria	Evaluation	Marks
6.4 Project Laboratories	The project laboratories are well equipped with proper seating arrangement, UPS back up and LAN connectivity.	20

Criterion 7	Continuous Improvement	75
Marks Claimed		62

7.1. Actions taken based on the results of evaluation of each of the POs & PSOs (30)

POs & PSOs Attainment Levels and Actions for improvement – CAY 2017-18 **Claimed 27**

POs	Target Level	Attainment Level	Observations
PO1: Engineering Knowledge:			
Apply the knowledge of governing sciences, mathematics and engineering principles for the solution of chemical engineering principles.			
PO 1	2.5	2.5	Chemical engineering curriculum requires the strong foundation of theoretical and practical knowledge of Physics, chemistry and mathematics, which the students study in their first year, but student's lags in correlating the theoretical concepts with applications. Attainment level has been reached. The following actions are made in order to sustain this attainment level.
Actions taken			
<p>i. Visit to core process Industries to boost the technical knowledge/skills of Chemical Engineering. Additionally the visit will be helpful to understand the industrial environment & co-ordination between various sections of the industry</p> <p>ii. We encourage students to actively participate in technical events, other events where their basic knowledge should convert to application matching with defined level of their standards.</p>			
PO2: Problem analysis			
Identify/Recognize, analyze, formulate and solve problems related to chemical engineering systems.			
PO 2	1.9	1.9	The problem solving and analysing skills gained through first and second year courses helps the students to apply in real time application. Attainment level has been reached. The following actions are made in order to sustain this attainment level.
Actions taken			
<p>i. Emphasis on solution of complex engineering problems of visiting industries.</p> <p>ii. Students are encouraged to observe their homes and surroundings to gain insight into real life engineering problems and think of possible approaches/solutions to these problems.</p>			

PO3: Design/Development of solutions			
Design a chemical process to meet the desired needs within the constraints of economics, safety and sustainability.			
PO 3	1.8	1.3	Projects (Major/ Minor) undertaken by students individually or under guidance lack strong social relevance and concern to environmental issues. Attainment level has been reached. The following actions are made in order to sustain this attainment level.
Actions taken			
<p><i>i. Students are encouraged to include all standard parameters within the constraints of safety & sustainability, while designing a chemical process.</i></p> <p><i>ii. Students are inspired to take up the design products with special emphasis on environmental concerns.</i></p>			
PO4: Investigation of Complex problems			
Ability to think independently and creatively to formulate innovative solutions to chemical engineering problems.			
PO 4	1.1	1.0	It is observed that most of the investigations/project (abstract and literature survey) are addressing the research but does not end with valid conclusions. Attainment level has been reached. The following actions are made in order to sustain this attainment level.
Actions taken			
<i>i. Technical events/workshops/STC's/Online Courses are utilized to impart more knowledge & research methods to formulate innovative solutions to complex Chemical Engineering Problems.</i>			
PO5: Modern tools usage:			
Employ learning and skills of modern tools to analyse, design, and develop advanced and complex chemical engineering processes.			
PO 5	1.0	0.6	Upgradation of resources and modern tools is fundamental to drive meaningful research and meet industry standards. Attainment level has been reached. The following actions are made in order to sustain this attainment level.

Actions taken			
<i>i. Labs are modernised & developed to inculcate the image of modern analytical & computational tools like TGA, FTIR, CHNS Analyser, FLUENT, MATLAB etc.</i>			
PO6: Engineer and Society			
Apply knowledge necessary to assess the impact of engineering solutions in global, environment, safety and societal context.			
PO 6	1.4	0.8	The courses of Chemical Engineering need to address the needs of health, safety and social concerns regarding engineering practices in real life. Attainment level has been reached. The following actions are made in order to sustain this attainment level.
Actions taken			
<i>i. To understand the safety, environmental & Social aspects of process Industries & take up collaborative projects for their professional growth.</i>			
PO7: Energy and environmental sustainability			
Competence and creativity to use engineering principles to address energy and environmental challenges.			
PO 7	1.0	0.9	The issues of global and environmental awareness among the student should be improved and the main emphasis is to be given locally available energy resources. Attainment level has been reached. The following actions are made in order to sustain this attainment level.
Actions taken			
<i>i. Projects addressing the global energy & environmental issues are prepared to be taken up by the students with a focus on consumption, utilization & proper management of energy</i>			
<i>ii. Technical workshops related to environmental issues & utilization of renewable energy resources are a regular feature.</i>			
PO8: Ethics and Professionalism			
Upholding of ethical values in undertaking professional responsibilities to achieve the desired goals.			
PO 8	0.6	0.5	Communications and other ethical/moral knowledge is lagging when it comes to application of Engineering expertise, needed to be addressed

			for real life situations. Attainment level has been reached. The following actions are made in order to sustain this attainment level.
Actions taken			
<i>i. Motivational talks, cooperative lectures & programmes on mutual & ethical practices are arranged in order to inculcate professional ethics & sense of honesty in students.</i>			
PO9: Team work and leadership			
Capacity to work proficiently as a team in its inclusiveness, and to accept the position of responsibility, accountability and leadership, with a tolerance for ambiguity.			
PO 9	0.4	1.3	Ability to work as team, with coordination, found to be lacking. Capability to attain constructive results by students when working individually on Projects/Ideas is deficient, Attainment level has been reached. The following actions are made in order to sustain this attainment level.
Actions taken			
<i>i. To help the students to groom the skills like leadership, team work, coordination, commitment and being an effective team member. Various programmes and counselling sessions are organized on departmental as well on institute level.</i>			
PO10: Communication skills			
Articulate and interpretable communication abilities, both oral and written, to deliver and express solutions, strategies, instructions and opinions.			
PO 10	0.5	1.6	Presentation and report writing skills and communication skills are to be further improved among the students. Attainment level has been reached. The following actions are made in order to sustain this attainment level.
Actions taken			
<i>i. Group discussions, seminars, presentations and soft skills training programmes are organized to enhance the aspects of communication/skills.</i>			
PO11: Project Management and finance			
Employ proper managerial and financial skills to the field of Chemical engineering.			
PO 11	1.3	0.5	Managerial principles to students work is needed to be inculcated in students by introduction of

			various courses underlining these principles. Attainment level has been reached. The following actions are made in order to sustain this attainment level.
Actions taken			
<i>i. The awareness is generated in students regarding managerial principles and projects through some core courses related to management, economics and organization of process industries.</i>			
PO12: Lifelong Learning			
Embody an urge to pursue life-long learning which advances the understanding of chemical engineering and allied areas and keep pace with the contemporary technology.			
PO 12	1.0	0.5	The pre-final and final year courses of the program impart knowledge of contemporary issues and develop aptitude for lifelong learning. Attainment level has been reached. The following actions are made in order to sustain this attainment level.
Actions taken			
<i>i. Using ICT facilities like PPT's, live demonstrations, NPTEL lectures.</i>			
<i>ii. Encourage the teachers to highlights the allied areas of chemical engineering to keep pace with contemporary technology.</i>			

Table-B.7.1a

PSO1: To provide basic facilities in the Department for the students to work on minor research projects to enhance their exploration of ideas leading to innovation and entrepreneurial skills.			
PSO1	1.3	1.1	Exposure of students to various sophisticated analytical tools/equipments to motivate them to undertake real life problems. Students are encouraged to coordinate with Innovation and Entrepreneurship cell of the Institute to develop entrepreneurship skills
ACTION1 Academic and Entrepreneurship workshops and conferences are being organized frequently to share the concerns of the society with emphasis on entrepreneurship			
PSO2: To provide enough opportunities to hone their communication skills (both written as well as spoken) to communicate effectively to the professionals and to the society at large.			
PSO2	0.6	1.2	Workshops and seminars are conducted to inculcate ethics, good interpersonal relationships, ability to communicate effectively, leadership qualities and project management.
ACTION1: Career readiness program and corporate lectures are arranged to meet the expected			

goals.			
PSO3: To offer them such design courses (both experimental & theoretical) which may make use of the latest developments in the areas of computation and artificial intelligence in order to make the engineering systems safe, regulatory requirement compliant, environment friendly, energy efficient and thrilling.			
PSO3	1.3	1.0	To inculcate ethics, good interpersonal relationships, ability to communicate, leadership and project management.
ACTION1: Students are motivated to take up the real life problems during the project work with the focus on industrial pollution, its effects and proper remedies through usage of modern software and equipments. Special attention is paid towards environment and energy conservation.			

Table-B.7.1b

Claimed 12

7.2: Internal Audit Report (15)**Auditors Name:**

1. Dr. M. K. Jha
Professor, Department of Chemical Engg., N.I.T Jalandhar.
2. Dr. V. C. Srivastava
Associate Professor, Department of Chemical Engg., I.I.T Roorkee.

Date of Audit: 18-03-2016

<i>Proposed</i>	<i>Action</i>
<ul style="list-style-type: none"> ○ Purchasing of few sophisticated instruments like: GC, TGA, FTIR, GC-MS, UPLC, FE_SEM, X-RD, Ion chromatography, COD Analyser, TOC analyser, pore area distribution analyser. 	<ul style="list-style-type: none"> ❖ TGA (order placed) ❖ COD Analyser purchased ❖ GC-MS in pipeline under CRFC ❖ DO/PH/Ion Meter purchased ❖ CHNS Analyser purchased
<ul style="list-style-type: none"> ○ The trend started by department faculty members of publishing research papers in reputed journals like Elsevier, ACS, Taylor-Francis should be encouraged amongst PhD and M.Tech students. 	<ul style="list-style-type: none"> ❖ The trend has been taken initiated as suggested and for details of published papers given in criteria 5.
<ul style="list-style-type: none"> ○ The department should initiate interaction with industries present in J&K as well as other parts of the country in form of lectures from industrial personnel, academia-industry interaction sessions/workshops. 	<ul style="list-style-type: none"> ❖ The department has initiated conducting workshop / STC's etc. ❖ In last 3 years 3 STC's and 2 workshops were conducted Following are the details ✓ Coordinated a one day workshop on Process Safety on 8th of June 2017 ✓ Coordinated five day national level workshop on Environment title "Connecting people to nature-CPTN-17" from 25-29th Sep., 2017.

	<ul style="list-style-type: none"> ✓ Coordinated five day workshop on Process Control from 13th to 17th of November 2017 ✓ Coordinated five days S.T.C on Transport Process in Jan-2018.
<ul style="list-style-type: none"> ○ Efforts should be made to Interact students with visiting faculties from eminent industries and academia. 	<ul style="list-style-type: none"> ❖ The suggestion has been widely implemented. Following are the details of visiting faculties and industry persons: <ul style="list-style-type: none"> ✓ Mr. Junaid Ashraf, IOCL ✓ Dr. I.M. Mishra, IIT/ISM Dhanbad ✓ Dr. V.C. Srivastava, IIT Roorkee ✓ Dr. M.K. Jha, NIT Jalandhar ✓ Dr. Jatindra Sangwai, IIT Madras
<ul style="list-style-type: none"> ○ Computational facilities of the department should further be augmented with addition of high end computational facilities, cluster computing, servers, etc. A full high end computer lab with chemical engineering related softwares such as ANSYS, ASPEN PLUS, COMSOL, GEMS, MATLAB, MATHEMATICA, MAPPLE, STATISTICA etc should be established. Moreover both undergrad and postgrad students should be given projects that would acquaint them with these softwares, to increase there employability and motivate them to further research 	<ul style="list-style-type: none"> ❖ Purchase of software is in pipeline
<ul style="list-style-type: none"> ○ Books in the central library regarding Chemical Engineering should be increased. Further, the students may be issued six textbooks for the entire semester, three references and research books for maximum 15 days. Digitisation of library may be done on priority basis and linked to the department computers. 	<ul style="list-style-type: none"> ❖ Implemented as proposed/suggested.
<ul style="list-style-type: none"> ○ Subscription to chemical engineering journals should be increased for benefit of research students and faculty. 	<ul style="list-style-type: none"> ❖ Implemented as suggested
<ul style="list-style-type: none"> ○ Effort should be made to submit a proposal to IChE (Indian Institute of Chemical Engineers)headquarters, Kolkata for 	<ul style="list-style-type: none"> ❖ The chapter of IChE is already in place. However we are in a process of submitting the proposal for regional centre of IChE at

opening a new Srinagar regional centre with its headquarters at NIT Srinagar.	NIT SRINAGAR..
○ It is recommended that provision may be made to admit against vacant seats for M.Tech. programme of Chemical Engineering, based on written examination to be conducted by the Institute.	❖ Proposal in this regard stand submitted before senate for approval.
○ It's recommended that more number of research scholars unfilled in other departments, may be transferred to the department of Chemical Engineering till increase in number of PhD scholars.	❖ Proposal submitted
○ Renovation of all laboratories of the department may be initiated with floor tiling, False-ceiling and air conditioners, wherever necessary, on priority basis.	❖ Done in most of the cases. <ul style="list-style-type: none"> ✓ Energy Engineering Lab. ✓ Environmental Engg. Lab. ✓ Membrane Laboratory. ✓ Biochemical Engineering Lab.
○ There is an urgent need of submission of sponsored research proposals by the department faculty members to various central and state funding agencies like DST, CSIR, MHRD, MOEF, DAE, DRDO, Council of Science and Technology J&K, etc.	❖ One project sanctioned by MHRD (Briquetting of Dal Lake weeds to be used as fuel source) Total Budget: 23.94 Lacks. D.O.C: Jan.-2018.

Table-B.7.2

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

Claimed 07

➤ Improvement in Placement, Higher studies (Year 2013-2018):

Academic Year	Number of students enrolled	Number of students placed	Number of students opted for higher studies	Percentage of placement and higher studies
2017-2018	64	09	-	-
2016-2017	48	07	05	25.00
2015-2016	65	17	07	36.92
2014-2015	66	13	06	28.79

Table-7.3a

➤ **Placements**

Academic Year/ Department	Student Strength	Number of students placed	Type Of Company (Core or Inter-Disciplinary), Name/Address	Compliance of Placement Quality
2017-2018 Chemical	64	3	Vedanta (Core)	Medium
		3	Infosys (IT-related)	Low
		1	Resonance Coaching (Education-related)	Medium
		1	ZS securities (Non-core)	Medium
2016-2017 Chemical	48	2	Vedanta (Core)	Medium
		1	Mu Sigma (IT-Related)	
		1	Godrej Agrovet	
2015-2016 Chemical	65	5	Wipro	
		10	Infosys	
2014-2015 Chemical	66	1	Resonance Coaching (Education-related)	
		1	Trident	
		3	JSW	
		6	Infosys	

Table-B.7.3b

Note : Although the number of students placed has decreased, but the matter of fact is that the number of students placed in core companies has increased subsequently.

➤ **Higher Studies**

Academic Year/ Department	Student Strength	Number of students opted for Higher Studies	Examination/Tests Successfully Qualified/Performed by Students for Admission to Institutes for Higher Studies	Details of the Higher studies Institution
2017-2018 Chemical	64	5	Gate Qualified	

2016-2017 Chemical	48	1	Direct Phd	IIT Delhi
		1	GRE/TOEFL	Rutgers University, New Jersey, USA
		1	Direct Phd	IIT Guwahati
		1	M-Tech	IIT Kharagpur
		2	M-Tech	IIT Kanpur
		1	M-Tech	NIT Delhi
2015-2016 Chemical	65	1	Gate Qualified	IIT BHU
		2	Gate Qualified	IIT Gandhinagar
		1	Gate Qualified	IIT Kharagpur
		1	Gate Qualified	IIT Delhi
		3	Gate Qualified	NIT Srinagar
2014-2015 Chemical	66			

Table-7.3c

Note: Number of students admitted for higher studies has increased.

7.4: Improvement in the Quality of Students Admitted to the Programme (20)

Claimed 16

Items		2016-2017	2015-2016	2014-2015	2013-2014	2012-2013	2011-2012
<i>National level Entrance examination (JEE Main/AIEEE)</i>	<i>No. of Students admitted</i>	34	60	64	49	66	71
	<i>Opening Rank</i>			35,329	28,762	20,916	21,503
	<i>Closing Rank</i>			2,95,685	3,17,422	1,57,082	2,63,661
<i>State Level entrance examination (JKCET)</i>	<i>No. of students admitted</i>	NIL	NIL	NIL	NIL	NIL	NIL
	<i>Opening Rank</i>						
	<i>Closing Rank</i>						
<i>Lateral Entry Admission Details – Entrance Examination</i>	<i>No. of students admitted</i>	NIL	NIL	NIL	NIL	NIL	NIL
	<i>Opening Rank</i>						
	<i>Closing Rank</i>						
<i>Average CBSE/JKBOSE/OTH ER Boards Result (Admitted students average marks in Physics, Chemistry & Mathematics)</i>	<i>Physics</i>	<i>CBSE</i>		84.26	80	73.22	73.59
		<i>JKBOSE</i>		81.09	89	84.69	76.91
		<i>Other</i>		90.8	86.16	77.94	77.85
	<i>Chemistry</i>	<i>CBSE</i>		90.66	81	78.11	76.70
		<i>JKBOSE</i>		91.68	86	79.09	75.41
		<i>Other</i>		89.06	80.16	78.78	80.79
	<i>Mathematics</i>	<i>CBSE</i>		91.4	87	70.37	69.70
		<i>JKBOSE</i>		89.5	78	79.09	80.96
		<i>Other</i>		87.8	81	87.84	75.83

Table-B.7.4

CRITERION 8	FIRST YEAR ACADEMICS	Marks 50
Marks Claimed		50

8. FIRST YEAR ACADEMICS (50)

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

Assessment = $(5 \times 15)/\text{Average FYSFR}$ (Limited to Max. of 5)

Data for first year courses to calculate the FYSFR:

Year	Number of students (approved intake strength)	Number of faculty members (considering fractional load)	FYSFR
CAY	727	47	15.47
CAY _{m1}	685	43	15.93
CAY _{m2}	685	41	16.70
Average	16.03		
Assessment = $(5 \times 15)/\text{Average FYSFR}$ (Limited to Max. 5)	4.67		

Table-B.8.1

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

Assessment of qualification = $(5x + 3y)/RF$

x = Number of Regular Faculty with Ph. D

y = Number of Regular Faculty with Post-graduate qualification

RF = Number of faculty members required as per SFR of 15:1

Year	x	y	RF	Assessment of faculty qualification $(5x + 3y)/RF$
CAY	20	48	48.46	5
CAY _{m1}	20	43	45.66	5
CAY _{m2}	20	42	45.66	5
Average Assessment				5

Table-B.8.2

8.3 First Year Academic Performance (10)

Academic Performance = $(\text{Mean of 1st Year Grade Point Average of all successful Students on a 10 point scale})$ or $(\text{Mean of the Percentage of marks in First Year of all successful students} / 10)$

x (number of successful students / number of students appeared in the examination)

Successful students are those who are permitted to proceed to the second year.

Academic Performance	2017-18	2016-2017	2015-2016
Mean of percentage of Marks of all successful students(X)	76.16	72.37	70.74
Total Number of successful students(Y)	492	345	571
Total Number of students appeared in the examination(Z)	508	385	573
Academic Performance	7.38	6.49	7.05

Assessment = Average API: 6.97

Table-B.8.3

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

8.4.1 Describe the assessment processes used to gather the data upon which the evaluation of Course Outcomes of first year is done (5)

Examples of data collection processes may include, but are not limited to, specific exam questions, laboratory tests, internally developed assessment exams, oral exams assignments, presentations, tutorial sheets etc.)

(a) CO Assessment Rubrics:

Course Outcome is evaluated based on the performance of students in mid-term exam, major examination and continuous assessment (in the form of assignments, quizzes, case-study and presentation). The contributions are 30%, 60% and 10% for mid-term exam, major examination and continuous assessment.

- i. Mid-Term Assessment (30% weightage)
- ii. Major Assessment (60% weightage)
- iii. Continuous Assessment (10% weightage)

(b) CO Assessment Tools

The various assessment tools used to evaluate COs are listed in table given below:

Course	Assessment Tools	Frequency
Theory	Mid-term	Once/Course
	Continuous Assessment	Daily
	Major	Once/Course
Lab	Continuous Assessment (Report, Experiments)	Daily
	Major Lab Exam (Viva-voice, Perform a Given Experiment)	Once/Lab Course

Table-B.8.4a

Course outcomes of all courses are assessed with the help of assessment tools mentioned in above Table and attainment level is evaluated based on set attainment rubrics as per Table given below. If the average attainment of a particular course for three consecutive years is greater than 80% of the maximum attainment value (i.e. 80% of 3 = 2.4), then for that particular course the current rubrics for attainment must be changed to analyse continuous improvement.

Attainment Levels of COs

Assessment Methods	Attainment Levels	
Internal Assessment	Level 1	50% of students scoring more than 50% marks in internal assessment tools.
	Level 2	60% of students scoring more than 50% marks in internal assessment tools.
	Level 3	70% of students scoring more than 50% marks in internal assessment tools

University Assessment	Level 1	50% of students scoring more than 50% marks in university examination.
	Level 2	60% of students scoring more than 50% marks in university examination.
	Level 3	70% of students scoring more than 50% marks in university examination.

Table-B.8.4b

(c) CO Attainment Calculation of a Course**Assessment tool of Computer fundamentals for batch 2013 - 17**

Assessment Tool	CIT101.1	CIT101.2	CIT101.3	CIT101.4
Assignment 1	3	3	-	-
Assignment 2	-	-	-	-
Mid-Term Exam	3	3	-	-
Optional Tests (Make up tests/ Re-tests)	-	-	-	-
Internal Attainment	3	3	-	-
End-Term Exam	3	3	3	3
Total Attainment	3	3	1.8	1.8
Overall CO Attainment	2.4			

Table-B.8.4c**Assessment Tool of Computer Fundamentals Lab for Batch 2013 - 17**

Assessment Tool	CIT102.1	CIT102.2	CIT102.3	CIT102.4	CIT102.5
Daily Evaluation	3	2	2	3	-
End-Term Exam	3	3	3	3	3
Total Attainment	3	2.5	2.5	3	1.5
Overall CO Attainment	2.5				

Table-B.8.4d**(d) Quality/Relevance of Assessment Process****Theory**

Mid-term Test: It serves to encourage students to keep up with subject matter covered in class. This is of 90 minute duration and is evaluated for 30 marks. Minimum one test is conducted for each course. The questions are framed in such a way that it should satisfy blooms taxonomy, wherein each question is mapped to the appropriate course outcome of the respective course, which is evaluated based on the set attainment levels by the department.

Major Exam: It is of 2 hours duration and is evaluated for 60 marks. The question paper is framed in such a way that it satisfies blooms taxonomy, wherein each question is mapped to the appropriate course outcomes of the respective course, which is evaluated based on the set attainment levels by the department. The question paper will be verified by the Head of the Department and may be accepted with or without modifications.

Continuous Assessment: It includes assignments, quiz, presentations, etc. These are qualitative performance assessment tools designed to assess students' knowledge of engineering practices, framework and problem solving.

Students are assigned course-related work to be completed outside of contact hours, and their submissions are graded on the basis of work quality and originality. A minimum of 2 assignments are given per course and each assignment is evaluated for 10 marks. The questions in the assignment should be mapped to the Course Outcomes of the subject. The questions given are categorized to knowledge, comprehension, application, analysis, evaluation and synthesis level.

Practical

Performance: Lab courses provide students first-hand experience with course concepts and the opportunity to explore methods used in their discipline. All the students are expected to be regular and learn the practical aspects of the subject and develop the necessary skills to become professionals. In order to facilitate interaction among the students and to develop team spirit, the students are expected to carry out experiments in groups. Performance assessment is based on the ability of the student to

actively participate in the successful conduct of prescribed practical work and draw appropriate conclusions. The student submits a record of practical work performed each week.

Mid-term lab exam: A mid-term lab exam of 3 hours duration is conducted to assess the ability of a student to perform a given task by integrating the knowledge gained from related theory course and regular lab sessions.

Major examination: This end-semester practical examination is of 3-hour duration and covers the entire syllabus of the course. It should generally satisfy all course outcomes for a particular course. The COs are evaluated based on the set attainment levels.

8.4.2 Record the attainment of Course Outcomes of all first year courses (5) Program shall have set attainment levels for all first year courses.

(The attainment levels shall be set considering average performance levels in the university examination or any higher value set as target for the assessment years. Attainment level is to be measured in terms of student performance in internal assessments with respect the COs of a subject plus the performance in the University examination)

CO attainment of all courses

Course	CAY 2013-17	CAY m1 2012-16	CAY m2 2011-15
MTH 101	2.59	2.1	2.4
MTH 201	2.43	2.13	2.16
CIV 102	2.4	2.7	2.4
HU 101	2.52	2.76	2.28
HU 201	2.64	2.52	2.40
MEC 201	2.4	2.37	2.37
PHY 101	2.5	2.53	2.56
PHY 102 P	2.78	2.82	2.56
PHY 201	2.51	2.47	2.52
PHY 202 P	2.72	2.75	2.85
IT 101	2.5	2.5	3
IT 102 P	2.4	1.9	2.4
CSE 201	2.4	2.4	2.4
CSE 202 P	3	3	2.4
CHEM 101	2.4	2.4	2.4
CHEM 102 P	2.2	2.2	2.2
CHEM 201	2.4	2.4	2.4
CHEM 202 P	2.4	2.4	2.4

Table-B.8.4.2

8.5 Attainment of Program Outcomes from first year courses (20)

8.5.1 Indicate results of evaluation of each relevant PO and/ or PSO, if applicable (15)

(Describe the assessment processes that demonstrate the degree to which the Program Outcomes are attained through first year courses and document the attainment levels. Also include information on assessment processes used to gather the data upon which the evaluation of each Program Outcome is based indicating the frequency with which these processes are carried out).

(a) PO Assessment

PO assessment is done by giving 80% weightage to direct assessment and 20% weightage to indirect assessment. Direct assessment is based on CO attainment where 80% weightage is given to attainment through end exam and 20% weightage is given to attainment through internal assessments. Indirect assessment is done through program exit survey, alumni survey and employer survey where program exit survey and employer survey are given a weightage of 25% each and alumni survey is given a weightage of 50%.

(b) PO Assessment Tools

The various direct and indirect assessment tools used to evaluate POs and the frequency with which the assessment processes are carried out are listed in table below:

Assessment tools used for evaluation of PO and PSO attainment

PO Assessment Tools and Processes									
Direct weightage (80%)	CO	Course Type		Assessment Methods	Frequency				
		Indirect weightage 20%	Assessment	Theory		Internal Test	Three per course		
Assignments	Twice per course								
End Exam	Once per course								
Project	Practical					Performance	Every lab session		
						Model Lab Exam	Once per course		
						University Exam	Once per course		
	Seminar						Presentation	Once per course	
							Zeroth Review	Once per course	
							Phase I	Evaluation by Guide	Continuous evaluation
								Phase II	First Review
	Final Review			Once per course					
				Evaluation by Guide	Continuous evaluation				
	Viva-Voce							Institute assessment	Once in a program
Program Exit Survey		Once in a year							
Employer Survey	Surveys				Once in 2 years				
					Alumni Survey	Once in a year			

Table-B.8.5.1a

(c) Direct Assessment Tools and Process

Direct assessment tools described in above section are used for the direct assessment of POs. Initially, the attainment of each course outcome is determined using internal as well as external assessment. The attainment of each PO corresponding to a particular course is determined from

the attainment values obtained for each course outcome related to that PO and the CO-PO mapping values.

PO Attainment: CAY- 2013-17

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
MTH101	2.9	2.2	2.6	2.5	2.5							
MTH201	3	2.5	2.5	2	2.5							
CIV 102	3	3				2	1			2	3	3
HU 101				1.2		1				1.8	1	
HU 201						1.52			1.20	1.08	1.20	1.20
MEC 201	2.8	0.7	0.8	0.8	0.8	0.7	0.8	1.8	0.88	0.7	0.8	2.8
PHY 101	2.56	1.96		0.6								
PHY 102 P	2.92	2.85						2.85				
PHY 201	2.52	1.91		0.6								
PHY 202 P	2.85	2.85						2.85				
IT 101	1.5		1.99	0.9	1.68	0.9			0.45			
IT 102 P	1.06	0.5	2.5	1.1	1.68	1.46						
CSE 201	2.4	2.4	2.4	2.4	2.3	0.8	0.8		0.8	0.8	1.85	2.4
CSE 202 P	3	3	3	3	2	1	1		1	1	1	1
CHM 201 T		1.2	0.4		0.4	0.4						
CHM 201P		0.76	0.24		0.24	0.24						
CHM 202 T			0.36				0.8					1.26
CHM 202 P	1.31	1.31	0.98			1.31	1.31					
Average	1.77	1.51	0.99	0.84	0.8	0.63	0.32	0.42	0.24	0.41	0.49	0.60

Table-B.8.5.1b

CAYm1- 2012-16

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
MTH 101	2.72	2.75	2.68	2.70	2.26							
MTH 201	2.67	2.28	2.27	1.85	2.13							
CIV 102	3	2	3			3	2		2	2	3	3
HU 101				0.96		1.4				1.72	1	
HU 201						1.4		1.08	0.96	0.96	0.96	1.12
MEC 201	2.8	0.7		0.6	0.8	0.7	0.8	1.8	0.8	0.7	0.8	2.8
PHY 101	2.53	1.93		0.6					1	-	-	2
PHY 102 P	2.68	2.82						2.82	1	1	1	1
PHY 201	2.47	1.91		0.6					-	-	1	2
PHY 202 P P	3	2.75	-	-	-			2.75				
IT 101	1		1.35	0.9	1.76	0.45			0.45			
IT 102 P	0.73	0.3	2.53	1.1	1.69					1.69		
CSE 201	2.4	2.4	2.4	2.4	2.3	0.8	0.8		0.8	0.8	1.85	2.4
CSE 202 P	3	3	3	3	2	1	1		1	1	1	1
CHM 201 T		1.2	0.4		0.4	0.4						

CHM 201 P		0.76	0.24		0.24	0.24						
CHM 202 T			0.36				0.86					1.2
CHM 202 P	1.31	1.31	0.97			1.31	1.31					
Average	1.68	1.45	1.07	0.74	0.75	0.59	0.37	0.47	0.45	0.55	0.59	0.92

Table-B.8.5.1c

CAY m2- 2011-15

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
MTH101	2.62	2.25	2.75	2.29	2.30							
MTH 201	2.70	2.76	2.29	1.88	2.47							
CIV 102	2	2				3	1	1			3	3
HU 101				0.96		1.17				1.48	0.92	
HU 201						0.96			0.96	0.96	0.96	1.12
MEC 201	2.8	0.7	0.8	0.8	0.8	0.7	0.8	1.8	0.8	0.7	0.8	2.8
PHY 101	2.49	1.37		0.6								
PHY 102 P	2.78	2.78						2.75				
PHY 201	2.51	1.54		0.6								
PHY 202 P	2.89	2.72		-				2.75				
IT 101	1		1.56	0.9	0.7	0.75			0.45			
IT 102 P	1.2	0.6	3	1.2	1.8	0.6						
CSE 201	2.4	2.4	2.4	2.4	2.3	0.8	0.8		0.8	0.8	1.85	2.4
CSE 202 P	3	3	3	3	2	1	1		1	1	1	1
CHM 201 T		0.95	0.4		0.40.4	0.40						
CHM 201 P		0.75	0.24		0.24	0.24						
CHM 202 T			0.36				0.8					1.26
CHM 202 P	1.31	1.31	0.98			1.31	1.31					
Average	1.65	1.39	0.99	0.81	0.72	0.61	0.32	0.46	0.22	0.27	0.47	0.64

Table-B.8.5.1d

8.5.2.Actions taken based on the results of evaluation of relevant POs (5)

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

POs Attainment Levels and Actions for Improvement (CAY 2013-2017)

PO	Target Level	Attainment Level	Observations
PO1			Engineering Knowledge
PO1	1.76	1.77	TARGET LEVEL ATTAINED Since students have basic background in subjects like Mathematics and Engineering Sciences the performance in the mid-term exam as well as end-exam was pretty good. However IT 101,IT102 and CHM 202 P have not attained the target level.

Action Taken			
1. ICT enabled teaching.			
2. Conducted problem oriented tutorial classes.			
3. Remedial classes for weaker students.			
PO2	Problem Analysis		
PO2	1.54	1.51	TARGET LEVEL NOT ATTAINED Since syllabus is focused on analytical concepts, analysis of various engineering problems was practiced more during the class sessions. So the students were able to perform good in the mid-term and end examination. However MEC 201, IT 102 P, CHM 201 T, CHM 202 P and CHM 201 P have not attained the target level.
Action Taken			
1. Problem analysis oriented teaching			
2. Conducted Tutorial sessions to solve engineering problems			
3. Weaker student coaching			
PO3	Design/development of Solutions		
PO3	0.95	0.99	TARGET LEVEL ATTAINED. Special attention were given to difficult subjects which exposed the students to develop solutions for various engineering problems. However, MEC 201, CHM 201 T, CHM 201 P, CHM 202 P and CHM 202 T have not attained the target level.
Action Taken			
1. Practiced designing solutions of the engineering problems in the class room hours.			
2. Exposure to professional approach in solving complex problems.			
3. ICT enabled teaching.			
PO4	Conduct Investigations of Complex Problems		
PO4	1.27	0.84	TARGET LEVEL NOT ATTAINED Class hours enriched with problems and case studies helped the students to get gather information about concepts and to solve the problems by investigating it. The syllabus is concentrated more on problem analysis, the class room sessions helped the students in conducting investigations of complex engineering problems. However MEC 201, PHY 101 and PHY 201 have not attained the target level.
Action Taken			
1. ICT enabled teaching.			
2. Expert lectures.			
3. Conducted Technical events as part of Technical Fest & other professional body activities.			

PO5	Modern Tool Usage		
PO5	1.10	0.80	TARGET LEVEL ATTAINED Exposure to various training sessions boosted the usage of modern tools in the engineering streams. However CHM 201 T and CHM 201 P have not attained the target level.
Action Taken			
1. Professional Training sessions. 2. Demonstration of latest software tools like CAD and scripting languages. 3. Conducted Technical events as part of Technical Fest & other professional body activities.			
PO6	The Engineer and Society		
PO6	0.86	0.63	TARGET LEVEL NOT ATTAINED Commitment of an Engineer to the society was trained as part of curriculum. Various NSS activities were arranged to boost the duties and responsibilities of budding Engineers. Seminar on Professional ethics conducted for the students trained them about the duties and responsibilities. However CHM 201 T and CHM 201 P have not attained the target level.
Action Taken			
1. Conducted Social Service activities as part of NSS. 2. Expert sessions on Professional Ethics. 3. Expert sessions on duties and responsibilities of Engineers in the society.			
PO7	Environment and Sustainability		
			TARGET LEVEL NOT ATTAINED The sustainable engineering practices were included in the curriculum which enabled the students to learn more about the Environment and sustainability.
PO8	Ethics		
			TARGET LEVEL ATTAINED Students were given training on ethics. Instructions were given to the student regarding the professional ethics to be followed in the laboratory sessions.
PO9	Individual and Team Work		
			TARGET LEVEL ATTAINED Lab sessions were conducted as individual / team work. The social service activities are completed in teams.
PO10	Communication		
PO10	0.66	0.67	TARGET LEVEL ATTAINED Students were given training on communication skills.

PO11	Project Management and Finance		
PO11	0.57	0.59	TARGET LEVEL ATTAINED Understanding and demonstrating management principles and applying to own works enable students to get exposed to Project management.
PO12	Lifelong Learning		
PO12	0.57	0.60	TARGET LEVEL ATTAINED Made the students aware about the need, to prepare and to engage in independent and lifelong learning in various engineering streams.

Table-B.8.5.2a

POs Attainment Levels and Actions for Improvement (CAY m1 2012-2016)

PO	Target Level	Attainment Level	Observations
PO1	Engineering Knowledge		
PO1	1.76	1.68	TARGET LEVEL NOT ATTAINED. Since students have basic background in subjects like Mathematics and Engineering Sciences the performance in the mid-term and end examination was pretty good. However CHM 202 P, IT 102 P and IT101 have not attained the target level.
Action Taken			
1. ICT enabled teaching. 2. Conducted problem oriented tutorial classes 3. Remedial classes for weaker students			
PO2	Problem Analysis		
PO2	1.54	1.45	TARGET LEVEL NOT ATTAINED. Since syllabus is focused on analytical concepts, analysis of various engineering problems was practiced more during the class sessions. So the students were able to perform good in the mid-term and end-examination. However MEC 201 and IT 102 P have not attained the target level.
Action Taken			
1. Problem analysis oriented teaching 2. Conducted Tutorial sessions to solve engineering problems 3. Weaker student coaching			
PO3	Design/development of Solutions		

PO3	0.95	1.07	TARGET LEVEL ATTAINED. Special attention were given to difficult subjects which exposed the students to develop solutions for various engineering problems. However CHM 201 T, CHM 201 P and CHM 202 T have attained the target level.
Action Taken			
1. Practiced designing solutions of the engineering problems in the class room hours 2. Exposure to professional approach in solving complex problems 3. ICT enabled teaching			
PO4	Conduct Investigations of Complex Problems		
PO4	1.27	0.74	TARGET LEVEL NOT ATTAINED Class hours enriched with problems and case studies helped the students to get gather information about concepts and to solve the problems by investigating it. Since the syllabus is concentrated more on problem analysis, the class room sessions helped the students in conducting investigations of complex engineering problems. However HU 101, MEC 201, PHY 101, PHY 201, IT 101 and IT 102 have not attained the target level.
Action Taken			
1. ICT enabled teaching 2. Expert lectures 3. Conducted Technical events as part of Technical Fest & other professional body activities			
PO5	Modern Tool Usage		
PO5	1.10	0.75	TARGET LEVEL NOT ATTAINED Exposure to various training sessions boosted the exposure to usage of modern tools in the engineering streams. However MEC 201, CHM 201T and CHM 201 P have not attained the target level.
Action Taken			
1. Professional Training sessions 2. Demonstration of latest software tools like CAD and scripting languages 3. Conducted Technical events as part of Technical Fest & other professional body activities.			
PO6	The Engineer and Society		

PO6	0.86	0.59	TARGET LEVEL NOT ATTAINED Commitment of an Engineer to the society was trained as part of curriculum. Various NSS activities were arranged to boost the duties and responsibilities of budding Engineers. Seminar on Professional ethics conducted for the students which trained the students about the duties and responsibilities of the students. However MEC 201, CSE 201, CHM 201 T, CHM 201 P and IT 101 have not attained the target level.
Action Taken			
1. Conducted Social Service activities as part of NSS			
2. Expert sessions on Professional Ethics			
3. Expert sessions on duties and responsibilities of Engineers in the society.			
PO7	Environment and Sustainability		
PO7	0.34	0.37	TARGET LEVEL ATTAINED The sustainable engineering practices were included in the syllabus which enabled the students to learn more about the Environment and sustainability.
Action Taken			
1. Conducted Social Service activities as part of NSS.			
2. Conducted sessions on sustainable engineering.			
3. Tutorials on sustainable engineering.			
PO8	Ethics		
PO8	0.28	0.47	TARGET LEVEL ATTAINED Instructions were given to the student regarding the professional ethics to be followed in the laboratory sessions. Students were given training on ethics.
Action Taken			
1. Expert sessions on professional ethics.			
2. Class on engineering ethics to be followed by in streams.			
3. Training sessions on life skills.			
PO9	Individual and Team Work		
PO9	0.36	0.45	TARGET LEVEL ATTAINED Lab sessions were conducted as individual / team work. The social service activities are completed in teams.
Action Taken			
1. Conducted team based social service activities.			
2. Professional Training sessions as part of internships.			
3. Team based problem solving in laboratory sessions			
PO10	Communication		
PO10	0.66	0.67	TARGET LEVEL ATTAINED Students were given training on communication skills.

Action Taken			
1. Expert lecture in communication skills.			
2. Sessions in language lab.			
3. Competitions based on communications as part of cultural activities.			
4. Training on life skills.			
PO11	Project Management and Finance		
PO11	0.57	0.59	TARGET LEVEL ATTAINED Understanding and demonstrating management principles and applying to own works enable students to get exposed to Project management.
Action Taken			
1. Professional Training sessions as part of internships.			
2. Class on engineering ethics to be followed by in streams.			
3. Expert lecture in communication skills.			
4. Financial management responsibility given to students in various technical events.			
PO12	Lifelong Learning		
PO12	0.57	0.92	TARGET LEVEL ATTAINED Made the students aware about the need, to prepare and to engage in independent and lifelong learning in various engineering streams.
Action Taken			
1. Team based problem solving in laboratory sessions.			
2. Professional Training sessions as part of internships.			
3. Expert lectures.			

Table-B.8.5.2b

POs Attainment Levels and Actions for Improvement (CAY M2 2011-2015)

PO	Target Level	Attainment Level	Observations
PO1	Engineering Knowledge		
PO1	1.76	1.65	TARGET LEVEL NOT ATTAINED. Since students have basic background in subjects like Mathematics and Engineering Sciences the performance in the mid-term and end exam was pretty good. However IT 101, IT 102 P and CHM 202 P have not attained the target level.
Action Taken			
1. ICT enabled teaching.			
2. Conducted problem oriented tutorial classes			
3. Remedial classes for weaker students			
PO2	Problem Analysis		

PO2	1.54	1.39	TARGET LEVEL NOT ATTAINED Since syllabus is focused on analytical concepts, analysis of various engineering problems was practiced more during the class sessions. So the students were able to perform better in the mid-term and end - examination. However MEC 201, PHY 101, IT 102 P, CHM 201 T, CHM 201 P and CHM 202 P have not attained the target level.
Action Taken			
1. Problem analysis oriented teaching. 2. Conducted Tutorial sessions to solve engineering problems. 3. Weaker student coaching.			
PO3	Design/development of Solutions		
PO3	0.95	0.99	TARGET LEVEL ATTAINED The tutorial hours conducted for all subjects has design problems and case studies, which exposed the students to design and develop solutions for various engineering problems. However MEC 201, CHM 201 T, CHM 201 P and CHM 202 T have not attained the target level.
Action Taken			
1. Exposure to professional approach in solving complex problems. 2. ICT enabled teaching.			
PO4	Conduct Investigations of Complex Problems		
PO4	1.27	0.81	TARGET LEVEL NOT ATTAINED Since the syllabus is concentrated more on problem analysis, the class room sessions helped the students in conducting investigations of complex engineering problems. However HU 101, MEC 201 and PHY 101 have not attained the target level.
Action Taken			
1. ICT enabled teaching 2. Expert lectures 3. Conducted Technical events as part of Technical Fest & other professional body activities			
PO5	Modern Tool Usage		
PO5	1.10	0.72	TARGET LEVEL NOT ATTAINED Exposure to various training sessions boosted the exposure to usage of modern tools in the engineering streams. However MEC 201, IT 101 and CHM 201 P have not attained the target level.

Action Taken			
1. Demonstration of latest software tools like CAD.			
2. Conducted Technical events as part of Technical Fest & other professional body activities.			
3. Expert lectures.			
PO6	The Engineer and Society		
PO6	0.86	0.61	TARGET LEVEL NOT ATTAINED Seminar on Professional ethics conducted for the students which trained the students about the duties and responsibilities of the students. However CSE 201 has not attained the target level.
Action Taken			
1. Conducted Social Service activities as part of NSS.			
2. Expert sessions on Professional Ethics.			
3. Expert sessions on duties and responsibilities of Engineers in the society.			
PO7	Environment and Sustainability		
PO7	0.34	0.34	TARGET LEVEL ATTAINED The sustainable engineering practices were given which enabled the students to learn more about the Environment and sustainability.
Action Taken			
1. Conducted Social Service activities as part of NSS.			
2. Conducted sessions on sustainable engineering.			
3. Tutorials on sustainable engineering.			
PO8	Ethics		
PO8	0.28	0.46	TARGET LEVEL ATTAINED Instructions were given to the student regarding the professional ethics to be followed in the laboratory sessions. Students were given training on ethics.
Action Taken			
1. Expert sessions on professional ethics.			
2. Class on engineering ethics to be followed by in streams.			
3. Expert lectures.			
PO9	Individual and Team Work		
PO9	0.36	0.37	TARGET LEVEL ATTAINED Lab sessions were conducted as individual / team work.
Action Taken			
1. Conducted team based social service activities.			
2. Expert Lectures.			
3. Team based problem solving in laboratory sessions.			
PO10	Communication		
PO10	0.66	0.67	TARGET LEVEL ATTAINED Students were given training on communication skills.

Action Taken			
1. Expert lecture in communication skills.			
2. Sessions in language lab.			
3. Competitions based on communications as part of cultural activities.			
PO11	Project Management and Finance		
PO11	0.57	0.57	TARGET LEVEL ATTAINED Understanding and demonstrating management principles and applying to own works enable students to get exposed to Project management.
Action Taken			
1. Expert lectures.			
2. Class on engineering ethics to be followed by in streams.			
3. Expert lecture in communication skills.			
PO12	Lifelong Learning		
PO12	0.57	0.64	TARGET LEVEL ATTAINED Recognize the need for, and have preparation and ability to engage in independent and lifelong learning in various engineering streams.
Action Taken			
1. Team based problem solving in laboratory sessions.			
2. Professional Training sessions.			
3. Expert lectures.			

Table-B.8.5.2c

CRITERION 9	Student Support Systems	Total Marks:50
Marks Claimed		50

9.1 STUDENT SUPPORT SYSTEMS (50)

➤ Mentoring System

A new strategy to access and motivate students has been initiated. All faculty and students of all semesters are divided into mentor-mentee. One faculty will be assigned 10 to 15 students. They would look into assigned student's academic progress, discuss with tutor and other faculty about their behavior in classroom and should observe any unusual behavioral patterns and incidents.

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➤ Mentoring at NIT SRINAGAR

- Mentoring of the students is our top priority. Each teacher takes keen interest to mentor students under their charge.
- Student Welfare Cell's members are always available to heed to the problems of the students. Students are always free to approach the teachers for any kind of guidance-personal, professional and so on. Students come with a burden and special endeavors are made to see that they get relieved of the burden.
- The students visit Students Welfare Centre where a lecturer (member of student Welfare) is made available throughout the day. Teachers come to the cell in their free periods. They counsel the students on diverse issues ranging from some personal psychological to social and academic.

A diary shall be maintained for each student where various details like Personal Information, Previous meeting details, Academic Performance, Competitive Examination Details etc are recorded. The mentors meet the students periodically and monitor their performance and their activities. Guidance regarding the lagging issues is provided. If need be, occasionally a meeting with the parents will be conducted.

➤ Professional Guidance

The departments are well equipped with knowledgeable human resources in the form of members of faculty who by keeping themselves updated of developments offer guidance to the prospective professionals in addition to the classroom teaching.

➤ Career Advancement

The Training and Placement cell has been active not only in arranging campus recruitment drives, but also offering awareness and training for the students.

➤ Course Work

Members of faculty handling different courses interact with students in clearing all their Concept-oriented and test based mechanics of the respective courses. The teachers after first formal evaluation guide the students as far as student-specific gray areas are concerned.

➤ **Lab-Specific**

Each of the lab sessions are handled by 2 teachers along with 2 to 3 non teaching staffs, in order to have special care for the students while experiments are being handled. A demonstrative presentation is given by the teacher concerned before every experiment. The Laboratory records are evaluated after the experiment is held. In other words, there is active involvement of the members of faculty in pre-experiment stage, at the time of experiment and after the experiment.

➤ **Efficacy of the System**

- The mentoring system developed by the Institute has been proved to be effective considering different parameters.
- The involvement of students in the academics has increased, like class work attendance, paper presentations, presentation of models in exhibitions, participation in cultural activities etc.

Because the number of students allocated to each of the mentor is limited to maximum of 16, personal interaction on regular basis has been possible.

The Specific Support (or) Services/Facilities Available:

➤ **Support for “Back Loggers”**

Remedial classes have been initiated through a special drive for students with back logs. These classes are engaged by Students of higher semesters with outstanding performance in the given course for the students having backlog in that very particular course.

Slow learners are found out from the analysis of various assessment processes such as class test, continuous assessment test, lab viva session, interaction during the lecture delivery, and in mentoring session etc. These students are asked to discuss with the faculty in person during the extra hours such as Tutorial/Library/seminar hour/ Remedial Classes during evening stay back, in addition to the special classes conducted for those students. Slow learners are also asked to take up the retests for the respective subjects. They are also given special attention by solving the important problems in the form of additional worksheets and assignments.

➤ **Exposures of students to other institution of higher learning / corporate / business house etc.**

The students are exposed to the current trends in the industry by arranging guest lecture from the reputed institution and industries. The students are also encouraged to take up the in plant training in the industry to get the hands on experience about the current technology in the industries. The institute arranges for industrial visits to the students to get first hand information about the industries and their technologies.

➤ **Alumni Connect**

Alumni of the Institute have been involved very actively in the process of Career advancement of the current students. Our Distinguished Alumni have been very proactive and deliver Lectures regarding student requirements of career building. Every month Alumni with varying expertise in industry, academia and successful entrepreneurship achievements are invited to have face to face interaction and deliver lectures related to their specific areas.

➤ **Memorandum of Understanding (MOU's)**

MOU's with IIT Delhi and IIT Jammu have been signed for facilitating project work, Research and even earning of credits during the stay of the student at these institutes of higher learning. Facilitation of placement to be carried out at these campuses has also been agreed on.

For regular internship/training of students in current niche areas, a MOU has been signed with ALTTC Ghaziabad, a BSNL concern which basically meant for imparting training to ITS candidates.

➤ **Skill development (Spoken English, Computer Literacy, etc.)**

The language laboratory helps to improve the communication skills of students. The students are encouraged to give seminars to improve their communication and public speaking skills. Skill development is imparted to the students through Training and placement cell as well as Language department. Many activities like soft skills, communication skills, guidelines to access online materials, multimedia based learning, etc are carried out for the sake of students. This is being upgraded to make it state-of-the art.

Language Laboratory	Space, Number of Students	Software used	Type of Experiments	Quality of Instruments	Guidance
1	300 Sft 30/shift	Internet support	Speaking, Listening, Reading	Good	Yes

Table-B.9.1

➤ **Student's Grievances Redressal**

Grievances should be presented in person and in writing before the Coordinator, HOD or Director. The concerned authority shall make an effort to solve the problem and redress the grievance informally but if he does not succeed in this, a grievance committee shall be formed, the composition of which shall depend on the grievance. The committee shall look in to the grievance objectively and having due regard to the rules and the institutional and academic goals, recommend appropriate action to redress the grievance.

➤ **Women Grievance Committee**

Complaints Cum Redressal Committee for women is headed by Prof. Rohie Naaz Mir, HOD CSE department with additional members. If any of the girl students or lady faculty/staff faces a problem related to sexual harassment, they can report to the above committee. We have not received any such complaint for the past few years.

➤ **Anti-Ragging Committee**

Anti Ragging committee headed by Dean Students Welfare, Wardens and Hostel manager is in place since long. Sign Boards have been put up specifically for this purpose all over the campus with strict warnings of not indulging in any such activity which would be considered as Ragging. Anti ragging information leaflets are distributed to all first year students on their first day in the Institute. Anti ragging measures are taken in the Institute campus, hostels and Institute buses.

➤ **Students Welfare / Counseling Centre**

The Institute has a Student's Welfare Committee, constituted by the Director and headed by Dean Students Welfare. This committee has faculty members from other departments as well. This

committee is entrusted with the task of looking after the welfare of the students by taking appropriate steps with the concurrence of the Director.

Scholarships are doled out to deserving students from economically challenged background through a committee comprising faculty, staff and students representatives and chaired by Dean Students Welfare.

➤ **Continuing Education Cell**

Continuing Education Cell is headed by Prof. Aijaz A. Mir, of ECE department. Its function is to promote continuing education programmes in the institute. The cell is dedicated entirely to the growth and development of technical education, industry, business and social amelioration.

➤ **Industry – Institute Interaction Cell**

The functions of Industry – Institute Interaction Cell of NIT Srinagar is to create adequate facilities of updating knowledge of professional engineers to meet the growing and developmental needs of the industry and to coordinate the research and developmental activities of the two systems. The cell is headed by Prof. Saad Parvez.

➤ **Center for Research and Development/ Consultancy**

Center for Research and Development/ Consultancy is formed at NIT Srinagar with the following functions and is headed by Prof. Aijaz Ahmad of EE Deptt..

- Provide technical assistance to industries and user Organizations/Departments
- Promote research and develop appropriate technology
- Promote exchange programmes between industries and the institution
- Support Short-term courses/Seminars/Workshops for effective dissemination of knowledge
- Establish testing/consultancy centres in various fields of engineering
- Extend the necessary assistance to Staff to attend National/International conferences, Seminars, Workshops etc

Corporate Social Responsibility:

Local Schools have been adopted to bring their students under the direct tutelage of our institute and invite them on occasions so as to instill in them confidence and inspire them with what different branches of engineering mean to the world at large. It gives them an opportunity to visit our labs and to have ample knowledge about engineering as a choice for carrer. Our faculty and students are invited by these schools to have a strong bond of belonging and Big Brother relation.

9.2 Feedback Analysis and Reward / Corrective Measures taken, if any (10)

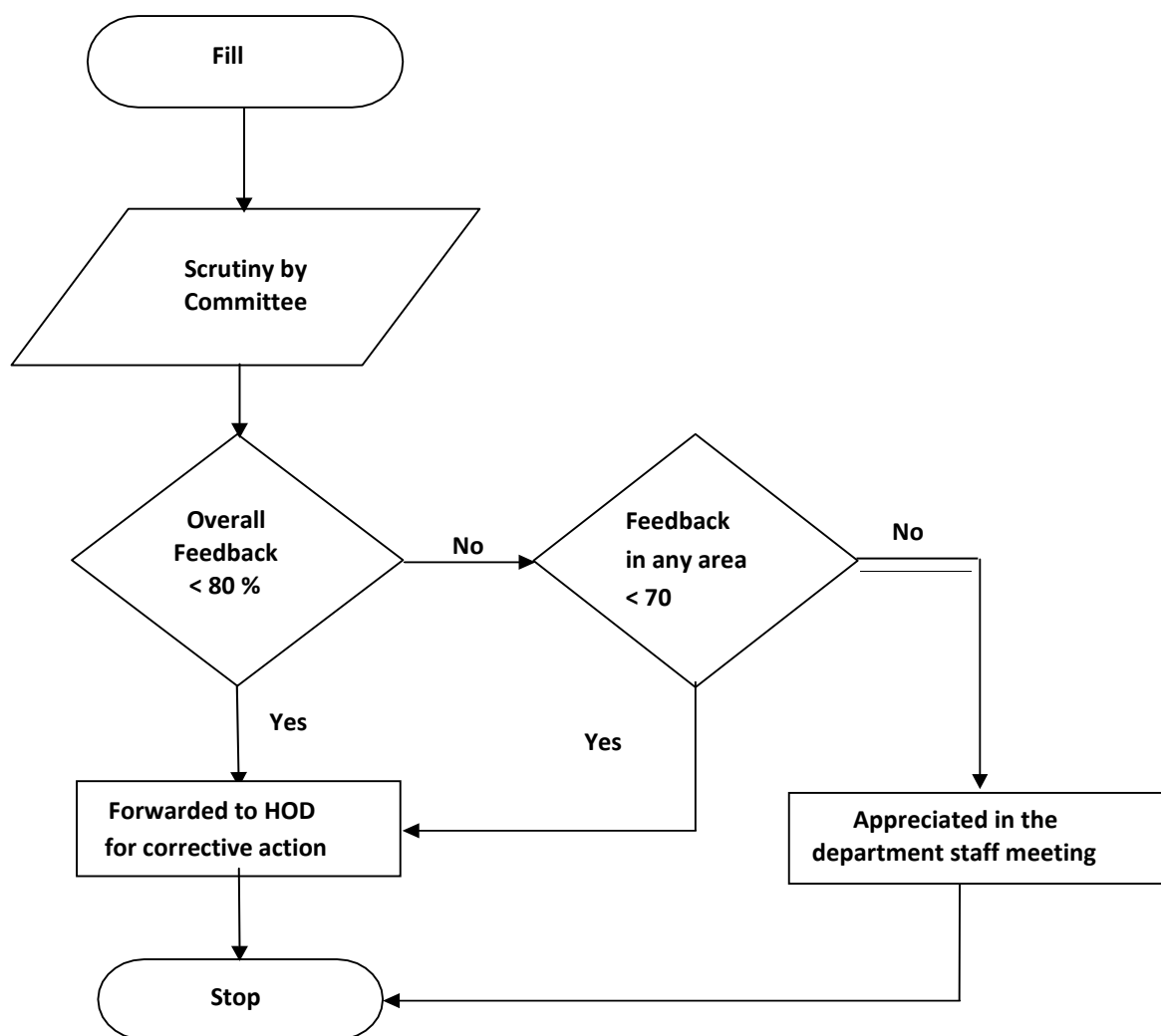
Feedback mechanism is a well organized system in the institute. The system of feedback collection is being automated. For each student in a class a new ID is created, by using that the student can log in to the feedback marking software without giving their names. Once they logged in to the software, the list of faculties taking courses in that class will be displayed. They can enter their feedback according to a questionnaire. The software will analyze the collected feedback and

summary is given to head of department with marks secured. HOD will analyze the feedback of each faculty and will take necessary actions.

An Overview of Feedback Evaluation for Faculty Members

Sl. No.	Item	Response
1	Feedback collected for all courses	YES
2	Specify the feedback collection Process	One regular class hour is designated for the purpose.
3	Who collects the feedback	Faculty members in charge of Student feedback
4	When feedback is collected	Around 12 weeks after semester commences
5	Percentage of students Participating	All students
6	Basis of reward / corrective measures	Faculty members who get a feedback below a pre-defined value are forwarded to higher authorities for corrective actions.

Table-B.9.2

Flowchart for Feedback Analysis Process for Faculty Members**Figure-B.9.2a****Basis of reward / corrective measures, if any:**

Once HOD gets the summary of feedback, HOD analyzes the feedback of each faculty and will take necessary actions. The procedure of corrective action is given in the flow chart

Flowchart for checking effectiveness of corrective action

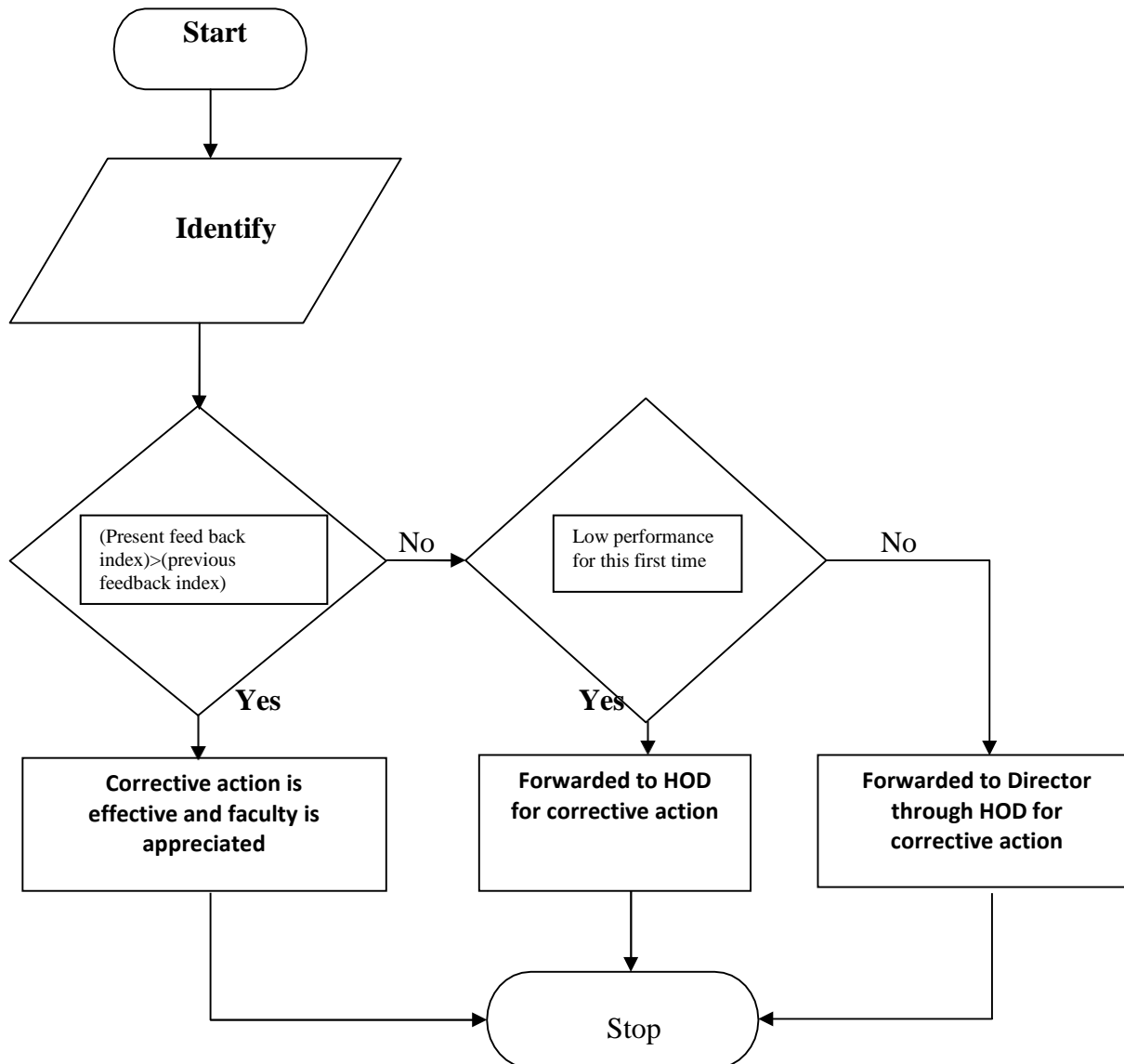


Figure-B.9.2b

Induction programs are conducted for newly joined faculty members and continuing education programme for the experienced faculties. Those teachers who have not obtained good appraisals have a detailed discussion with the HOD on how to improve the teaching. Level of feedback is taken into account while evaluating the staff for promotion.

Also, Class Committee meeting shall be conducted twice in every semester for each class. Committee members includes, Head of the Department, Class Tutor, Two faculty members teaching in the respective class, 2-5 student members from the class. Students are given freedom to raise any kind of issues related to teaching learning process, facilities provided or any other relevant matter.

Feedback analysis and reward /corrective measures taken for Hostels and Messes

The hostel/mess management has taken the following corrective measures:

- i. Conversion of messes from outsource to insource. It has been done to provide hygienic and quality food to the resident students.
- ii. Inclusion of student representatives in Mess Management committees for receiving frequent feedback from the respective mess representatives about the quality of food/services being provided in the messes.
- iii. Security personnel's have been deputed in each block/floor of the hostel to keep 24 x 7 vigil on the students to avoid any untoward incident, ragging etc.
- iv. Engagement of Electricians, Carpenter & Plumber on contractual basis exclusively for hostel maintenance and repairing to redress the student problems without any delay.
- v. Procurement of electrical/carpentry/plumbing/water purifier items by the management directly for speedy redressal of problems.

9.3 Feedback on Facilities (5)

Process of Feedback Evaluation

Institute has initiated taking feedback on facilities from the final year students. A feedback on Library facility, Training & Placement facility, Laboratory facility, general facility etc has taken from students and they are asked to give rating of the same as Excellent, Good, Average. Just like the faculty feedback, facility feedback shall also be automated. By using the feedback, the areas of improvement can be identified.

Feedback Template

Library [tick mark in the relevant cell]

Questions			
1. How often do you visit the Library ?	Regularly	Occasionally	Rarely
2. Are the required number of titles in your subject available in the Library ?	Excellent	Good	Average
3. Are you satisfied with the cataloguing and arrangement of books in the Library ?	Excellent	Good	Average
4. Are you satisfied with the available reading space in the Library?	Excellent	Good	Average
5. Are the Library Staff co-operative and helpful?	Excellent	Good	Average

Table-B.9.3a

Common Computing Center [tick mark in the relevant cell]

6. Are you able to access Internet Centre as and when you require?	Regularly	Occasionally	Rarely
7. Are you making use of educational online resources ?	Regularly	Occasionally	Rarely
8. Are there enough number of nodes available in the Internet Centre?	Excellent	Good	Average
9. Are the net centre staff co-operative and helpful?	Excellent	Good	Average

Table-B.9.3b

Training & Placement Cell [tick mark in the relevant cell]

10. Has the Training & Placement (T & P) Cell provided ample On-campus placement opportunities?	Excellent	Good	Average
11. Has the (T&P) Cell provided sufficient Off - campus placement opportunities?	Excellent	Good	Average
12. Did you ever avail Career counseling and guidance for higher studies from T&P Cell?	Excellent	Good	Average
13. If you are invited to deliver a guest lecture/a special talk/a motivational session for your juniors, will you be interested?	Highly Acceptable	Acceptable	Likely
14. Would you like to join the Department/Institute Alumni Association?	Highly Acceptable	Acceptable	Likely

Table-B.9.3c**Others** [tick mark in the relevant cell]

15. Are the class rooms clean?	Excellent	Good	Average
16. Are the toilets cleaned properly?	Excellent	Good	Average
17. Are you provided with enough drinking water ?	Excellent	Good	Average
18. Are you happy with the food served in the present canteen?	Excellent	Good	Average
19. Are the activities of the student counseling center helpful to you?	Excellent	Good	Average
20. Do you think that your grievances are addressed effectively and efficiently?	Excellent	Good	Average
21. Are you satisfied with the activities of "R&D, NSS, IEEE and other professional bodies" in our Institute?	Excellent	Good	Average
22. Are you able to make use of reprography facility in the Institute?	Excellent	Good	Average
23. Are you satisfied with the prevailing scholarship programme of our Institute?	Excellent	Good	Average

Table-B.9.3d**Feedback On Lab Facilities**

Title of Lab			
What was your batch size?			
Satisfied with your batch size?	Excellent	Good	Average
Experiments of lab classes conducted as per schedule provided?	Excellent	Good	Average
Equipment's provided sufficient?	Excellent	Good	Average
Equipment's provided in working condition?	Excellent	Good	Average

Lab consumables provided of good quality?	Excellent	Good	Average
No. of experiments conducted as per University Norms?	Excellent	Good	Average
No. of experiments conducted over and above University Syllabus?	Excellent	Good	Average
Advanced/design based experiments carried out in the lab?	Excellent	Good	Average
Lab manual provided was complete in covering the syllabus and informative?	Excellent	Good	Average
Lab assistant / technician assisting you?	Excellent	Good	Average
Lab in-charges(faculties) are helpful in completing the experiments?	Excellent	Good	Average
Opportunity provided to complete experiments partially done experiments and for days on which students were absent.	Excellent	Good	Average

Table-B.9.3e

The identified weaker areas, with corrective action plan are submitted to the management and the same can be corrected within one academic year and then the feedback is taken from the next final year students.

Process flowchart for feedback analysis on facilities

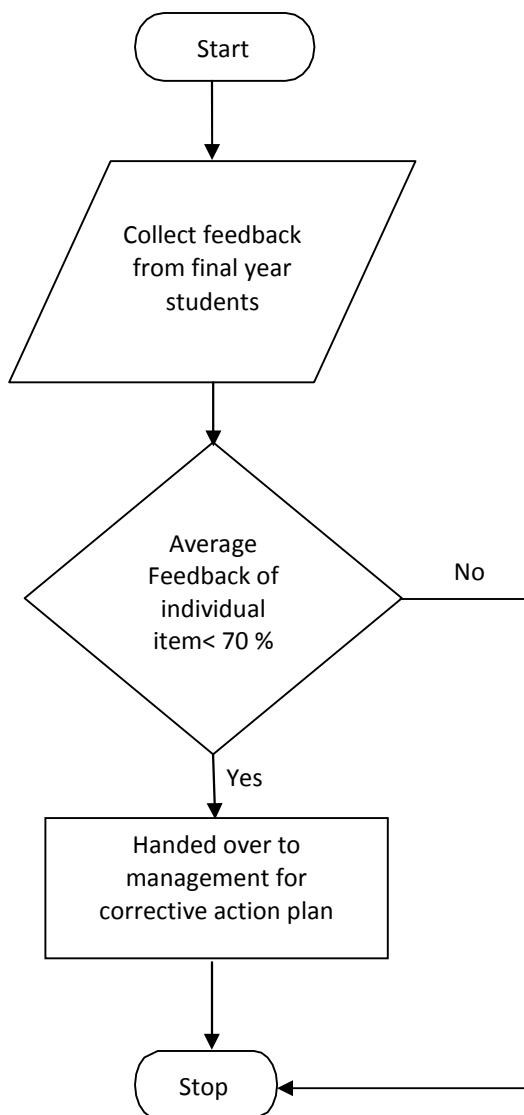


Figure-B.9.3

Information regarding Feedback on Facilities

The Hostel Management is providing the following facilities to the resident students of the Institute. Upgradation of facilities is in process as well as in pipeline.

S. No.	Particulars	Facilities Provided/Upgraded/In Pipeline
01.	Community Services	Students are being facilitated with funds for community services to induce social fabric & communal harmony in them as under: <ol style="list-style-type: none"> i) Erection of tent in the premises of hazratbal shrine on the eve of Eid-e-Milad-un-Nabi (Commemoration of birthday of Prophet Muhammad PBUH) and facilitating the devotees with water/juice or even with tea depending upon the season. ii) Erection of tent in the premises of Chatti Padsha on the eve of Guru Gobind Singh's Birthday, Guru Hargobind Singh's Birthday etc. and facilitating the devotees with kheer, sweets etc. iii) Erection of tent in the premises of Kheer Bhawani on the eve of mela to facilitate the devotees with kheer, sweets etc
02.	Hostel Facilities	
	i) Water Purifiers	Water Purifiers have been installed in sufficient numbers in each block of the hostel to facilitate the student community with purified water supply.
	ii) Furniture	New furniture is been procured i.e. lockers, beds and tables to facilitate the students with requisite furniture to make their stay in the hostel comfortable.
	iii) Wifi/LAN	Each block/wing of the hostel has been connected with wifi/LAN.
	iv) Parks and Lawns	Hostel Management has developed & beautified parks and lawns so that students can have leisure during their off time. Furthermore, umbrellas have been installed in the parks to facilitate the student community.
	v) Badminton Court	Badminton court has been constructed in each hostel of the Institute.
03.	Up gradated facility	
	i) Laundry facility	The Hostel Management has procured commercial washing machines to facilitate the student community with washing facility. The facility will be commenced soon.
	ii) Construction of hostels	The Institute has constructed two prefabricated hostels so that occupation of rooms could be minimized to some extent. The hostels will be allotted to the students soon.
	iii) Modernization of Messes	Each mess of the Institute has been modernized with latest kitchen equipments i.e. rice steamers etc.

04.	In Pipeline	
	i) Static Tent Structures	Erection of static tent structures work is in progress for facilitating the students with Guest Lobby, Reading Room, Library, Food Court etc.
	ii) Water Treatment Plant	Construction of mini water treatment plant in the hostel premises.
	iii) Mopping Scooter/Jet Cleaners etc	Procurement of mopping scooters and latest sanitation equipments to modernize the sanitation services in the Institute as well as in the hostels.
	iv) AC	AC's will be installed in each of the hostel.
05.	Financial Assistance	The Institute is providing financial assistance to the needy students every year so that they can continue their studies.

Table-B.9.3f

CENTRAL FACILITY

Central Workshop

- Workshop is Central Facility of the Institute.
- The primary objective of the establishment of Central Workshop is to conduct the classes of one of the main practical oriented course "**Workshop Practice**" to fulfill the basic requirement of B.Tech course.

Main Objective

Central Workshop caters to various activities of the Institute which includes:

- Engages the classes of practical oriented course of workshop practice in 1st and 2nd semesters for (All) B.Tech courses.
- Provides facility to carry out practical's in various engineering trades to Mechanical and Metallurgical students.
- Plays an important role to design, development and fabrication of project works of the students from various departments of the Institute.
- Project work related activities including fabrication for the M.Tech students and Ph.D Research Scholars of the Institute.

Extension of Workshop Facility to other Technical Institutions in the Region

The following institutions are benefitted:

- College of Engineering and Technology University of Kashmir, Hazratbal Srinagar
- Government Polytechnic for Women, Bemina Srinagar
- North campus, university of Kashmir Baramulla
- I.T.I Srinagar
- Islamic University Awantipora Kashmir
- Government Engineering College of Technology, Safapora Kashmir

Technical Aid and Fabrication to Industries

Facilitating the technical aid to the **Small Scale Industries of Kashmir** Province in the shape of fabrication of various types of Tools Dies and Jigs and Fixture and Gears etc.

Infrastructure

Well established Technical Infrastructure is available which includes:

(i) Machine (ii) Equipment (iii) Tools (iv) Technical Manpower

Workshop Practice provides facilities to be students for "hands on" various practical oriented tasks through formal classes /project works. The students are introduces to process, tools and materials for accomplishing various tasks which culminate in final products.

The students are trained to acquire basic knowledge and skills about engineering materials, manufacturing practices, equipment, tools and safety precautions to be observed during manufacturing of different products. The students carry out manual operations using mostly hand tools and elementary machines in the carpentry and pattern making shop, bench work and fitting shop, welding shop, sheet metal shop, black smithy and forging shop, machine shop, foundry and casting shop etc..

The common shops and major facilities in the Central Workshop have been divided into various trades as given below:-

- i. Machine Shop
- ii. Sheet Metal Shop
- iii. Bench Work and Fitting Shop
- iv. Welding Shop
- v. Foundry and Casting Shop
- vi. Black Smithy and Forging Shop
- vii. Carpentry and Pattern making Shop

Staff associated with Central Workshop

Office of the Central Workshop

Sl. No.	Workshop office Staff
1.	Er. Syed Irshad Ahmad Qadri, Officer In-charge/Superintendent
2.	Mr. Ghulam Mohammad (Tech Asst)
3.	Mr. Muneer Ahmad (Tech)
4.	Mr. Manzoor Ahmad (Works Asst)

Sl. No.	Workshop Section	Working Equipment/Machine	Employees (Permanent)	Employees Contractual
1	Machinist Trade	Kirloskar Lathe 8 No's HMT Lathe 4 No's Slotting Machine 1 No's Horizontal Milling 1 No's Vertical Milling 1 No's Shaper 1 No's Grinding Machine 1 No's Tool & Cutter Grinding M/C 1 No's Surface Grinder 1 No's Kirloskar Lathe with tool Dynamometer 1 No's	Firdous Ahmad Wani (Tech. Asst) Javeed Ahmad Ahangar(Tech.) Hilal Ahmad Dar(Tech.) Altaf Ahmad Bhat(Tech.)	Mistry Mohammad Nadeem (Technical Assistant)
2	Sheet Metal Trade	Hand drill 1 No's Sheet bending machine 1 No's Hand shearing machine 1 No's Table shear cutting machine 1 No's Power operated shearing M/C 1 No's Grinding machine 1 No's	Muhammad Shabaan(Tech.)	Ms. Afnan Asad (Technical Assistant). Abdul Aziz (Helper).
3	Fitting Trade	Profile Projector 1 No's Drilling Machine 1 No's Arbor Press machine 1 No's	Gh. Qadir(Tech. Asst) Mushtaq Ahmad Shah(Tech.) Mohammad Ramzan(Tech.)	Dawood Ibrahim Ali (Technical Asstt)
4	Smithy Trade	Single Beak Anvil 2 No's Open Herth Furnace 4 No's Lever Shear 1 No's	Mohd. Ismail Kumar(Tech. Asst) Bashir AhmadSheikh(Tech.)	Sumeer Kaul (Technical Assistant)
5	Foundry Trade	None.	Abdul MajeedAhangar (Tech. Asst) Ghulam Rasool Telli (Tech.)	Zahid Shafi (Technical Asstt)
6	Welding Trade	MMA (Arc Welding) Machine 1 No's	Zahoor Ahmad (Tech.) Mohammad ShafiChikla (Tech.)	Mohd. Yousuf (Technical Assistant)

7	Carpentry	Band Saw	1 No's	Showkat	MuzafarShah (Technical Assistant)
		Thickness Planner	1 No's	Ahmad(Tech.)	
		Tenon Machine	1 No's		
		Grinder	1 No's	Noor	
		Thickness Planner	1 No's	Mohammad(Tech.) Mohd. Yousuf(Tech.)	

Transport/Automobile Facilities

The transport wing of the Central Workshop performs the essential service to the Institute. Presently the institute is having the vehicle strength of nine numbers to carry out the various academic activities of students, faculty and other official works of the institute besides to provide the facility of ambulance services round the clock (24 x 7) during the emergency to the students and staff.

The list of the vehicles performing the various activities of the institute is as under:-

S. No	Name of the Vehicle with make	No of Vehicles	Drivers and cleaners in place	
			Permanent	Contractual
01	32 seater Bus (TATA)	02 Nos	Mr B.Bhadhur (Tech. Asst)	Mr Showkat Ahmad (Driver)
02	Ambulance (Maruati)	02 Nos		
03	Staff Car (Ambassador)	01 No		
04	Mini Loader (Truck)	01 No	Mr Khazir Mohammad (Tech Asst)	Mr Reyaz Ahmad (Driver) Mr Shabir Ahmad (Driver) Mr Sheraz Ahmad (Driver) Mr Mohammad Yaseen (Conductor)
05	Fortuner Car (Toyota)	01 No		
06	Innova Car (Toyota)	01 No		
07	Scorpio Car (Mahindra)	01 No		
			Mr Mohd Ayoub (Driver)	

MEDICAL FACILITIES

NIT Srinagar has its own dedicated Health centre & multifarious medical needs of the campus population consisting of students, staff members, faculty and members of their families are met by institute hospital. It's equipped with all the basic medical facilities and is functional 24x7 with referral and ambulance services. Presently health centre is serving the strength of more than 4000 students plus faculty and staff including their wards. It offers free of cost medical facilities. The hospital is headed by the Head Medical Officer with a team of other specialists, paramedical and supporting staff. Medical Unit of the



Medical Unit

Facilities

List of facilities available at NIT Srinagar Health Centre :

- **OPD (Allopathy)**

Patients are registered at the reception and are seen on first come, first serve basis, however out of turn consultation may be provided in case of emergency and senior citizens. Patients have the right to consult any doctor. In OPD, clinical consultation is provided to patients which include history taking, clinical examination, diagnosis and providing prescriptions to patients besides advising laboratory tests in some cases. Medication is provided free of cost to the patients. Sub waiting areas are available in front of individual consultation rooms and laboratory. Public utilities like drinking water and toilet is available. Wheel chairs, trolleys and attendants are there to help very sick patients.



Office Chamber of Medical Officer

Dental Facility

An experienced dental surgeon along with dental assistant provides procedures like dental extraction, scaling/cleaning, RCT, fillings, local curettage. Dental facility is functional from April 2018.



Dental Facility

COUNSELING SERVICES

Full time psychological counselor who remains on call 24*7 is available for providing counseling services to the students, staff and faculty members of the institute. Institute counselor pays regular visits to different hostels for conducting awareness programs like stress management, mental health awareness, positive psychology, psychology of happiness & different breathing exercises.



Ward/IPD Facility

Ward facilities for observation and management of medical problems like typhoid, acute gastroenteritis, COPD, bronchial asthma, viral fever, pneumonias etc are available. There is one ward with five beds & one isolation room for patients of communicable diseases who require complete isolation.



Ward

Physiotherapy Services

Full time well experienced physiotherapist is available 24*7 to provide range of physiotherapy services and to assist the patients to recover from wide range of musculoskeletal painful disorders, sports injuries, post operative traumas, neurological disorders and all orthopedic disorders. This facility is functional since February 2018. Following facilities will be available shortly after the establishment of physiotherapy unit; TENS, Laser therapy traction unit, Ultrasound, SWD, Muscle stimulation, Interferential therapy, Matrix Therapy Etc.



Laboratory Services

Trained laboratory staff is providing best services & the laboratory is functional 24*7. Painless blood withdrawal & sample collection under all aseptic conditions is done in the laboratory.

Following facilities are available:

- CBC
 - Lipid profile
 - KFT
 - LFT
 - Uric Acid
 - Blood sugar fasting and PP
 - HbA1C
 - ESR
 - CRP, CCP, RF
 - Serum LH, FSH, Prolactin, total testosterone
 - Thyroid Function Tests
 - Vitamin D levels
 - HBSAG
 - HIV
 - HCV
 - Vidal for typhoid
 - Urine Routine examination
- Sample collection time for laboratory is 7am to 10 am while emergency tests like Blood sugar, platelet count, HB and blood grouping is done in emergent cases throughout OPD hours.



X-Ray & ECG Services

X-Ray and ECG services are available on all working days during OPD hours & in case of emergency.

Pharmacy

Free reliable quality medicines are available to beneficiaries on doctor's prescription during OPD and night hours by pharmacists.



Minor OT

Provides services for minor surgical procedures like dressing of lacerated wounds, suturing of minor lacerations and re-suturing, excision of corns and cysts under local anesthesia.



Ambulance Services

24×7 patient referral and transport services are available during OPD hours as well as emergencies to the nearest super specialty hospitals.

Timings

- Registration/OPD timings- On working days 8:45 a.m to 05:15 pm.
- Laboratory series – 24×7
- Pharmacy – 24×7
- X-ray & ECG services - 8:45 am to 05:15 pm and during emergency.
- In case of emergency Medical officer, physiotherapist, counselor are available on call 24×7.

People /Staff

Sl.No.	Name of the Official	Designation	Phone No.
01.	Dr Mehvish Khan	Head (Hospital Services)	7006880314
02.	Dr Mehnaz Rajab	Dental Surgeon	7006563082
03.	Dr Younis	Physiotherapist	9149729529
04.	Mr Mumtaz	Sr. Lab Technician	9906046953
05.	Mr Fairoz Malla	Psy Counselor	9596195546
06.	Mr Lateef	Store Keeper	9149922458
07.	Mr Fayaz Ali	Pharmacist	9796103421
08.	Ms Gincy Paul	Staff Nurse	7780897925
09.	Mr Irfan Sidiqi	X-Ray & ECG Technician	7006428525
10.	Mr Rouf	Pharmacist	7889399568
11.	Mr Waseem Rashid	Lab Assistant	7780923252
12.	Mr Khalid	Pharmacist	9596596880

13.	Mr Nisar	Lab Technician	7006349408
14.	Ms Nazima	Dental Assistant	7006244208
15.	Mr GM Teli	Orderly	8715913281
16.	Mr Bashir Ahmad	Orderly	9796968788
17.	Mr Mushtaq Ahamd	Orderly	9149516758
18.	Mr Showkat	Ambulance Driver	8491967214
19.	Mr Shabir	Ambulance Driver	9622827668

Special Camps And Programs Conducted:-

- Influenza vaccination (November 2017)
- Blood donation camp (June 2018)
- Mental health Workshop (May 2018)
- Disaster Management Programe (July 2018)
- Bone Mineral Density Camp (June 2018)
- Hemoglobin evaluation drive (June2018).

9.4 Self-Learning (5)

The Institute developed an academic system which presents a curriculum which is having flexibility without prejudice to the fundamentals of any subject which are required.

Facilities given by institution for self-learning

- The curriculum offers courses major project where the topics are self selected or based on guide suggestion. The component of self learning is evaluated in these courses.
- Every student has to submit two home assignments in every course which has been evaluated for 10 marks. Some of these tasks are beyond syllabus to encourage outstanding students to develop their self learning capabilities.
- Some of the tasks in the lab courses are challenge based which has to be solved by the students on their own enhancing their skills.
- The program planned weekly time table and facilities in such a way that the students have space and time to explore and implement their ideas.
- Common Computing Center with well equipped and internet facility opened 24X7 for students.
- Digital library is provided in central library where students can access all kinds of E-journals.
- Industrial visits arranged by the Departments.
- Language lab facilities provided – This enables students to prepare to take-up the TOEFL, GRE examinations.
- The Institute encourages the students to attend Industrial training during semester breaks

Modes and Modules for Self Learning and Learning Contents Beyond Syllabus:

Seminars

Seminars are taken on the recent research topics. Faculties of various departments can attend these seminars in their respective areas. This enable the faculty to get familiar with the recent researches carried out in various fields.

Department Laboratories

The Institute provides well equipped laboratories for the smooth functioning of each department and the details of the same are as follows:

Department	Total No. of Labs	Name of the laboratory	
Chemical	12	1	Fluid Mechanics and Mechanical Operations Laboratory
		2	Mass Transfer Laboratory
		3	Process Dynamics & Control Laboratory
		4	Thermodynamics and Reaction Engineering Laboratory
		5	Heat Transfer Laboratory
		6	Energy Engineering Laboratory
		7	Biochemical Engineering Laboratory
		8	Environment Engineering Laboratory
		9	Membrane Science and Technology Laboratory
		10	Multiphase System Laboratory
		11	Project Lab
CE	12	1	Fluid mechanics Lab
		2	SOM Lab
		3	Concrete Technology Lab
		4	Pavement Engg. Laboratory
		5	Enviro-nmental engineering lab
		6	Structural Analysis Lab
		7	CAD Lab
		8	Traffic Engg. Lab
		9	Survey Lab

		10	Geotechnical Engg. Lab
		11	Engg. Geology lab
		12	Project Lab
ECE	10	1	Communication Systems Laboratory
		2	Microprocessor Laboratory
		3	Digital Electronics Laboratory
		4	Analog Electronics Laboratory
		5	Microwave Engg. Laboratory
		6	Optical Fiber Communication
		7	Electronic Design & Automation Tools -II
		8	VLSI Lab
		9	Network Security Lab
		10	Computational Lab
		11	Project Lab
ME	12	1	Steam lab
		2	Production Technology Lab
		3	Fluid Mechanics Lab
		4	Internal Combustion Engines Lab
		5	Tribology Lab
		6	Heat Transfer Lab
		7	Mechatronics Lab
		8	Dynamics Lab
		9	CAD Lab
		10	Industrial Engineering Lab
		11	Advanced Strength of Material Lab
		12	Project Lab
EE	12	1	Basic Electrical Engineering Lab
		2	Control Systems Lab
		3	Electrical Measurement Lab
		4	Power Systems Lab
		5	Power Electronics Lab
		6	Electrical Machines Lab
		7	Microprocessor and DSP Lab

		8	Computation Lab
		9	High Voltage Engineering Lab
		10	Virtual Instrumentation Lab
		11	Energy Systems Lab – (For Research Scholars)
		12	Project Lab

Table-B.9.4a**Library Facility**

The Central Library of National Institute of Technology was established in the year 2001. It is housed in an area of 16400 Sq. ft. spread over two floors and caters to the information needs of the faculty, staff and students. It is fully automated with a rich collection of Books, National and International Journals, Technical and other Magazines, CD ROMs on Engineering, other widely appreciated editions on diverse subjects like Literature, Management, Religion etc. so that the students can evolve into excellent professionals and good cultured human beings. The collection comprises 36186 printed documents such as books, project reports, seminar reports and back volumes of journals and the non-book materials like CD ROMs. This Library follows open access system, Bar code based circulation process and OPAC Literature Search.

The central library currently subscribes to around 106 (128- including MBA) scholarly journals in engineering, science and humanities. This library provides on line access to a large number of full text journal databases from various publishers. These e-journals are accessible on intranet to campus users only. Membership of the library is open to Students, Teachers and Non Teaching Staff of this Institute. Library membership is free to all faculty, staff and students. Documents are classified according to Dewey Decimal Classification Scheme and catalogued according to Anglo American Cataloguing rules II with local modifications. Dictionary catalogue in card form is maintained for authors only.

The NIT Srinagar Central Library has an excellent collection of valuable Books, Journals, Technical magazines, News Papers and no-book materials in Engineering and Technology, Science, Humanities and Management. It maintains separate collections of reference books, general books and Engineering and Technology books, bound volumes of journals, reports, CD ROMs.

Central Library



Figure-B.9.4a

a) Books

Details of books in the Central library are as shown below:

SECTION	DEPARTMENT	NO. OF VOLUMES	OF	NO. OF TITLES
CENTRAL LIBRARY	Civil	2300		552
	Mechanical	3943		1202
	Chemical	1762		221
	Electrical	4203		1052
	Electronics	7037		920
	Computer Science	7207		1384
	Information Technology	3993		928
	Science	1813		461
	General	1335		1025
	Management	559		164
	MBA	5572		2678
TOTAL		39724		10587

Table-B.9.4b

b) Digital Library

The reading area in the library has been WI-Fi enabled to provide wireless access to the Internet. Users are welcome to use their laptops in the library. 60 PC head phones are meant for users to access databases, e-books, e-journals and other e-resources. One printer is for taking printouts from the e-resources.

c) E-Resources

The library provides IP enabled access to a large number of full texts on line journal databases from the various publishers.

1. IEEE (ASPP)
2. ASME
3. ASCE
4. Springer
5. DELNET (Developing Library Network)
6. National Digital Library

And also provides free online journals relating to engineering and other subjects through directory of open access journals (DOAJ).

d) Journals

The Library receives 106 Printed Journals, Technical Magazines, News Papers and the library provides IP enabled access to a large number of full text on line journal databases from the various publishers.

The details of International and National Journals, Periodicals & Dailies for the Institute are as follows:

Department	Journal Type	name of International/ National Journals
CE	National/ International	1. Indian Concrete Journal
		2. Journal of Structural Engineering
		3. Journal of the Institution of Engineers Series A (Civil, Architectural, Environmental & Agricultural Engineering)
		4. International Journal of Sustainable Civil Engineering
		5. International Journal of Geotechnics and Environment
		6. Journal of Urban Planning and Development
		7. Journal of Environmental Science Research International
		8. Journal of Flood Engineering

		9. ICI Journal
		10. Indian Journal of Microbiology
		11. Indian Geotechnical Journal
		12. International journal of civil Engineering
		13. ACI Structural Journal
		14. ACI Materials Journal
		15. Water and Energy International
CSE	National/ International	1. International Journal of Computer and Internet Security
		2. International Journal of Multimedia, Computer Vision and Machine Learning
		3. International Journal of Neural Networks and Applications
		4. International Journal of Real-Time Systems
		5. International Journal of Computer Science and Information Engineering
		6. International Journal of Data Warehousing
		7. Journal of Digital Information Management (+on line)
		8. International Journal of Computational intelligence Research and Application
		9. Journal of Intellectual Property Rights

		10. International Journal of Computing and Application
		11. Journal of Advanced Research in Computer Engineering
		12. International Journal Of Artificial Intelligence And Computational Research (IJICR)
		13. International Journal Of Bioinformatics And Soft Computing (IJBSC)
		14. International Journal Of Computer Science And Communication
		15. International Journal Of Computer Mathematical Sciences And Applications
		16 International Journal Of Grid Computing And Multi Agent Systems (GCMAS)
		17. Journal of Cybernetics and Systems
		18. International Journal of Computer Engineering and Software Technology
		19. International Journal of Network Security & Research
		20. International Journal of Wireless Sensors, Networks and Applications
		1. Indian Journal of Electronic and Electrical Engineering
		2. Advances in Wireless and Mobile Communication
		3. Journal of Microwaves, Science and Technology
		4. Journal of Wavelet Theory and Applications

ECE	National/ International	5. Advances in Electronic and Electrical Engineering
		6. International Journal of Electronics
		7. Indian Journal of Electronics, Circuits and Systems
		8. International Journal of Mobile Communication and Networking
		9. Indian Journal of Wireless Networks and Communication
		10. SADHANA: Academy Proceedings Engineering Science
		11. International Electronics Engineering
		12. International Journal of Material Research, Electronics And Electrical Systems
		13. International Journal Of Power Engineering (IJPE)
		14. International Journal of Analog circuits, VLSI and Bioelectronics
		15. International Journal of Embedded Software and open Source Systems
		16. International Journal Of Electronics, Computing And Engineering Education
		17. International Journal of Advances in VLSI Design
		18. International Journal of Wireless Networks and Communication
		19. International Journal of Electronics and communication engineering

		20. International Journal of Wireless Communication and Simulation
ME	National/ International	1. Journal of Scientific and Industrial Research
		2. Indian Journal of Engineering and Materials Science
		3. Journal of the Institution of Engineers series C (Mechanical, Aerospace, Production, Marine Engineering)
		4. International Journal Of Advances In Thermal Sciences And Engineering
		5. International Journal Of Advances In Mechanical Engineering
		6. International Journal Of Fluid Mechanics
		7. International Journal Of Manufacturing Technology And Industrial Engineering
		8. International Journal Of Material Science And Engineering
		9. International Journal Of Mechanical Engineering
		10. International Journal of Nanoscience, Nano engineering And Nano Technology
		11. International Journal Of Aerospace And Electronics Systems
		12. International Journal of Machine Intelligence & Applications
		13. International Journal of Manufacturing Science & Technology
		14. International Journal of Nanomaterial & Technology
		15. International Journal of Production & Quality Engineering

		16. International Journal of Production Technology & Management Research
		17. International Journal of Advances in Mechatronics and Robotics
		18. International Journal of Advanced Mechanical Engineering
		19. International Journal of Advances in Machining and Forming Operations
		20. International Journal of Advanced Manufacturing System
IT	National/ International	1. International Journal of System Simulation
		2. International Journal of Computer, Information Technology & Engineering
		3. Journal of Non Linear Analysis & Applied Mathematics
		4. International Journal of computer Science and system Analysis
		5. International Journal of Advance in Information Technology.
		6. International Journal of Intelligent Information Processing.
		7. Journal of High Performance Communication Systems and Networking.
		1. Journal of Image Processing & Applications
		9. International Journal of Neural Systems Theory and Applications
		1. Indian Journal of Power and River Valley Development
		2. The Journal of CPRI

EEE	National/ International	3. IEEMA Journal		
		4. Journal of the Institution of Engineers series B (Electrical, Electronics, & Telecommunication & Computer Engineering)		
		5. Indian Journal of Electrical Engineering & Computer Engineering		
		6. Indian Journal of Systems Engineering & Electronics		
		7. Indian Journal of Advances in Electrical Engineering		
		8. Indian Journal of Electrical Engineering & Modern Technology		
		9. Journal of Energy Storage & Conversion		
		10. International Journal of Electronic and Electrical Engineering		
		11. International Journal of Electrical Engineering and Embedded Systems		
		12. International Journal Of Power System Optimization		
		13. International Journal Of Control Theory And Applications (IJCTA)		
		14. International Journal of Power System and Power Electronics Engineering		
		15. International Journal of Industrial Electronics and Control		
		Chemical	National/ International	1. Journal of Membrane Science
				2. Desalination
3. Applied Clay Science				
4. Journal of the European Ceramic Society				
5. Ceramics International				
6. Journal of Food Engineering				
7. International Journal of Hydrogen Energy				
8. Solid State Ionics				
9. Filtration + Separation				

10.	Applied Surface Science
11.	Separation and Purification Technology
12.	Journal of Catalysis
13.	Chemical Engineering Research and Design
14.	The Chemical Engineering Journal
15.	Heliyon
16.	Biomass and Bioenergy
17.	The Chemical Engineering Journal and the Biochemical Engineering Journal
18.	Chinese Journal of Catalysis
19.	International Journal of Heat and Fluid Flow
20.	International Journal of Heat and Mass Transfer
21.	International Journal of Multiphase Flow
22.	Journal of Bioscience and Bioengineering
23.	Journal of Chemical Health and Safe
24.	Journal of the Chinese Institute of Chemical Engineers
25.	Journal of Environmental Chemical Engineering
26.	Journal of Hazardous Materials
27.	Journal of Loss Prevention in the Process Industries
28.	Journal of Safety Research
29.	Journal of the Taiwan Institute of Chemical Engineers
30.	South African Journal of Chemical Engineering
31.	Journal of Water Process Engineering
32.	Journal of Saudi Chemical Society
33.	The Journal of Supercritical Fluids
34.	Journal of Process Control
35.	Journal of Non-Newtonian Fluid Mechanics
36.	Journal of Biotechnology
37.	Chinese Journal of Chemical Engineering
38.	Applied Thermal Engineering
39.	Gas Separation & Purification

Table-B.9.4c

Web OPAC (Online Public Access Catalogue).

The catalogue of Books/CDs/ journals etc. is available online and LAN. Visiting our URL one can access the catalogue sitting at home through internet. The features of web OPAC are:

- Search facility :By specifying author, Title, subject, year of publication or any other relevant field.
- Status of the book: Whether the book is available or issued.
- Number of copies available in library.

- Due dates for borrowed books.

NPTEL

The National Programme on Technology Enhanced Learning (NPTEL), a project funded by MHRD, provides e-learning through online web and video courses in engineering, Sciences, Technology, Management and Humanities. This is a joint initiative by seven IITs and IISc Bangalore. Other selected premier institutions also act as Associate Partner Institutions.

Industrial Visits

All the departments of the institution provide facilities for industrial visit. The students identify reputed industries from their discipline and are approved by the Director through the head of the department. The prior permission is obtained from the industry to visit it. The students are accompanied by minimum of two faculty members. During the curriculum two one day visits and a 3 to 5 days visit are organized.

9.5 Career Guidance, Training, Placement (10)

The objective of the placement cell is to mould the students to cope with the changing demands of the corporate world and place them in reputed companies based on the expected job profiles of each student

Placement Activities

The Placement and Training cell monitors the employment opportunities, cater to enhance employability of students and arrange on and off campus interviews. Our Campus recruitment program starts right from the penultimate semester. It's a policy of the Placement Cell not to patronize companies bend on doing Education & Training activities to attract the students in the name of recruitment against payment.

The placement cell does not encourage the students, those who are placed through campus selection in a company to attend the further campus interviews so as to provide a chance for other students to get placed. The students aspiring for higher studies are encouraged to undergo GATE/CAT exams.

Functioning of Placement Cell

National Institute of Technology, Srinagar (NIT Srinagar) lays emphasis on the placement of the students by training and preparing the students to face the real life situation after graduation. An exclusive Placement & Training cell under the guidance of an eminent professor collects the data of the graduating students and maintains a comprehensive database for ready reference.

The Institute provides an environment for comprehensive and harmonious development of the personality. We have regular communicative English Program incorporated in the curriculum. Further, resource persons and professionals from the field of communication and interpersonal skills are invited to equip our students with necessary soft skills required to face the interviews in today's competitive world. Such training exposure enhances the students' employability. Goal setting Time Management and Prioritization are the Key points that are implanted in the Young minds.

Institute also provide need-based programs on softwares relevant to industry such as VLSI, Embedded Technology, Auto/Electrical CAD, Pro/E, JAVA, J2 EE, just to mention a few.

Placement Details

Academic Year	Branch	Batch Size	Placement	Higher Studies	Placement Percentage
Current Academic Year (2017-18)	CS	59	41	-	69.49
	EC	73	32	-	43.83
	ME	76	27	-	35.52
	CIVIL	118	31	-	26.27
	IT	56	38	-	67.85
	CHEM	64	7	-	1.09
	METTA	65	14	-	21.53
	EEE	73	27	-	36.98
ACADEMIC YEAR (2016-17)	CS	56	22	6	39.28
	ECE	69	42	8	60.86
	ME	71	42	13	59.15
	CIVIL	101	4	2	3.9
	IT	46	22	0	47.82
	METTA	54	9	-	1.66
	CHEM	51	5	-	0.9
	EEE	60	22	4	36.66
CAYm1 (2015-16)	Avg. Placement 4.95 lpa				

Table-B.9.5a

List of Companies visited the Campus

Sl.No.	Academic Year (2017-18)	Sl.No.	Academic Year (2016-17)	Sl.No.	Academic Year (2015-16)
	Name of Company		Name of Company		Name of Company
1	Grey B	1	Vedanta	1	Alstom Transport
2	Tek Systems	2	Bharat Aluminium Company	2	BCloud
3	Envestnet Yodlee	3	Grey-B	3	FCS Teksystem
4	Wipro	4	Afcons Infrastructure	4	Grey B
5	Johnson Controls	5	Career Point	5	Infogain
6	Virtusa	6	Avanti Private Limited	6	Infosys
7	Persistent Systems	7	Raspitech	7	Intellect Design Arena
8	IBM	8	Allen	8	Maruti Suzuki
9	L&T Infotech	9	Sagacious Research	9	MU Sigma
10	Adverb	10	IOCL	10	SKF Bearings
11	Resonance	11	Accenture	11	TCS
12	Vedanta	12	Infosys	12	Tata Motors

13	Tata Motors	13	Capgemini	13	Valforma
14	Cummins	14	Intellect Design	14	Yodlee
15	Reliance JIO	15	Sapient	15	Samsung R&D
16	L&T Construction	16	Sprinklr	16	Sterlite
17	IOCL	17	Maruti Suzuki	17	SAP Labs
18	Infosys	18	HPCL	18	Blue Star
19	Blogvault	19	Tata Motors	19	Sagacious Research
20	Adobe	20	Ashoka Leyland	20	Aakash Institute
21	Sheroes	21	Gravita India	21	DESL
22	Nucleus Software	22	SKF Bearings	22	ABB
23	LG soft	23	Shaljon Technologies	23	Fiat Chrysler Automobiles
24	Rankwatch	24	Intellect Design Arena Pvt Ltd	24	Pompeii Connect
25	Samsung R&D	25	CDK Global	25	Power Grid Corp.
26	ZS Associates	26	TEK Systems		
27	Tata Projects	27	Indian Seamless Metal Tubes		
28	Tata Power	28	Jindal Steel		
29	KPIT	29	Gravita		
30	JCB	30	PGCIL		
31	OIL India				
32	Sagacious Research				
33	Afcon Infrastructure				
34	KEC				
35	GAIL				
36	HPCL				
37	Idea Board				

Table-B.9.5b

Activities from Student Welfare Cell for Career Guidance and Counseling

Career Guidance and Counseling is a comprehensive, developmental program designed to assist students in making and implementing informed educational and occupational choices. A career guidance and counseling program develops an individual's competencies in self-knowledge, educational and occupational exploration, and career planning.

Objectives

- To create awareness among the students for their future profession.
- To provide guidance to the students on various options available in the courses of their study
- To provide information to the students on the scope and relevance of any area irrespective of their field of interest.
- To provide guidance to develop positive attitude and behavior in order to meet challenges of life to make it healthier.

Resource persons from different fields deliver talks about career options to students and teachers and staff of the Institute through guidance and career counseling seminars and workshops.

Activities of student Welfare Cell include Career Guidance and Counseling. The faculty also participates in personal counseling:

- To help students to chalk out academic roadmaps for themselves.
- To enable students to integrate themselves with the milieu.
- To acquaint them with various career options through seminars.
- To address problems related to stress, anxiety, examination phobia, peer pressure and adjustment to changed environment.
- To help students, Periodic reports are shared with parents whenever necessary. Aptitude tests have been carried out to see the inclination of the students. Students were made to undergo this test and they had much to avail themselves of it.

Effective services for career guidance including counseling for higher studies

Training Details for Students

Sl. No.	Course/Activity	Status of The Course	Source of the Resources
1	Technical English & Communication skills	Curricular	In house
2	Professional Ethics	Curricular	In house
3	Aptitude	Co-academic	Both internal and external
4	Campus Recruitment Training	Co-academic	Both internal and external
5	Workshops	Co-academic	External
6	Event specific programmes like GATE coaching	Co-academic	In house

Table-B.9.5d

Provisions for Improving Placements

- **Offering more elective subjects** in order to offer a wider perspective for the students to choose from. On other hand, the students would get an opportunity to have exposure to the emerging technologies.
- Some of the students may even come to a clear understanding that such sub- areas exist in their area of activity such they would visualize their career in those areas.
- **Projects** are introduced in order encourage positive compartmentalization of learning and to offer simulated industrial operations.
- In addition to the above, teachers offer counseling individually or in small groups.
- Separate Placement & Training Cell is maintained.

Coordinators from various streams are appointed to assist and supervise relations with various industries.

Industrial Training

The fundamental objective of Industrial Training is to prepare students for future employment in their chosen engineering discipline. Industrial Training enhances the academic material studied at

University by allowing students to practice what they have learned and to develop key professional attributes. Industrial training should provide an opportunity for students to:

- Experience the discipline of working in a professional engineering organization
- Develop understanding of the functioning and organization of a business
- Interact with other professional and non-professional groups
- Apply engineering methods such as design and problem solving
- Develop technical, interpersonal and communication skills, both oral and written industrial training also gives employers an opportunity to assess future employees.

A demonstrated commitment and ability to take responsibility, make sound decisions, and apply technical skills will be highly regarded. Industrial training gives students an opportunity to evaluate future employers as well as enabling informed decisions about the discipline and career paths to follow.

Training & Placement Officer

Prof. A.A. Mir

Professor I/C

Training & Placement Department

NIT Srinagar

Mobile: 9419091127

Email-id: aamir@nitsri.ac.in;

placements@nitsri.ac.in

Infrastructure and Facilities Available in the Placement Cell:

- Number of interview rooms: 2
- Number of GD rooms: 1
- Number of chambers for HR personnel: 2
- Number of guest rooms for HR personnel: 6

Members of Placement Cell

- Full-time Officers: 1 (1 TPO)
- Full-time Trainers: 2 (Soft skills & Personality Development)
- Student Volunteers attached to placement cell: 32

9.6 Entrepreneurship Cell (5)

Innovation and Entrepreneurship Development Cell

An Entrepreneurship Cell is headed by Prof. Saad Parvez. Its duty is to "develop institutional mechanism to create entrepreneurial culture in academic institutions to foster growth of innovation and entrepreneurship amongst the faculty and students.

Benefits

- i. Become a leader- manage a student organization, illustrate abilities in planning, logistics, marketing, and advertising, create visibility for future employers.
- ii. Build a network- make contacts with entrepreneurs, professionals and academics who can help with recommendations, network and start a venture with peers.

- iii. Initiate innovative activities- invite business leaders to campus, plan new and exciting events for students to kick-start learning about new industries and different aspects of business planning.

Functions of the Entrepreneurship Cell

- To inculcate a culture of innovation driven entrepreneurship through student projects.
- To organize Entrepreneurship Awareness Camps, Entrepreneurship Development Programmes, Faculty Development Programmes and Skill Development Programmes in the Institute/institution.
- To arrange interaction with entrepreneurs and create a mentorship scheme for student entrepreneurs.
- To facilitate creation of entrepreneur's club in each department to foster culture of entrepreneurship amongst students
- To disseminate knowledge and insights in entrepreneurial theory and practice through lectures activities and workshops.
- Build knowledge and skills to translate ideas into opportunities while they are on campus.
- Be motivated to start their own companies after graduation or after a few years of gaining industry experience.
- Be inspired to consider entrepreneurship as a possible career option

Innovation, Incubation and Entrepreneurship Development Center (IIEDC)

Year 2017

List of activities undertaken by IIED centre during year 2017

Sl. No.	Date	Name of Event	Organized By	No. of Attendee	Co-ordinator/s faculty/students
01	April 3, 2017	Seminar on “Emerging trends in Android based mobile app”	Mr. Abhishek Kumar, Senior Corporate Technical Trainer (IBM Experts)	118	HEAD, IIED Center
02	April 15-16, 2017	Two day’s workshop on Robotics	Utkranti, eDC Team, IIT Delhi	78	HEAD, IIED Center
03	April 29-30, 2017	Two day’s Workshop on “PLC & SCADA”	CETPA Infotech. Pvt. Ltd.	63	Vaibhav Mishra Shrishti Hooda Suryansh Mishra
04	May 6-7, 2017	Two day’s workshop cum National Championship on Internet of things	TechieNest Pvt. Ltd. And IIT Hyderabad	82	HEAD, IIED Center

05	June 10, 2017	Interaction session with Kashmir's Entrepreneurs	Founder of KashBook, Co-Founder of Captivating Kashmir and INSPIRE award winner Zufa Iqbal	97	Rahul Kumar Shriyansh
06	Sep 6-7, 2017	"Youth Entrepreneurship in conflict areas" Symposium in Srinagar, J&K	CHINAR International in association with South Asia Network of Impact Masters and IIED Center, NIT Srinagar	27	HEAD, IIED Center
07	Oct 2, 2017 (MEGA EVENT)	IDEA CHALLENGE 2017 – "The Future World"	IIED Center	1000+	IIEDC Team 9with prize money worth 30,000 distributed to winners)
08	Oct 2, 2017	Swachh Bharat Abhiyan	Srinagar Municipal Corporation	43	Shriyansh
09	Oct 2, 2017	Orientation Session of Batch 2016 & Batch 2017	IIED Center	600+	IIEDC Team
10	Oct 5, 2017	Orientation program of "The Better You"	STARTUP KASHMIR	134	Abhishek Gourav Rahul Kumar Shriyansh
11	Oct 29, 2017	One day seminar on "Importance of international certification in Design, Automation and IT industries"	CETPA Infotech. Pvt. Ltd.	540+	Shriyansh Rahul Kumar
12	Nov 2, 2017	Interaction Session with "Prof. Anil Kumar Gupta", Founder of Honey Bee Network.	Central University of Kashmir	18	Rahul Kumar
13	Nov 9, 2017	Catalysing a cultural shift in youth entrepreneurship	EDP Cell on National Entrepreneurship Day	88	Nishant Sharma Manik Lamba

Table-B.9.6

14. Apart from the above the IIED centre is working for establishment of state of the art Incubation centre for which DPR is being prepared with help of consultants.

15. Successfully handed over an innovative project titled as "Value addition in a room warmer, Bukhari" to NIF which was commercialised and handed over to a local firm for production.

16. presently the centre is working to design and develop a walnut hulling machine, another NIF project.

THE CONCEPT OF IDEA BANK

Given by IIED Centre and is being implemented in different schools and institutions of the Valley

5-3-2016

A bank is a facility where people invest their money to get higher value of their investments. The banking process is interrelated to the general economic system of a nation. Billions of people invest in different schemes to obtain benefit in different ways. Innovation involves improving the way of producing goods or services. Often it involves creating better or efficient technology or a value addition in a product, process, procedure or method. Innovation may be the result of Research & Development. But innovation could also be a 'brainwave' – A Eureka moment where someone has a good idea to improve working practices. Idea generation is the creative process used in order to

figure out solutions to difficult challenges. Idea generation is a natural process which flashes in the mind and is generated through some mechanism. This mechanism could be a long continuous effort towards solving a problem. It could also be a whim, contemplation, intuition, or a perception which may arise because of knowledge, experience or a hunch. Every individual in his life generate ideas to resolve a problem, or feels that his idea if applied or processed might provide a solution, when known solutions are unavailable. His idea may or may not mature or may vanish from his mind.

Converting ideas into accomplishments is a tedious process and requires application of certain resources, knowledge and processes. There are many situations in which some brilliant idea which might have made a difference, fade and vanish away because of lack of right approach in protecting and storing it. Idea bank is a concept which provides a platform where ideas of individuals are deposited and stored. The processing of these ideas can be carried in incubation centres nearest to such banks leading to its logical conclusion. It is a structured methodology which can help individuals to process their idea to obtain solution for their problem. The banks initially collect ideas. These ideas are taken to second phase where they are further filtered and relevant ideas are allowed to enter the next stage. In the third stage, the relevant experts process these ideas and add value to it. This stage may define the material requirements, technology to be used, bill of materials, drawing, processes, methods etc., whatever is relevant for the idea. This is the major stage which enables to develop a prototype or defines a new process or method.

Idea banks need to be established in:

1. Primary and secondary level Schools.
2. All other educational institutions including Institutes, universities, technical and non technical institutions, training centres industries, service and manufacturing units.

Idea banks need to coordinate at different levels to share and develop ideas, mechanism of which could be developed.

Invitation Lecture by an Eminent Professor

Date: 20-05-2016

Professor K.L. Chopra, eminent Scientist, academician and ex- Director IIT Kharagpur, visited NIT Srinagar and delivered an expert lecture on the topic, "**Nurturing Innovation & Entrepreneurship in Academia**" on **24th May, 2016 (Tuesday) at 4.00 p.m.**, in the Institutes HI-Tech. Room.

The lecture was very informative and thought provoking and was appreciated by one and all.

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

(The institution may specify the Co-curricular and extra-curricular activities) (Quantify activities such as NCC, NSS etc.)

- Students are encouraged to participate in extracurricular activities.
- Music and Hobbies clubs are functioning very effectively.
- All the departments have their own technical societies which organise technical seminars, quizzes and other competitions in the departments to give a thrust to the development of academic potential of the students.

- NSS units have also been rendering valuable service by inculcating the habits of social and national responsibilities amongst the students.
- A technical fest called 'Techvaganza' is conducted every year.
- Our students participate in the cultural activities outside the campus also.

9.7.1 Sports and Games Facilities

Adequate provisions for extra-curricular activities are available in the institute. At present, facilities are available for Badminton, Volley-Ball, Football, Cricket, Basketball, Kho-Kho, Kabaddi, Athletics and other Indoor Games.

Details of Faculty/ Staff in Charge for Sports and Games

Name	Designation	Department
Dr. S.K. Bukhari	Associate Dean	Physical Education
Ms. K. A. Mir	SAS Officer	Physical Education

Table-B.9.7.1a

Faculty Profile for Physical Education

1. Name: Dr. S.K. Bukhari

Email: kaiser@gmail.com

2. Name: Ms. K. A. Mir

mail: kowsaralimir@gmail.com

Designation: SAS Officer

Inter-Semester Sports Meet: The Institute organizes the Biannual sports meet in every academic year, known as Inter-Semester Sports Meet. Inter-Semester Sports Meet provides an excellent platform for the students to exhibit their sports and game capabilities. Various events like Badminton, Volley-Ball, Football, Cricket, Basketball, Kho-Kho, Kabaddi, Chess, Carrom, Hockey, Table tennis and Athletics 100 meter, 200 meter 400 meter, 800 meter race, high jump, long jump, shot put, etc are conducted.

Fig:Inter-Semester Sports Meet



Figure-B.9.7.1

Sports and Games Facilities

SL.NO	NAME OF THE EVENT	AREA	MODE OF GAME
1	Table Tennis	8 standard tables	Indoor
2	Basketball	38 m x 18m(2)	Outdoor
3	Volley ball	40 m x 25 m (3)	Outdoor
4	Carom	game boards (10)	Indoor
5	Badminton courts	7 courts	Outdoor
6	Football	110 m x 70 m	Outdoor
7	Chess	game boards (20)	Indoor
8	Gymnasium (Boys)	25 m x 15 m (Fitness Equipments)	Indoor
9	Gymnasium (Girls)	13 m x 7 m	Indoor
10	Cricket	Hard Pitch	Outdoor

Table-B.9.7.1b

Sports Events Conducted/ participated/ in and outside NIT Srinagar from 1st January 2015 upto 31st April 2018

S.No.	Sports Event/s	Place and month where played/ conducted	Prizes/ Awards/ Positions
1.	All India Inter NIT Athletics (Boys/Girls) at NIT Rourkela	NIT Rourkela January 2015	Participation
2.	All India Inter NIT Cricket (Boys) at NIT Allahabad	NIT Allahabad February 2015	Participation
3.	All India Inter NIT Football (Boys) at NIT Warangal	NIT Warangal February 2015	Participation
4.	Inter-Semester Tournament in all Games (Boys & Girls) Spring	NIT Srinagar (April 2015)	All Semesters
5.	International Yoga Day (Boys and Girls)	NIT Srinagar (June 2015)	All students of the Institute
6.	Tri-series of Cosco cricket tournament with SSM Collage Srinagar	SSM Institute July	Won by NIT Srinagar
7.	Tri-series of Basketball tournament with SSM Collage Srinagar	SSM Institute August	Runner up
8.	State Football Tournament (Boys)	SRTC Srinagar (June 2015)	4 th place
9.	Inter-Semester Tournament in all Games (Boys & Girls) Autumn	NIT Srinagar (September 2015)	All Semesters
10.	All India Inter NIT Kho-Kho and Kabaddi (Boys/Girls) at NIT Rourkela	NIT Rourkela January 2016	Participation
11.	All India Inter NIT Athletic (Boys/Girls) at NIT Jaipur	NIT Jaipur February 2016	2 nd in long jump and 3 rd in triple jump
12.	All India Inter NIT Cricket (Boys) at NIT Calicut	NIT Calicut March 2016	Participation
13.	Inter-Semester Tournament in all Games (Boys & Girls) Spring	NIT Srinagar (September 2016)	
14.	Inter NIT/ IIT Tournament Hockey (Boys)	IIT Roorkee (April 2016)	3 rd place
15.	Open Tournament in all Games (Boys & Girls)	NIT Srinagar (April 2016)	
16.	State Football Tournament (Boys)	SRTC Srinagar (May 2016)	3 rd place
17.	Tri-series of cricket tournament with GMC Srinagar	NIT Srinagar 2016	Won by NIT Srinagar
18.	Tri-series of cricket T20	NIT Srinagar 2016	Won by NIT Srinagar

	tournament with SSM Collage Srinagar		
19.	Cricket Match between Alumni and Faculty of the Institute on the Eve of Alumni Day	NIT Srinagar (May 2016)	Won by Alumni
20.	Cricket Tournament with Government Dental Institute Srinagar	NIT Srinagar (June 2016)	Won by NIT Srinagar
21.	Karwan-i-Aman Cricket Tournament conducted by Sashashtra Seema Bal (SSB 47 th Batallion)	NIT Srinagar (June 2016)	Runner up
22.	International Yoga Day (Boys and Girls)	NIT Srinagar (June 2016)	Participation by all students
23.	National Workshop on Physical Education for all NITs	NIT Transit House Delhi (August 2016)	Sports Fraternity from all NITs participated
24.	Rashtriya Ekta Saptah	NIT Srinagar (November 2016)	All the students of NIT Participated
25.	Observance of Fundamental Duties Day	NIT Srinagar (November 2016)	All the students of NIT Participated
26.	Open State Basketball Championship	Indoor Games Stadium (November – December 2016)	Runner up
27.	Inter-Semester Tournament in all Games (Boys & Girls)Autumn	NIT Srinagar (April 2016)	All the students of NIT Participated
28.	All India Inter NIT Cricket(Boys)/ Swimming (Boys & Girls) Tournaments	NIT Rourkela (January 2017)	5 th place in Cricket
29.	Coaching Camp for Boys & Girls in Chess & Table Tennis	NIT Srinagar (March 2017)	All the students of NIT Participated
30.	All India Inter NIT Table tennis(Boys/Girls) and Chess (Boys & Girls) Tournaments at NIT Srinagar	NIT Srinagar (April 2017)	Winner T.T (boys) Chess Runner up (girls) And T.T (girls) 2 nd runner up
31.	IST State Championship of Cricket (Boys), Football (Boys) and Basketball (Boys).	Jammu University (April 2017)	Runner up Basketball 4 th place in cricket
32.	Summer State Basketball League.	Indoor Stadium 2017	Runner up

33.	Inter-Semester Spring Tournament in all Games (Boys & Girls)	NIT Srinagar (May 2017)	All the students of NIT Participated
34.	Yoga day	NIT Srinagar (June 2017)	All the students of NIT Participated
35.	Open Badminton Tournament (Boys)	NIT Srinagar (August-September 2017)	All the students of NIT Participated
36.	Inter-Semester Autumn Tournament in all Games (Boys & Girls)	NIT Srinagar (September 2017)	All the students of NIT Participated
37.	Club Activities	NIT Srinagar (September 2017)	All the students of NIT Participated
38.	Rashtriya Ekta Diwas	NIT Srinagar (October 2017)	All the students of NIT Participated
39.	Open (Tennis Ball Cricket/Cosco Cricket Tournament	NIT Srinagar (October 2017)	All the students of NIT Participated
40.	Cricket Tournament with Government Dental Institute Srinagar	NIT Srinagar (November 2017)	Winner
41.	All India Inter NIT Kabaddi (Boys)	NIT Surathkal (January 2018)	Participation
42.	All India Inter NIT Badminton (Boys/Girls) and Basketball (Boys) Tournaments at NIT Warangal	NIT Warangal (January 2018)	4 th place in basketball 5 th place in badminton
43.	2nd State Championship of Cricket (Boys), Football (Boys) Badminton (Boys) and Table tennis (Boys).	Jammu University (April 2018)	Winner in Table tennis 3 rd place in badminton 3 rd place in cricket

Table-B.9.7.1c

Additional Student Activities Held During the Past Three Years

Sl. No.	Particulars	Year
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01.	Debate on the verdict of Salman Khan's hit and run case	2015-2016
02.	Vigilance Awareness Week	
03.	Kavi Samelan	
04.	Traffic Management	
05.	Hemoglobin Derive for females	
06.	Techvaganza	
07.	Mental Heath Day	
08.	Yoga Day	
09.	Cleanliness Drive (Swachh Bharat Abhiyan)	2015-2016,
10.	Alumni Meet	2016-2017,
11.	Fresher's Day/Orientation Programme	2017-2018
12.	Farewell	
13.	Induction Programme	2017-2018
14.	Stress Management	2017-2018
15.	Passport Mela	2017-2018
16.	Musical Concert (Ustad Kamal Sabri)	2017-2018

Table-B.9.7.1d

CRITERION 10	Faculty/Non-teaching Recruitment Rules	120
Marks Claimed		120

10.1 Organization, Governance and Transparency (55 marks)

10.1.1 (05 marks)

A. Availability of the Vision & Vision Statement of the Institute

Vision of NIT Srinagar

To establish a unique identity of a pioneer technical Institute for NIT Srinagar 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 global challenges.

Mission of NIT Srinagar

- (1) The broad mission of NIT Srinagar is to create a strong and transformative technical educational environment in which fresh ideas, moral principles, research and excellence nurture with international standards.
- (2) Technically educated and broadly talented engineers, future innovators and entrepreneurs, graduate with understanding the needs and the problems of the industry, the society, the state, and the nation.
- (3) We promise to inculcate the highest degree of confidence, professionalism, academic excellence and engineering ethics in budding engineers.

B. Appropriateness / Relevance of the Statements

The National Institute of Technology Srinagar has been established with a prime motive to produce skilled human resource who will act as nation builders. In NIT Srinagar students from all over the country take admissions and leave the institution as technically educated and talented manpower and get absorbed in different fields throughout the world. The Vision and Mission of the Institute is fully in consonance to work and in imparting the education to the students.

10.1.2 Availability of Institutional Strategic Plan and its Effective Implementation and Monitoring (25 marks)

The institute has prepared Vision Document for 15 years upto 2025. The said document is placed as **Annexure-1.**

10.1.3 Governing Body, Administrative Setup, Functions of Various Bodies, Service Rules Procedures, Recruitment and Promotional Policies (10 Marks)

A. Board of Governors

Chairman	Nominated under Section 17(15) of the First Statutes of NIT Act 2007	Prof. Rakesh Sehgal Director, National Institute of Technology Srinagar, Hazratbal, Kashmir-190006
Ex-Officio	Nomination under Section 11 of NIT Act, 2007 (29 of 2007) Clause (b)	Prof. Rakesh Sehgal, Director, National Institute of Technology Srinagar, Hazratbal, Kashmir-190006
<i>Two persons not below the rank of the Joint Secretary to the Government of India to be nominated by the Central Government from amongst persons dealing with technical education and finance</i>	(c)	Joint Secretary (NITs & DL), Ministry of Human Resource Development, Department of Secondary & Higher Education, Government of India, New Delhi
	(c)	Smt. Darshana Momaya Dabral, Joint Secretary & FA, Ministry of Human Resource Development, Department of Secondary & Higher, Government of India, New Delhi.
<i>Two persons to be nominated by the Government of the State in which the Institute is situated, from amongst persons, who, in the opinion of that Government, are technologists or industrialists of repute</i>	(d)	Commissioner Secretary, Higher & Technical Education Dept., Government of Jammu and Kashmir, Civil Secretariat, Srinagar / Jammu.
	(d)	Mr. Sheikh Zubair Aslam, Hassan Sons Group, Srinagar Kashmir
<i>Two persons, at least one of whom shall be a woman, having special knowledge or practical experience in respect of education, engineering or science to be nominated by the Council</i>	(e)	Dr. Prema Ramchandran, Director, Nutrition Foundation of India, Delhi
	(e)	Awaited
<i>One Professor and one Assistant Professor or a Lecturer of the Institute to be nominated by the Senate</i>	(f)	Prof. Rajinder Ambardar, Metallurgical & Materials Engineering Department, National Institute of Technology Srinagar.
	(f)	Dr. Mohammad Hanief, Assistant Professor, Mechanical Engineering Department, NIT Srinagar
Member-Secretary	Section 18 Clause (2)	Dr. Nisar Ahmad Mir, Registrar, NIT, Srinagar.

Table-10.1.3a

Finance Committee

Chairman		Prof. Rakesh Sehgal Director, National Institute of Technology Srinagar, Hazratbal, Kashmir-190006
Members Two persons nominated by the Central Government	1	Mr. S. P. Goyal, Joint Secretary (NITs & DL), Ministry of Human Resource Development, Department of Secondary & Higher Education, Government of India, New Delhi
	2	Smt. Darshana Momaya Dabral, Joint Secretary & FA, Ministry of Human Resource Development, Department of Secondary & Higher, Government of India, New Delhi.
Two persons nominated by the BOG from amongst its members	1	Prof. Rajinder Ambardar, Metallurgical & Materials Engineering Department, National Institute of Technology Srinagar.
	2	--
Director (Ex-officio)		Prof. Rakesh Sehgal Director, National Institute of Technology Srinagar, Hazratbal, Kashmir-190006
Member Secretary (Ex-officio)		Dr. Nisar Ahmad Mir, Registrar, NIT, Srinagar.

Table-10.1.3b**Senate**

<i>Chairman</i>		Prof. Rakesh Sehgal Director, National Institute of Technology Srinagar, Hazratbal, Kashmir-190006
Three persons, one of whom shall be a women, not being employees of the Institute to be nominated by chairperson in the consultation with the Director, from amongst educationists of repute, one each from the field of science, engineering and humanities	1	Field of Humanities Prof. Mehraj-ud-Din, Vice-Chancellor, Central University of Kashmir, Srinagar (J&K)
	2	Field Of Engineering

		Prof. A. K. Jain, Professor, Civil Engineering, Indian Institute of Technology, Hauz Khas, New Delhi
	3	<u>FIELD OF SCIENCE:</u> Prof. Azra Nahid Kamili, Dean Biological Sciences & HOD, Environmental Sciences, University of Kashmir
		Mr. Rajesh Uppal, Executive Director IT & CIO, Information Technology Division, Maruti Suzuki India Ltd., Palam Gurgaon Road, Gurgaon-122015 (Haryana) E mail: Rajesh.Uppal@maruti.co.in
<i>The Professors appointed or recognized as such by the Institute for the purpose of imparting instructions in the Institute.</i>	1	All Professors
Such other members of the staff as may be laid down in the Statutes	1	All Dean, HoDs, Associate Deans, Controller of Examination, Co-ordinator 1 st & 2 nd Semester, Chairman Library Committee, Librarian and DPE.
Secretary		Dr. Nisar Ahmad Mir, Registrar, NIT, Srinagar

Table-10.1.3c**Building and Works Committee**

Chairman		Prof. Rakesh Sehgal Director, National Institute of Technology Srinagar, Hazratbal, Kashmir-190006
Members Nominated by MHRD and IFD New Delhi	1	Director OR Deputy Secretary (NITs), MHRD, Department of Secondary & Higher Education, Government of India, New Delhi – 110 001. Representative of
	2	Integrated Finance Division (IFD)

One person nominated by the Board of Governors	Syed Shuja Hussain, Former Chief Engineer (Civil) PWD J&K Government R/o:Al-Manzir, Rajbagh, Srinagar
Dean, Planning & Development	Prof. Javed Ahmad Bhat, Civil Engineering Department, NIT Srinagar
Nominee of the CPWD / State PWD	<ol style="list-style-type: none"> 1 Mr. N. K. Bansal Superintendent Engineer (Civil), CPWD, Chandigarh. 2 Dr. B. A. Mir, Associate Dean, P&D, NIT Srinagar 3 Shri Rajiv Sao, Superintendent Engineer, CPWD Chandigarh 4 Executive Engineer (Civil), CPWD, Srinagar.
Secretary	Dr. Nisar Ahmad Mir, Registrar, NIT, Srinagar.

Table-10.1.3c**Function and Responsibilities of key Bodies**

The functions of key bodies are depicted in table below:

Bodies	Functions and Responsibilities
Board of Governors	<ul style="list-style-type: none"> • the Board shall be responsible for the general superintendence, direction and control of the affairs of the Institute • take decision on questions of policy relating to the administration and working of the Institute • institute courses of study at the Institute • make statutes • institute and appoint persons to academic as well as other posts in the Institute • consider and modify or cancel ordinances • consider and pass resolutions on the annual report, the annual accounts and the budget estimates of the Institute for the next financial year as it thinks fit and submit them to the Council

	<p>together with a statement of its development plans</p> <ul style="list-style-type: none"> • exercise such other powers and perform such other duties as may be conferred or imposed upon it by this act or the statutes • the Board shall have the power to appoint such committees, as it considers necessary for the exercise of its powers and the performance of its duties under this Act.
Finance Committee	<ul style="list-style-type: none"> • examine and scrutinize the annual budget of the Institute prepared by the Director and make recommendations to the Board and • give its views and make its recommendations on any financial proposals or issues affecting the Institute to the Board either on the initiative of the Board or of the Director or on its own motion
Building and Works Committee	<ul style="list-style-type: none"> • the Building and Works Committee shall under the directions of the Board shall carry on construction of all major works after the necessary administrative approval and expenditure sanction from the Board. • have the power to give the necessary administrative approval and expenditure sanction for minor works and works pertaining to repair and maintenance, within the approved budgetary provision of the Institute and the Board will define the minor work and minor repair and maintenance in terms of quantum or expenditure • cause to prepare estimates of cost of buildings and other capital works, minor works, repairs, maintenance and the like. the Building and Works Committee shall approve the cost estimates for minor works, minor repairs and maintenance • be responsible for making technical scrutiny of the design, estimates and specifications of the material as may be considered necessary • be responsible for enlistment of suitable contractors and acceptance of tenders and shall have the power to give directions for departmental works where necessary duly recommended by the Dean (P&D) of the Institute • have the power to settle rates not covered by tender and settle claims and disputes with contractors • in the opinion of the Chairman of the Building and Works Committee, any emergency has arisen which requires immediate action to be taken; he shall take such action and report the same to the Building and Works Committee and the Board at their next meeting. • shall also perform such function and exercise such powers as may be entrusted by the board from time to time.
Senate	<ul style="list-style-type: none"> • frame and revise curricula and syllabi for the courses of studies for the various Departments and Centres • make arrangements for the conduct of examinations, appointment

	<p>of examiners, moderators, tabulators and other matters relating to the examinations</p> <ul style="list-style-type: none"> • declare the results of the examinations or to appoint committees or Officers to do so and to make recommendations to the Board regarding conferment or grant of degrees, diplomas and other academic distinctions or titles • appoint Advisory Committees or Expert Committees or both for the Departments or Centres of the Institute to make recommendations on academic matters connected with the working of the Departments or Centres • appoint Committees from amongst the members of the Senate, other Teachers of the Institute and experts from outside to advise on such specific and important academic matters as may be referred to any such committee by the Senate • consider the recommendations of the Advisory Committees attached to various Departments or Centres and that of Expert and other Committees and take such action (including the making of recommendations to the Board) as warranted by each case • make periodical review of the activities of the Departments or Centres and take appropriate action (including the making of recommendations to the Board) • supervise the working of the Library of the Institute • promote research and academic development or activity within the Institute and seek reports on such research or academic development or activity from the persons engaged therein • provide for the inspection of the class rooms, laboratories, library and the Residential Hostels • plan co-curricular activities of the students of the Institute • award stipends, scholarships, medals and prizes and make other awards in accordance with such conditions as may be attached to the awards • make recommendations to the Board to disseminate knowledge through distance learning mode to various parts of the State or country or abroad and in the cases of signing of agreement with the foreign agency, agreement may be signed with approval of the ministry • make recommendations to the Board to disseminate knowledge through distance learning mode to various parts of the State or country or abroad and • invite up to two student representatives during discussion of general nature not involving policy or disciplinary matter in the Senate meetings.
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Table-10.1.3d

Frequency, participations details of external members and attendance of Board of Governors, Finance Committee, Building and Works Committee and Senate:

Sl.No.	Date of meetings	Academic Year	No. of participants (external members)	Total No. of Participants
Board of Governors				
1	14-03-2018	2017-18	02	06
2	21-11-2017	2017-18	03	07
3	19-06-2017	2017-18	03	07
4	13-10-2016	2016-17	03	08
5	04-10-2016	2016-17	05	10
6	03-06-2016	2016-17	01	06
7	11-04-2016	2016-17	03	08
Finance Committee				
1	14-03-2018	2017-18	02	05
2	21-11-2017	2017-18	02	05
3	04-10-2016	2016-17	02	05
4	11-04-2016	2016-17	03	07
Building and Works Committee				
1	01-11-2017	2017-18	05	10
2	03-10-2016	2016-17	04	07
3	01-09-2016	2016-17	04	08
4	22-04-2016	2016-17	04	08
Senate				
1	27-12-2017	2017-18	01	42
2	31-12-2016	2016-17	03	42
3	08-04-2016	2016-17	01	42

Table-10.1.3e

B. The Published Service Rules, Policies and Procedures with Year of Publication

Service Rules

The Institute follows the Central Government Service Rules approved by the Ministry of Human Resource Development for both Faculty and Non faculty and as amended from time to time.

The Copies of Service Rules **are enclosed.**

I. Faculty Recruitment Rules. – **Annexure-2**

II. Non-Teaching Recruitment Rules - **Annexure-3**

C. Minutes of the Meetings and Action Taken Reports**Minutes of the Meetings****Minutes of the 96th meeting of Board of Governors****National Institute of Technology Srinagar, Hazratbal, J&K**

Held on March 14, 2018 at 12.00 p.m. at NIT Transit House, Safdarjung Enclave,
New Delhi.

BOG/2018/96/01	To confirm the minutes of the 95 th Board of Governors Meeting of the Institute held on 21 st November, 2017 in NIT Transit House, at Safdarjung Enclave, New Delhi.
Resolution No. 01/96	Confirmed.
BOG/2018/96/02	To record action taken report on the decisions of 95 th Board of Governors Meeting held on 21-11-2017 in the NIT Transit House, Safdarjung Enclave, New Delhi.
Resolution No. 02/96	Report recorded. However in respect of resolution No. 12/95 & 13/95, it was desired that the MHRD may expedite the matter.
BOG/2018/96/03	To ratify the action taken by the Chairman BOG in having approved the foreign visits of faculty members of the Institute under CPDA.
Resolution No. 03/96	Ratified.
BOG/2018/96/04	To ratify the action taken by the Director in the capacity of Chairman BOG for implementation of 7 th Pay Commission in favour of Non-Faculty positions.
Resolution No. 04/96	Ratified.
BOG/2018/96/05	To ratify the action taken by Chairman BOG for renewing the recognition of Alumni Association NIT, Srinagar.
Resolution No. 05/96	Ratified.
BOG/2018/96/06	To ratify the action taken by Chairman BOG for reorganization of Alumni Association NIT, Srinagar (Delhi Chapter).
Resolution No. 06/96	Ratified.
BOG/2018/96/07	To ratify the action taken by Chairman BOG for signing MoU with IIT Jammu and IIT Delhi by NIT Srinagar.
Resolution No. 07/96	Ratified.
BOG/2018/96/08	To ratify the action taken by the Director in capacity of Chairman BOG in having approved the engagement of Temporary Faculty for the Academic Spring Session 2018.
Resolution No. 08/96	Ratified. Further, BOG ordered that Institute should fill up permanent faculty at the earliest and temporary faculty together with permanent faculty should not exceed the sanctioned strength.
BOG/2018/96/09	To consider signing of MOU between NIT Srinagar and Department of Higher Education, MHRD, New Delhi, in pursuance of the rule 229 (xi) of the GFR, 2017, and as per the Instruction of MHRD.
Resolution No. 09/96	BOG considered signing of MOU between NIT Srinagar and Department of

	Higher Education, MHRD, New Delhi.												
BOG/2018/96/10	To authorize the Chairman BOG/Director of NIT, Srinagar to grant approvals for new development projects and purchase of laboratory equipments under Financing from Higher Education Funding Agency (HEFA).												
Resolution No. 10/96	BOG considered the recommendations of the FC that the ongoing development projects which are under completion be now projected under HEFA for meeting out the deficient funds. A DPR of these projects be prepared and submitted to MHRD for approval before the Institute applies for loan under HEFA. Further, FC was apprised that such projects stand considered and approved in previous FC and BOG meetings. No new projects be taken up without the prior approval of the competent authority.												
BOG/2018/96/11	To consider the remuneration / sitting fee in favour of all the members of FC/BWC/BOG for attending the meetings.												
Resolution No. 11/96	BOG desired that this is already approved in the NIT ACT and the Institute should proceed accordingly.												
BOG/2018/96/12	To consider the recommendation of Deans/HODs/in capping the expenditure limit for procurement of consumables, payment for testing the materials.												
Resolution No. 12/96	Matter considered. However, the expenditure is exclusively recommended for B. Tech. final year students for under taking the UG projects. Post Graduate projects and Ph.D. research related expenditure is also allowed subject to the following ceiling: <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Sl.No.</th> <th>Classifications of Students</th> <th>Amount Limit</th> </tr> </thead> <tbody> <tr> <td>01.</td> <td>Under Graduate Students</td> <td>Rs.3000/- Per student. (one time final year students)</td> </tr> <tr> <td>02.</td> <td>Post Graduate Students</td> <td>Rs.10,000/- Per student. (one time)</td> </tr> <tr> <td>03.</td> <td>Ph.D Students</td> <td>Rs.20,000/- per Student per annum</td> </tr> </tbody> </table>	Sl.No.	Classifications of Students	Amount Limit	01.	Under Graduate Students	Rs.3000/- Per student. (one time final year students)	02.	Post Graduate Students	Rs.10,000/- Per student. (one time)	03.	Ph.D Students	Rs.20,000/- per Student per annum
Sl.No.	Classifications of Students	Amount Limit											
01.	Under Graduate Students	Rs.3000/- Per student. (one time final year students)											
02.	Post Graduate Students	Rs.10,000/- Per student. (one time)											
03.	Ph.D Students	Rs.20,000/- per Student per annum											
BOG/2018/96/13	To ratify the action taken by the Director in having advertised the vacant faculty positions on regular basis and to consider nomination of experts.												
Resolution No. 13/96	Ratified. Further Institute should fill up permanent faculty at the earliest possible												
BOG/2018/96/14	To consider the recommendations of Deans Committee for revision of consultancy rules of NIT, Srinagar.												
Resolution No. 14/96	Proposal to be placed in the next BOG meeting.												
BOG/2018/96/15	To consider the budget allocations of 2018-19 for NIT Srinagar.												
Resolution No. 15/96	BOG considered the recommendations of the FC that the ongoing development projects which are under completion be now projected under HEFA for deficient funds. A DPR of these projects be prepared and submitted to MHRD for approval before the Institute applies for loan under												

	HEFA. Further, FC was apprised that such projects stand considered and approved in previous FC and BOG meetings. No new projects be taken up without the prior approval of the competent authority.
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Table-10.1.3f**Minutes of the 95th meeting of Board of Governors****National Institute of Technology Srinagar, Hazratbal, J&K**

held on November 21, 2017 at 02.00 p.m. at NIT Transit House, Safdarjung Enclave, New Delhi .

BOG-95/01	To confirm the minutes of the 94 th Board of Governors meeting of the Institute, held on June 19 th , 2017 in NIT Transit House, at Safdarjung Enclave, New Delhi.
Resolution No. 01/95	Minutes Confirmed with the change that the words, 'so called' be replaced by 'as reported' in the twelfth line of the Resolution No. 05/94 of BOG-94/05. This change was sought to be made by the Chairman in view of the sentiments expressed by the then I/C Director, Prof. A. R. Dar in one of his communications. While confirming the minutes, the BOG was informed that with regard to Resolution No. 04/94 of BOG-94/04 the issues have been, by and large, addressed by the Revised final modified RRs and the recommendations of the Anomaly Committee.
BOG-95/02	To record action taken report on the decisions of 93 rd Board of Governors meeting, held on October 04, 2016 and Adjourned meeting on October 13, 2016 at NIT Transit House, Safdarjung Enclave, New Delhi.
Resolution No. 02/95	Report Recorded.
BOG-95/03	To ratify the action taken by the Chairman, BOG in having approved enhancement of wages as per the Labour Schedule of Government of India in favour of Contractual workers engaged on compassionate basis.
Resolution No.03/95	Ratified.
BOG-95/04	To ratify the action taken by the Chairman, BOG in having approved extension of cut-off date for usage of CPDA of Block 2014-17 by faculty members upto 31-03-2018.
Resolution No. 04/95	Ratified.
BOG-95/05	To consider the recommendations of the Central Purchase Committee with regard to releasing of remaining 30% payment in favour of M/S New Hi-Tech Enterprises, Srinagar against supply of gold medals for convocation 2013, held for the batches from 2004-2011.
Resolution No. 05/95	The BOG advised to refer the matter for legal opinion and take a decision accordingly.
BOG-95/06	Adoption of communications of Vigilance Section of Department of Higher Education, MHRD, received by the Institute.
Resolution No. 06/95	Adopted
BOG-95/07	To consider the minutes of 8 th , 9 th and 10 th meetings of NIT Council held on 25-09-2014, 01-10-2015 and 26-05-2017 respectively.

Resolution No. 07/95	Report Recorded. The minutes of 10 th meeting of NIT Council was tabled in the meeting.
BOG-95/08	To adopt amendments in the First Statutes of the National Institutes of Technology (NITs).
Resolution No. 08/95	Adopted
BOG-95/09	To adopt the recommendations of the Anomaly Committee on new Recruitment Rules for Faculty in NITs and IEST regarding promotion of existing Assistant Professors to Associate Professors and mapping of existing Associate Professors with AGP of Rs.9,000/- to Rs. 9,500/- and Professors with AGP of Rs. 10,000/- to Rs.10,500/- communicated vide F. No. 33-9/2011-TS.III, dated 6 th October, 2017 and F. No. 33-9/2011-TS.III, dated 17 th November, 2017
Resolution No. 09/95	Adopted. The communication vide F.No. 33-9/2011-TS.III, dated 17 th November, 2017 was tabled in the meeting.
BOG-95/10	To consider the recommendations of the Finance Committee made at its meeting held on 04-10-2016 at 10.30 a.m. at NIT Transit House, Safdarjung Enclave, New Delhi.
Resolution No. 10/95	The recommendations of the Finance Committee are Approved
BOG-95/11	To approve the recommendations of the Selection Committee for appointment of Registrar for NIT Srinagar.
Resolution No. 11/95	The recommendations of the Selection Committee for selection of Registrar for NIT Srinagar are Accepted and Approved. The offer letter may first be issued to the incumbent at S.No. 1, i.e., Dr. Nisar Ahmad Mir, at the earliest as per the recommendations of the Selection Committee. The necessary contract may be signed with the selected candidate.
BOG-95/12	To consider the request of existing Assistant Professors for promotion as Associate Professors as and when they complete their Ph.D.
Resolution No. 12/95	It was noted that all the above faculty members have teaching experience of more than 09 years and are already pursuing their Ph.D. programme. The BOG was of the view that the faculty members are getting covered for upgradations under the recommendations of the Anomaly Committee on new Recruitment Rules communicated vide F. No. 33-9/2011-TS.III, dated 6 th October, 2017, as a one time measure. However, it was decided to get a clarification from MHRD to this effect.
BOG-95/13	To approve for correcting and re-fixing the dates of eligibility of some of the Faculty members of NIT Srinagar.
Resolution No. 13/95	It was decided to bring the new revealed facts before the Board of Governors for allowing to carry out necessary exercise for implementing the selection committee recommendations, under rules, with regard to all cases in order to give effect to upgradations from the dates of eligibility. Accordingly the item was included in BOG agenda which was circulated to all members. A letter No. 16-7/2017-TS.III dated 20 th November, 2017 was received from MHRD on Nov 21, 2017 in which it was suggested to drop

	the item from the BOG agenda and instead refer the same to MHRD for their concurrence as decided earlier. However, the item was taken up in the BOG to inform the BOG about the new information that had got revealed about the subject. The BOG discussed the issue and concluded that the matter, with complete details of new revelations, be sent to the MHRD for their concurrence with a request to convey the same within the shortest possible time. Quick resolution of these faculty grievances will help the institute to progress the recruitment of new faculty as well as mapping/upgradation of the existing faculty to avoid any further anomalies. Regarding other faculty grievances presented and discussed in 94 th BOG meeting, seeking of concurrence from MHRD for their consequent redressal stands as decided by BOG for which concurrence as envisaged will also be sought.
BOG-95/14	To consider the recommendations of the Finance Committee made at its meeting held on 21-11-2017 at 10.30 a.m. at NIT Transit House, Safderjung Enclave, New Delhi.
Resolution No. 14/95	Recommendations of the Finance Committee are Approved. Minutes of the FC are attached.

Table-10.1.3g

Minutes of the 94th meeting of Board of Governors

National Institute of Technology Srinagar, Hazratbal, J&K

held on June 19, 2017 at 03.30 p.m. at NIT Transit House, Safdarjung Enclave, New Delhi .

BOG-94/01	To confirm the minutes of the 93 rd Board of Governors meeting held on 04.10.2016 and minutes of 93 rd BOG meeting (adjourned) held on 13.10.2016 of the Institute at NIT Transit House, Safdarjung Enclave, New Delhi.
Resolution No. 01/94	Minutes of the meeting of the 93 rd BOG held on 04.10.2016 were confirmed. The comments as received vide letter No. 16-7/2017-S.III dated: 19 th June, 2017 from MHRD with regard to adjourned meeting were discussed by the Board. Upon discussion the said minutes were agreed as confirmed with addition of the sentence that "The action with regard to points 2,3,5 and 6 as contained in Item No. 05/93 of BOG 93 rd dated: 13.10.2016 be initiated only after obtaining concurrence of MHRD".
BOG-94/02	To record report in having engaged the services of Assistant Solicitor General of India for J&K High Court at Srinagar as Institute Counsel for conducting the litigation.
Resolution No. 02/94	Report recorded.
BOG-94/03	To record report on the action taken by the Chairman, BOG in having approved engagement of temporary faculty for Autumn Session 2016 and session 2017 against the vacant faculty positions.
Resolution No. 03/94	Report recorded.
BOG-94/04	To consider modifications in the NIT Statutes.
Resolution No. 04/94	The BOG noted that the issues of the existing faculty have been, by and

	large, addressed by the Revised final modified RRs and the recommendations of the Anomaly Committee communicated vide F.No.35-5/2017-TS.III dated 28/31 July, 2017, F.No. 33-9/2011-TS.III, dated 6 th October, 2017 and F.No. 33-9/2011-TS.III, dated 17 th November, 2017.
Supplementary agenda BOG-94/05	To consider handing over charge of In-charge Registrar to Prof. M. S. Mir.
Resolution No. 05/94	Chairman, BOG introduced and asked for distribution of supplementary agenda- handing over charge of Incharge Registrar to Prof. M.S.Mir among the Board members. The Director strongly opposed the Supplementary Agenda tabled by the Chairman. Two representatives from MHRD were of the opinion that status quo be maintained till regular Registrar joins the Institute. Director also made it clear that he will never implement the supplementary agenda in view of the sequence of communications with the Chairman, BOG in this regard, in particular, unanimous resolution passed in Deans and HODs meeting held on 13.06.2017, to maintain the status quo in the interest of the Institute. The Chairman observed that by opposing tabling of this supplementary agenda and by referring to the so called unanimous resolution passed in the meeting of the Deans and HoDs, the I/C Director is only giving himself away. Chairman reiterated that it is his assessment that a change is called for given that incumbent I/C Registrar has been holding charge for nearly five years. He also mentioned that there is no apparent reason why Prof. M. S. Mir cannot be handed over charge given his meritorious background and positive and proactive approach. In view of the continued opposition of the I/C Director, the Chairman asked for the matter to be put to vote. Upon voting by the show of hands including the casting vote by the Chairman, BOG agreed to handing over of the charge to Prof. M. S. Mir and implementation of the Chairman's order to that effect immediately.

Table-10.1.3h

**Minutes of the 93rd meeting of Board of Governors
National Institute of Technology Srinagar, Hazratbal, J&K**

held on October 04, 2016 at 12.30 p.m. at NIT Transit House, Safdarjung Enclave, New Delhi .

BOG-93/01	To confirm the Minutes of the 92nd Board of Governors meetings of the Institute, held on June 03, 2016 at 03.30 p.m. in the Committee Room of the National Institute of Technology Srinagar.
Resolution No. 01/93	Confirmed.
Special item BOG-93/02	To consider the resumption of the class work for autumn session 2016 in the wake of situation in the Kashmir valley.
Resolution No. 02/93	The BOG deliberated on the issue of resumption of class work for autumn-2016 semesters. While taking into account all the options / suggestions put-forth by the members, students, parents, it was decided as under: In case the situation becomes conducive, the class work of Autumn-2016

	<p>semester will be resumed on 31st October, 2016 and continued till December 31st, 2016. The examinations for these semesters if not possible to be held at the end of session may be held in February 2017.</p> <p>In case class work is not possible to be resumed on 31 October 2016, the same will then be resumed w.e.f. February 01, 2017 and concluded by 15th April, 2017.</p> <p>The Spring 2017 semesters will start immediately thereafter and shall be concluded by 30th June, 2017.</p> <p>All Saturdays and holidays for these semesters (Autumn-2016& Spring-2017) will be converted into working days.</p> <p>In case class work resumes only from February 01, 2017, the intervening period will be utilized by the students for practical training, project works etc.</p> <p>The faculty of the institute will be available to the students through e-mail / phone / institute website for guiding them and offering clarification etc. for their assigned subjects.</p> <p>Further instructions and information from time to time will be conveyed through institute website.</p>
BOG-93/03	To record action taken report on the decisions of 92nd Board of Governors meeting, held on June 03, 2016 at 03.30 p.m. in the Committee Room of the National Institute of Technology Srinagar.
Resolution No. 03/93	Report recorded.
BOG-93/04	To record report regarding the creation of Delhi Chapter of NIT Srinagar Alumni.
Resolution No. 04/93	Report recorded.
BOG-93/05 and BOG-93/06	To consider recommendation of Grievance Committee for faculty. and To consider the proposal of ACoFAR Committee for mapping of existing faculty under Four Tier system.
Resolution Nos. 05/93 and 05/93	The items were deferred.
BOG-93/07	To consider providing of Ph.D. scholarship to registered DRFs / SRFs of the Institute upto a maximum period of 05 years as per latest MHRD order.
Resolution No. 07/93	Approved.
BOG-93/08	To consider : i) Request of Dr. Firdous Ahmad Wani, (presently on deputation to Jamia Hamdard, New Delhi) for grant of extension of the deputation in his favour till December 2017 ii) To ratify the action taken by the Chairman, Board of Governors in having granted extension in joining in favour of Dr. Firdous A. Wani, Registrar by two months.
Resolution No. 08/93	Extension in deputation not approved. Ratified.

	Dr. Wani be informed about the decision to join back the Institute.
BOG-93/09	To consider the Progress Report regarding Modernization of National Institute of Technology Srinagar against Rs. 100 Crore grant.
Resolution No. 09/93	After discussion, it was observed that the grant of 100 crores has not been received by the Institute as yet. BOG advised to complete all the preparatory works for executing the projects and tenders etc. can be floated once funds are received.
BOG-93/10	Report of DASA 2016 for information.
Resolution No. 10/93	Report recorded. The BOG congratulated and complimented NIT Srinagar for the smooth and successful completion of DASA 2016 process.

Table-10.1.3i

**Minutes of the 93rd (Adjourned) Meeting of Board of Governors
National Institute of Technology Srinagar, Hazratbal, J&K**

Meeting Held on October 13, 2016 at 11.00 a.m. at NIT Transit House, Safdarjung Enclave, New Delhi .

Item No. BOG-93/05	To consider recommendation of Grievance Committee for faculty.
Resolution No. 05/93	<p>A power-point presentation was made by the two internal members of the Grievance Committee who were specially called for the meeting. After this, detailed discussions were held on each of the recommendations of the Faculty Grievance Committee and the following was resolved:</p> <p>1 <u>Grievance listed at GR-01 (regarding extending the benefit of 5th CPC-CAS promotions to the faculty members from the due date of eligibility notionally without any financial benefit).</u></p> <p>The matter of fixation of date of eligibility in respect of Dr. I K Pandita, Dr R. Ambardar, Dr M. Mushtaq and Dr G A Harmann, was brought forth to bring parity with three professors whose date of eligibility was fixed vide order no. 93 of 2013 dated 25-04-2013 and who had been promoted earlier as Professors under 5th CPC in Dec. 2007 through open entry.</p> <p>The Board of Governors (BOG) observed that an order had been issued vide no. 93 of 2013 dated 25-04-2013 in favour of three professors for their placement as professors under CAS. However the supporting documents on the basis of which BOG issued above order, are not placed.</p> <p>Therefore the BOG desires that the case be returned to Faculty Grievance Committee to re-examine it in light of all supporting documents & come out with fresh recommendations.</p> <p>2 <u>Grievances listed at GR-02, GR-03, GR-04 and GR-05 (regarding extending the benefit of CAS promotions to the faculty members from the due date of eligibility notionally without any financial benefit).</u></p> <p>The BOG examined the provision 4(q) of MHRD circular issued vide F. No. 33-7/2011-TS.III; dated 14-03-2012, which provides for the arrangement in the cases where CAS interviews were not conducted for</p>

three (03) years or more and which reads as under:

"All Institutes shall strive to conduct annual selection processes regularly. In case of Institutes that have not conducted CAS interviews for 3 years or more, Selection Committees may, as a onetime measure, examine scholastic contribution of internal candidates made after the last interview and recommend a salary and AGP they would have earned now, had the Selection Committee met at the appropriate time".

The BOG observed that the selection committees in the cases of Faculty mentioned under BOG-05-(GR-02 to GR-05) have not carried out the exercise as mentioned in previous paragraph. As the CAS was held in 2007 & thereafter it was conducted in 2013 only, therefore BOG observed that the above mentioned provision 4(q) of MHRD circular may be used. This will call for constitution of Selection Committee as per statutory provisions and relevant MHRD circulars. ,

The representative of MHRD informed that the term of visitor nominees has already expired. Therefore Board decided that MHRD may be asked to expedite the matter and issue the valid list of visitor nominees.

In a similar matter, MHRD representative has stated that CAS cannot be done at this point in time. However it was brought to the notice of BOG that in all these cases one time CAS process, as desired by MHRD vide communication F. No. 33-7/2011-TS.III; dated 14-03-2012, stands already completed and orders issued way back in 2013 as these cases belong to the period prior to 30th April 2013 and only date of eligibility needs to be refixed by selection committee.

Board decided that MHRD may also be requested to allow application of provision 4(q) of MHRD circular issued vide F. No. 33-7/2011-TS.III; dated 14-03-2012 to cases prior to 2007 to be able to remove the anomalies of this period. The reason stated is that prior to 2007 NIT Srinagar conducted CAS in year 2001 and thus there was a gap of six year intervening period in between two subsequent CAS interviews.

The BOG further decided that the dates of eligibility thus recommended by the said selection committee, for each case, shall be submitted for approval to be granted by Chairman BOG, for issuance of orders.

3 GR-06, GR-07, GR-08 and GR-09 (regarding: (1) grant to promotion from date of eligibility and (2) consideration of 2nd selection Committee recommendations).

The BOG observed that these cases also require a review of the dates of effect given to the CAS up-gradations. The BOG decided that the same process as recommended in (2) above be followed for grant of CAS promotion from dates of eligibility. Thereafter, the sealed envelopes in their cases be opened by the Chairman BOG for implementation.

4 GR-10 regarding: (Counting of continuous previous Service of Mr Shabir Ahmad Sofi, Assistant Professor (PB3/GP6000 - Equivalent to Pre-revised Lecturer), rendered at NIT Srinagar EDP cell as Research Assistant and at

	<p><u>KITE Polytechnic as Lecturer).</u> The BOG did not accept the recommendation.</p>
5	<p><u>GR-11 regarding Counting of previous Adhoc Service of Dr G R Khan rendered at University of Kashmir from 01-04-1991 to 30-04-1993 for service and seniority benefits.</u></p>
	<p>With regard to this case, it is observed that counting of Adhoc Service for CAS promotion was provided in the UGC/ AICTE rules, subject to fulfillment of certain conditions. As the conditions stipulated in UGC/ AICTE rules were being fulfilled, the Faculty Grievance Committee has accordingly recommended the case. This recommendation is also consistent with the earlier BOG appointed committee in this case. The BOG thus decided to accept the recommendation of the Faculty Grievance Committee even as the MHRD representative was opposed to it.</p>
6	<p><u>GR-12 and GR-13 regarding counting of previous continuous Adhoc Service of Dr Tanveer Jalal, Associate Professor, Mathematics Department and Dr. Tabassum Ara, Associate Professor, Chemistry Department rendered at University of Kashmir.</u></p>
	<p>BOG accepted recommendations in these cases as-well since these are of similar nature as GR-11.</p>
7	<p><u>GR-14 regarding request of Dr Tanveer Jalal, Associate Prof (PB4/AGP9000) for release of increments for the teaching service rendered outside the country at Yanbu Industrial College, Kingdom of Saudi Arabia during the period from 01-10-2010 to 30-09-2012.</u></p>
	<p>The case may be brought in the next board meeting along with all the supporting documents related to the other Faculty Members who were granted increments for such teaching service/ research work done.</p>
8	<p><u>GR-15 regarding Request of Dr. M. Ashraf Shah for treating period with effect from 20-06-2011 to 03-10-2011 as active service period and release of salary for the said period.</u></p>
	<p>The BOG did not accept the recommendation.</p>
9	<p><u>GR-16 and GR-17 regarding Consideration of Cases for upgradation under 6th CPC-CAS with effect from date of eligibility (a) from AGP 6000 to 7000, (b) from AGP 7000 to 8000 and (c) from AGP 9000 to 10000.</u></p> <p>MHRD representative explained to the Board that MHRD had sought an advice of law Department in the matter. The opinion of the law department has been already conveyed to the Institute wherein it is mentioned that the matter is pending before the Supreme Court of India.</p> <p>However during deliberations it was brought to the notice of Board that these cases are relevant to the period prior to 30th April 2013 (the cut-off date fixed by MHRD for implementation of CAS promotions).</p> <p>In view of this, BOG decided that MHRD be requested to look into the matter a fresh and get legal opinion of Solicitor General of India for seeking the necessary relief, with regard to the above matter, from the</p>

	<p>Hon'ble Supreme Court, so that the Institute is in a position to address the long pending grievances of the deserving faculty. This is necessary for resolving anomalies of period prior to 30th April 2013.</p> <p>The BOG further decided that since the instant cases are similar to cases mentioned under BOG-05-(GR-02) and hence once allowed by MHRD, the cases can be treated on the analogy of (1) above and the dates of eligibility thus recommended by the said selection committee, for each case, shall be submitted for approval to be granted by Chairman BOG, for issuance of orders.</p>
	<p>10 <u>GR-18 regarding counting of service rendered abroad.</u></p> <p>The matter was discussed and the BOG did not accept the Plea of concerned Faculty Members.</p>
Item No. BOG-93/06	To consider the proposal of ACoFAR Committee for mapping of existing faculty under Four Tier system.
Resolution No. 06/93	<p>The BOG observed that RR's for 4-Tier structure have been approved by Council of NIT's and as such the proposal of any modification will require approval of the Council.</p> <p>As such the proposal needs to be submitted for consideration of the Council through its Standing Committee. During the discussions Board was informed that the earlier recruitments have been made as per qualifications prescribed in previous schemes circulated by GOI wherein recruitments have been done with M. Tech as well as B. Tech qualifications. In view of this it is therefore justified to incorporate modifications in the present RRs of 4-tier faculty structure so that a fair chance of upgradation is made available to the existing faculty with M. Tech qualifications at lower level cadres. It was also observed that NIT Srinagar has been working under disadvantageous locational and other constraints. The BOG thus resolved as under:</p> <p>The proposal be again studied by the same committee which may also explore the possibilities of obtaining feedback from faculty of other NIT's. The proposal be reframed on the basis of feedback and the said special locational and other constraints facing NIT Srinagar. Further options be included with proper weightage for candidates with M.Tech qualifications and teaching experience.</p>

Table-10.1.3j

The minutes are confirmed in the meeting of 94th Board of Governors held on June 19, 2017 at NIT Transit House, New Delhi with the addition of the sentence "**The action with regard to points 2,3,5, and 6 as contained in item No. 05/93 of BOG 93rd meeting dated 13-10-2016 be initiated only after obtaining concurrence of MHRD**".

Minutes of the 92nd meeting of Board of Governors
National Institute of Technology Srinagar, Hazratbal, J&K
held on June 03, 2016 at 03.30 p.m. in the Committee Room of the
National Institute of Technology Srinagar.

BOG-92/01	To confirm the Minutes of the 91 st Board of Governors meetings of the Institute, held on April 11, 2016 at 02.30 p.m. in the Committee Room of the National Institute of Technology Srinagar.
Resolution No. 01/92	The minutes of the 91 st meeting of the Board of Governors were confirmed with inclusion of comments received from Mr. S. P. Goyal, Joint Secretary (TEL), MHRD, Department of Secondary & Higher Education.
BOG-92/02	To record action taken report on the decisions of 91 st Board of Governors meeting, held on April 11, 2016 at 02.30 p.m. in the Committee Room of the National Institute of Technology Srinagar.
Resolution No. 02/92	Record reported.
BOG-92/03	To record report on nomination of two faculty members on the Board of Governors of the Institute as per NIT Act 2007.
Resolution No. 03/92	Record reported.
BOG-92/04	To consider the nomination of the Board of Governors on the Finance Committee as per the rules of First Statutes under the National Institute of Technology Act, 2007.
Resolution No. 04/92	Prof. Rajinder Ambardar, Professor, Metallurgical & Materials Engineering department is nominated as member on the Finance Committee from BOG members.
BOG-92/05	To consider the request of the Mr. Mohammad Farooq Mir, Assistant Librarian to fix the superannuation age in his favour as 62 years.
Resolution No. 05/92	The matter was discussed and it was noted that : a) The BOG in its 91 st meeting after considering the report of the constituted committee decided to refer the matter to MHRD for their opinion. b) However, MHRD order [F.No.5-3/2012.TS-III dated 31-01-2013 and F.No.3-4/2013-TS dated 12-07-2013 (copies enclosed)] allows granting the benefit of age of superannuation as 62 years in favour of Asstt. Librarians subject to fulfillment of qualification as prescribed by the UGC. c) As per UGC notification issued vide its order No. F.3-1/94(PS)-7 dated 22-09-2006 candidates having M.Phil. and Ph.D. are exempt from NET. Since Mr. Mohammad Farooq Mir has M.Phil. qualification and as such he is exempted from the NET qualification. In view of this, no relaxation in qualification is required in case of the candidate as he possess M.Phil. qualification. d) Mr. Farooq is therefore entitled to the benefit of superannuation of at the age of 62 years as per the mentioned MHRD order. e) MHRD may be informed of the above and necessary orders for giving the benefit to Mr Farooq be issued thereafter.
BOG-92/06	To consider the report of the Fact Finding Committee of the Institute.
Resolution No. 06/92	The report submitted by Chairman of the Committee Prof. R. Ambardar in a sealed envelope was opened in the meeting with permission of the Chair and thereafter it was

	<p>deliberated upon thoroughly. The recommendations given by the committee at page no. 18 and 19 were considered one by one and following decisions taken in respect of each recommendation:</p> <ol style="list-style-type: none"> 1. Confidence building: It was decided that interaction with students must be enhanced in a structured way and following ways be adopted for the same: The existing clubs of students be used for interaction by the administration periodically for a review of the activities and issues. This should be done atleast twice in one semester. A lunch or dinner be arranged once in each semester where students and faculty would be together. The HODs must organize an interaction with the students of each class once in a month. They may take alongwith one or more other faculty members who are not associated with that class. Saturdays must be utilized in curricular activities through clubs and departments. Sports activities should be increased. 2. The departments must publicize the procurements made or procurements under process for laboratory development and other activities in the department through the Institute website and also by a departmental newsletter, managed by students under supervision of faculty. 3. In order to attract more faculty members / officers to take up proctorial duties, the benefits for the same needs to be enhanced but simultaneously it needs to be conveyed that no staff member can decline any assignment given to him. 4. The Wardens shall submit a report of their periodic visits to the hostel and interaction held with the hostel residents to the Director every fortnight. 5. Since the class representatives are already in place, the departments should formalize interaction with these representatives and report of interaction must be kept on record. 6. The BOG observed that since the FIR is understood to be against unknown persons as such no discussion is required as this stage. 7. The evaluated answer script of the major examination must be got signed by the student after he goes through it. They must also record that he has received back the Minor exam scripts. 8. Heads of the Departments must ensure that lower semesters are taught by senior faculty members. 9. A booklet containing hostel rules and regulations and other information must be made available to every student at the time of admission in the Institute. This shall be ensured by the Dean Students Welfare. 10. The Institute must organize motivational and behavioral lectures by professional and eminent persons for the students in a structured manner under extracurricular activities.
BOG-92/07	To consider the framing of modalities for constitution of a Students Council.
Resolution No. 07/92	The BOG after detailed deliberations found that the model of Student Council at IEST Shibpur may be adopted by the Institute. However, before implementation, the model may be studied by a Committee including student nominee also for any changes

	that may be required.		
BOG-92/08	To consider the representations of the students for introduction of NCC in the Institute.		
Resolution No. 08/92	Approved. The programme details shall be worked out by the Institute for the same.		
BOG-92/09	Action taken on the decisions of the meeting held on 19-04-2016 in Delhi with student representatives		
Resolution No. 09/92	The Director, Prof. Rajat Gupta presented the action taken in respect of this item as detailed below:		
	Sl. No.	Decision	BOG order
	1	A new Committee for students Grievance Redressal which has been constituted with two external members will do the fact finding now and its Report is likely to be submitted by 15th may, 2016.	Report already submitted and considered by BOG. Orders are recorded in item no. BOG-92/06.
	2	BOG to consider the report and formation of students council and its modalities.	Considered by BOG on 03-06-2016. Orders are recorded in item no. BOG-92/07.
	3	BOG meeting likely to be held within 20th of May as per the convenience of Chairman.	BOG meeting was scheduled on 27-05-2016 but had to be deferred and was held on 03-06-2015. No orders required.
	4	Optional external evaluation for minor one on written request and irrevocable basis.	Students were informed to give option through written notice but no one opted. Record reported.
	5	Enhancement of medical facilities within 3-4 months.	Staff engagement is near finalization after advertisement and scrutiny. Equipment supply orders issued. Record reported.
	6	Prefab two hostels having 80 rooms and prefab 15 class rooms likely to be completed within 6 months.	Work is going on satisfactorily. Record reported.
	7	Some medical claims already borne by the Institute and those submitted the bills will also be reimbursed.	Reimbursement made on all claims. Record reported.
	8	Food and fruit corner in the campus to be installed.	N.I. T. issued and these facilities will be soon BOG ordered to make these

		operational.	operational by 30-06-2016.
9	Encroachment of NIT land has already been taken up, however it will be vigorously pursued with State Government.	Matter already taken up with D. C. Srinagar.	BOG advised to write to Commissioner / Secretary, Higher Education of J&K Government also.
10	All National festivals to be celebrated.	Implemented.	Record reported.
11	Demands relating to improved facilities in the hostels will be expeditiously looked into.	System fast tracked.	Record reported.
The BOG advised that periodic reviews must be made on these issues and students taken into confidence about these during interactions.			

Table-10.1.3k

Minutes of the 91st meeting of Board of Governors National Institute of Technology Srinagar, Hazratbal, J&K held on April 11, 2016 at 02.30 p.m. in the Committee Room of the National Institute of Technology Srinagar.

BOG-91/01		To confirm the Minutes of the 90 th Board of Governors meeting of the Institute, held on December 30, 2015 11.45 a.m. in the NIT Transit House, Safdarjung Enclave, New Delhi.			
Resolution No. 01/91		Confirmed with inclusion of the comments received from Mr. S. P. Goyal, Joint Secretary, MHRD, New Delhi.			
BOG-91/02		To record action taken report on the decisions of 90 th Board of Governors meeting, held on December 30, 2015 11.45 a.m. in the NIT Transit House, Safdarjung Enclave, New Delhi.			
Sl. No.	Meeting No. & Date	Agenda item No.	Resolution	Action taken by the Institute	Resolution / Comments of the BOG
1	90th 30-12-2015	10	The BOG congratulated the Institute administration and staff for having succeeded to have the external review done on time. The BOG advised to take necessary steps for implementing suggestions of the external review report.	Necessary steps have been initiated.	A quantified report of the action taken be submitted in next meeting of the BOG.

2	90th 30-12-2015	11	<p>During the presentation by Dean P&D, it was revealed that at present as per LAWDA norms the building permission is restricted to G+2 but the proposals of the Institute prepared by CPWD are for G+5 blocks. It was further informed that the Government of J&K Town Planning Department is working on the revised Master Plan of Srinagar City wherein a provision for permission for G+5 type structures is envisaged.</p> <p>Based on these facts the BOG:</p> <p>a) granted in-principal approval for the following two works as G+5 structures through CPWD subject to the permission by the concerned authorities:.</p> <ol style="list-style-type: none"> 1. Construction of Academic Block at an estimated cost Rs. 1,58,45,12,000/-. 2. Construction of Multi Facility Block at an estimated cost Rs.75,98,42,300/-. <p>b) In case the permission for G+5 proposal is not granted the proposal shall be revised in terms of the cost of estimate and resubmitted to the BWC for fresh consideration for the revised proposal.</p> <p>c) In any case, this whole proposal would be reconsidered afresh by each statutory authority of the NIT (i.e. the BWC, the FC & the BOG) upon receiving the</p>		<p>It was noted that permission for these structures has been granted for G+2 as per existing norms. The Director informed that an assurance by the concerned authorities has been given that permission for G+5 to NIT, Srinagar shall be granted very soon. It was advised that the grant of permission for G+5 from the concerned authorities needs to be pursued vigorously.</p>
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			approval of the J&K Town Planning Department to entrust G+5 type of structures.		
3	FC 28-09-2015	04	FC did not approve the request of officiating Registrar for grant of additional pay..	A report was submitted about deputation of Registrar of Institute, Dr. Firdous Ahmad Wani in the 91 st meeting of BOG dated 11-04-2015.	Dr. Firdous Ahmad Wani, Registrar who is on deputation be informed to join back the Institute immediately as the presence of a regular Registrar is essential for the smooth functioning of the Institute.
BOG-91/03		To record report on the action taken by the Chairman, BOG in having approved engagement of temporary faculty for Spring Session 2016 against the vacant faculty positions.			
Resolution No. 03/91		Report recorded. The Board was informed that the due process for such contractual appointments has been strictly adhered to. The Institute was further advised to stringently adhere to the provisions contained in Statute No. 28 of the First Statutes under the NITSER Act, 2007.			
BOG-91/04		To record report on the stoppage of sitting fee amount to the officials of Ministry / attached Institutions for attending the meetings of Board of Governors, Finance Committee and BWC etc.			
Resolution No. 04/91		Report recorded.			
BOG-91/05		To consider the recommendations of the constituted Committee to fix the superannuation age of Mr. Mohammad Farooq Mir, Assistant Librarian as 62 years.			
Resolution No. 05/91		In view of the recommendations of the committee at para (2) of their report, it was decided to refer the matter to MHRD for their opinion.			
BOG-91/06		To consider the recommendations of the constituted Committee with regard to leave entitlement to Adjunct Faculty in the Institute.			
Resolution No. 06/91		Since adjunct faculty is not a regular staff, earned leave is not admissible.			

BOG-91/07	To consider the report of the committee constituted to examine the case of Dr. G. R. Khan.
Resolution No. 07/91	Mr. S. P. Goyal, Joint Secretary, MHRD and member BOG, desired that copy of the minutes of Selection committee of his engagement in University of Kashmir may be obtained and put up at the next meeting of Board of Governors for consideration.
BOG-91/08	To consider the two orders of Hon'ble High Court of J&K in matters related to Career Advancement Scheme (CAS).
Resolution No. 08/91	The cases be pursued. However the grievances of faculty be fast tracked so that such cases do not arise or at least are minimized. It was strongly pleaded by the Institute administration that the service interests of the existing faculty needs to be protected which otherwise would lead to a non-congenial environment as the affected faculty feels disgruntled which is not a healthy situation. The BOG noted with concern that there is need to address the grievances; however, this can be done within the framework of rules only and it is essential that the Institute Administration and the faculty members appreciate that.
BOG-91/09	To consider the issues discussed in the brainstorming session held on 10-04-2016 for appropriate advice and orders.
	Item withdrawn.
BOG-91/10	To consider termination of service as Technical Resignation in favour of Prof. R. K. Wanchoo, former Director of the Institute.
Resolution No. 10/91	It was decided to refer the matter to MHRD.
BOG-91/11	To consider the minutes and recommendations of the Finance Committee made at its meeting held on 11-04-2016 at 10.30 a.m. in the Committee Room of the NIT Srinagar.
Resolution No. 11/91	The Institute was advised to place the same before the Board of Governors after the finalization and confirmation of the Minutes of the 1 st Meeting of the Finance Committee of 2016, in its next meeting.
BOG-91/12	To consider the recommendations of the Senate made at its meeting held on 08-04-2016 in the NIT Srinagar, Hazratbal Kashmir.
Resolution No. 01/91	The Institute was advised to place the same before the Board of Governors after the finalization and confirmation of the Minutes of the referred meeting of the Senate, in its next meeting.

Table-10.1.3I

Minutes of the 90th meeting of Board of Governors

National Institute of Technology Srinagar, Hazratbal, J&K

held on December 30, 2015 at 11.45 a.m. in the NIT Transit House,

Safderjung Enclave, New Delhi

BOG-90/01	To confirm the Minutes of the 89th Board of Governors meetings of the Institute, held on September 28, 2015 11.00 a.m. in the NIT Transit House, Safdarjung Enclave, New Delhi.
Resolution No. 01/90	Confirmed. The modifications incorporated in the minutes of the Finance

	Committee meeting dated 28-09-2015 shall also get included in these minutes.
BOG-90/02	To record action taken report on the decisions of 89 th Board of Governors meeting, held on September 28, 2015 11.00 a.m. in the NIT Transit House, Safdarjung Enclave, New Delhi.
Resolution No. 02/90	Report recorded alongwith the following decisions: a) In case of resolution no. 04/89 regarding Senate item 20/07 i.e. NIT Srinagar distinguished Alumni Award, it was decided that two awards shall be presented every year during the Alumni Meet and the constituted committee shall identify the awardees accordingly.
BOG-90/03	To record report on the action taken by the Director in having approved engagement of two Electricians on contractual basis in the P&D Wing of the Institute.
Resolution No. 03/90	Ratified.
BOG-90/04	To record report on the conduct of DASA 2016 by NIT Srinagar.
Resolution No. 04/90	Report recorded.
BOG-90/05	To record report on the action taken by the BOG, BOG in having approved continuation of Mr. M. M. Shawl and Mr. P. L. Saproo.
Resolution No. 05/90	Report recorded. However, the advice of IFD may be sought so that it is ensured that there is no scope for errors in calculation of monthly consolidated emoluments in such engagements.
BOG-90/06	To ratify the action taken by the Chairman, Board of Governors in having authorized the Director to constitute the Departmental Visiting Committees.
Resolution No. 06/90	Ratified.
BOG-90/07	To ratify the action taken by the Chairman, Board of Governors in having approved composition of a Committee for External Review.
Resolution No. 07/90	Ratified.
BOG-90/08	To approve the minutes of Selection Committee of the Trainee Teachers
Resolution No. 08/90	Recommendations of the Selection Committee of the Trainee Teachers are approved. Needful may be done so that the selected candidates can join IIT Delhi as Ph.D. scholars for the January 2016 session after submission of prescribed bond which has already been vetted by the Standing Counsel of the Institute. The maximum duration is 07 years which has been confirmed from IIT Delhi and included in the Bond.
BOG-90/09	To consider the report of the Committee for mapping under Restructuring of Non faculty staff
Resolution No. 09/90	The BOG noted that the proposal has been circulated to all the members as per the decision in the previous meeting. However, while no comment were received, Prof. Rather pointed out certain errors in the proposal during discussion. Chairman, BOG also observed that the Restructuring and the corresponding Mapping proposal is important requiring great care inasmuch as the structure / positions / posts proposed must take into account needs of the Institute in the foreseeable future. Further, mapping /

	deployment of the existing staff against the proposed structure / positions has to be done as per the prescribed rules ensuring at the same time that there is no or minimal possibility of any anomalies arising as a result of the exercise. It was, therefore, decided that the Director should get this proposal examined / reworked out by a small Group / Committee comprising Prof. G. M. Rather, member BOG and others. The concerned staff from Personnel Department of the Institute require to provide necessary assistance to this Committee and in fact, be actively involved in this exercise. Upon satisfying himself with the report of this Committee, the Director can put it up to the Chairman, BOG for final approval for implementing the same.
BOG-90/10	To consider the report of the External Review Committee.
Resolution No. 10/90	The BOG congratulated the Institute administration and staff for having succeeded to have the external review done on time. The BOG advised to take necessary steps for implementing suggestions of the external review report.
BOG-90/11	To consider grant of in Principle approval for construction of two new multi storied buildings as per approved Master Plan.
Resolution No. 11/90	During the presentation by Dean P&D, it was revealed that at present as per LAWDA norms the building permission is restricted to G+2 but the proposals of the Institute prepared by CPWD are for G+5 blocks. It was further informed that the Government of J&K Town Planning Department is working on the revised Master Plan of Srinagar City wherein a provision for permission for G+5 type structures is envisaged. Based on these facts the BOG: a) granted in-principal approval for the following two works as G+5 structures through CPWD subject to the permission by the concerned authorities:. 1. Construction of Academic Block at an estimated cost Rs. 1,58,45,12,000/-. 2. Construction of Multi facility Block at an estimated cost Rs.75,98,42,300/-. b) In case the permission or G+5 proposal is not granted the proposal shall be revised in terms of the cost of estimate and resubmitted to the BWC for fresh approval for the revised proposal.
BOG-90/12	To consider the report on the activities of the Innovation, Incubation and Entrepreneurship Development Centre (IIEDC).
Resolution No. 12/90	The BOG noted with appreciation the steps that have been taken by the Institute under the Centre. It was advised that the Vision and Mission statement should include Incubation very prominently. It was advised that the activities should be pursued as per the Vision and Mission statement and collaboration with similar setups in the country should be explored very effectively. Further, it was advised to publicize the activities

	<p>undertaken by this centre and a quarterly or six monthly News-letter may be printed by the centre for this purpose in addition to other mediums of publicity.</p> <p>Further BOG agreed in-principal to the proposal of setting up of an independent Incubation Centre to support the industries, entrepreneurship and start up in the following areas and advised for preparation of a DPR with help and involvement of an appropriate outside agency, if required:</p> <ol style="list-style-type: none"> i. Mechanical Engineering oriented activities ii. Chemical Engineering oriented activities iii. Civil Engineering oriented activities iv. Electronics & Comm. Engineering oriented activities v. Electrical Engineering oriented activities vi. Information Technology oriented activities
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Table-10.1.3m

Action Taken Report

To record action taken report on the decisions of Board of Governors Meeting held on 21-11-2017 in the NIT Transit House, Safderjung Enclave, New Delhi.

BOG-95/01	To confirm the minutes of the 95 th Board of Governors meeting of the Institute, held on June 19 th , 2017 in NIT Transit House, at Safdarjung Enclave, New Delhi.	
Resolution No. 01/95	Minutes Confirmed with the change that the words, 'so called' be replaced by 'as reported' in the twelfth line of the Resolution No. 05/94 of BOG-94/05. This change was sought to be made by the Chairman in view of the sentiments expressed by the then I/C Director, Prof. A. R. Dar in one of his communications. While confirming the minutes, the BOG was informed that with regard to Resolution No. 04/94 of BOG-94/04 the issues have been, by and large, addressed by the Revised final modified RRs and the recommendations of the Anomaly Committee.	No action called for.
BOG-95/02	To record action taken report on the decisions of 93 rd Board of Governors meeting, held on October 04, 2016 and Adjourned meeting on October 13, 2016 at NIT Transit House, Safdarjung Enclave, New Delhi.	
Resolution No. 02/95	Report Recorded.	No action called for.
BOG-95/03	To ratify the action taken by the Chairman, BOG in having approved enhancement of wages as per the Labour Schedule of Government of India in favour of Contractual workers engaged on compassionate basis.	
Resolution No. 03/95	Ratified.	Office Order issued.
BOG-95/04	To ratify the action taken by the Chairman, BOG in having approved extension of cut-off date for usage of CPDA of Block 2014-17 by	

	faculty members upto 31-03-2018.	
Resolution No. 04/95	Ratified.	Office Order issued.
BOG-95/05	To consider the recommendations of the Central Purchase Committee with regard to releasing of remaining 30% payment in favour of M/S New Hi-Tech Enterprises, Srinagar against supply of gold medals for convocation 2013, held for the batches from 2004-2011.	
Resolution No. 05/95	The BOG advised to refer the matter for legal opinion and take a decision accordingly.	Matter under consideration.
BOG-95/06	Adoption of communications of Vigilance Section of Department of Higher Education, MHRD, received by the Institute.	
Resolution No. 06/95	Adopted	No action called for.
BOG-95/07	To consider the minutes of 8 th , 9 th and 10 th meetings of NIT Council held on 25-09-2014, 01-10-2015 and 26-05-2017 respectively.	
Resolution No. 07/95	Report Recorded. The minutes of 10 th meeting of NIT Council was tabled in the meeting.	No action called for.
BOG-95/08	To adopt amendments in the First Statutes of the National Institutes of Technology (NITs).	
Resolution No. 08/95	Adopted	No action called for.
BOG-95/09	To adopt the recommendations of the Anomaly Committee on new Recruitment Rules for Faculty in NITs and IEST regarding promotion of existing Assistant Professors to Associate Professors and mapping of existing Associate Professors with AGP of Rs.9,000/- to Rs. 9,500/- and Professors with AGP of Rs. 10,000/- to Rs.10,500/- communicated vide F. No. 33-9/2011-TS.III, dated 6 th October, 2017 and F. No. 33-9/2011-TS.III, dated 17 th November, 2017	
Resolution No. 09/95	Adopted. The communications vide F.No. 33-9/2011-TS.III, dated 17 th November, 2017 was tabled in the meeting.	Exercise under process.
BOG-95/10	To consider the recommendations of the Finance Committee made at its meeting held on 04-10-2016 at 10.30 a.m. at NIT Transit House, Safdarjung Enclave, New Delhi.	
Resolution No. 10/95	The recommendations of the Finance Committee are Approved	No action called for.
BOG-95/11	To approve the recommendations of the Selection Committee for appointment of Registrar for NIT Srinagar.	
Resolution No. 11/95	The recommendations of the Selection Committee for selection of Registrar for NIT Srinagar are Accepted and Approved. The offer letter may first be issued to the incumbent at S.No. 1, i.e., Dr. Nisar Ahmad Mir, at the earliest as per the recommendations of the Selection Committee. The necessary contract may be signed with the selected candidate.	Offer Letter issued. Dr. Nisar Ahmad Mir has joined as Registrar on 24.01.2018.

BOG-95/12	To consider the request of existing Assistant Professors for promotion as Associate Professors as and when they complete their Ph.D.	
Resolution No.12/95	It was noted that all the above faculty members have teaching experience of more than 09 years and are already pursuing their Ph.D. programme. The BOG was of the view that the faculty members are getting covered for upgradations under the recommendations of the Anomaly Committee on new Recruitment Rules communicated vide F. No. 33-9/2011-TS.III, dated 6 th October, 2017, as a onetime measure. However, it was decided to get a clarification from MHRD to this effect.	Matter referred to Ministry vide letter No.NIT/B&D/2017/2003/.Dated 06-12-2017
BOG-95/13	To approve for correcting and re-fixing the dates of eligibility of some of the Faculty members of NIT Srinagar.	
Resolution No.13/95	It was decided to bring the new revealed facts before the Board of Governors for allowing to carry out necessary exercise for implementing the selection committee recommendations, under rules, with regard to all cases in order to give effect to upgradations from the dates of eligibility. Accordingly the item was included in BOG agenda which was circulated to all members. A letter No. 16-7/2017-TS.III dated 20 th November, 2017 was received from MHRD on Nov 21, 2017 in which it was suggested to drop the item from the BOG agenda and instead refer the same to MHRD for their concurrence as decided earlier. However, the item was taken up in the BOG to inform the BOG about the new information that had got revealed about the subject. The BOG discussed the issue and concluded that the matter, with complete details of new revelations, be sent to the MHRD for their concurrence with a request to convey the same within the shortest possible time. Quick resolution of these faculty grievances will help the institute to progress the recruitment of new faculty as well as mapping/upgradation of the existing faculty to avoid any further anomalies. Regarding other faculty grievances presented and discussed in 94 th BOG meeting, seeking of concurrence from MHRD for their consequent redressal stands as decided by BOG for which concurrence as envisaged will also be sought.	Matter referred to MHRD Vide letter No. NITs/PD/17/4754 dated:25-11-2017, followed by another reminder No.NIT/DO/18/4955 dated:15-01-2018. The decision from MHRD is yet awaited.
BOG-95/14	To consider the recommendations of the Finance Committee made at its meeting held on 21-11-2017 at 10.30 a.m. at NIT Transit House, Safderjung Enclave, New Delhi.	
Resolution No. 14/95	Recommendations of the Finance Committee were circulated amongst the members through mail on 25 th November 2017. No comments were received.	No action called for.

Table-10.1.3n

To record action taken report on the decisions of 93rd Board of Governors meeting, held on October 04, 2016 and Adjourned meeting on October 13, 2016 at NIT Transit House, Safdarjung Enclave, New Delhi.

BOG-93/01	To confirm the Minutes of the 92 nd Board of Governors meetings of the Institute, held on June 03, 2016 at 03.30 p.m. in the Committee Room of the National Institute of Technology Srinagar.	
Resolution No. 01/93	Confirmed.	No action called for.
Special item	To consider the resumption of the class work for autumn session	
BOG-93/02	2016 in the wake of situation in the Kashmir valley.	
Resolution No. 02/93	<p>The BOG deliberated on the issue of resumption of class work for autumn-2016 semesters. While taking into account all the options / suggestions put-forth by the members, students, parents, it was decided as under:</p> <p>In case the situation becomes conducive, the class work of Autumn-2016 semester will be resumed on 31st October, 2016 and continued till December 31st, 2016. The examinations for these semesters if not possible to be held at the end of session may be held in February 2017.</p> <p>In case class work is not possible to be resumed on 31 October 2016, the same will then be resumed w.e.f. February 01, 2017 and concluded by 15th April, 2017.</p> <p>The Spring 2017 semesters will start immediately thereafter and shall be concluded by 30th June, 2017.</p> <p>All Saturdays and holidays for these semesters (Autumn-2016& Spring-2017) will be converted into working days.</p> <p>In case class work resumes only from February 01, 2017, the intervening period will be utilized by the students for practical training, project works etc.</p> <p>The faculty of the institute will be available to the students through e-mail / phone / institute website for guiding them and offering clarification etc. for their assigned subjects.</p> <p>Further instructions and information from time to time will be conveyed through institute website.</p>	Implemented.
BOG-93/03	To record action taken report on the decisions of 92 nd Board of Governors meeting, held on June 03, 2016 at 03.30 p.m. in the Committee Room of the National Institute of Technology Srinagar.	
Resolution No. 03/93	Report recorded.	No action called for.
BOG-93/04	To record report regarding the creation of Delhi Chapter of NIT Srinagar Alumni.	
Resolution No. 04/93	Report recorded.	No action called for.
BOG-93/05	To consider recommendation of Grievance Committee for faculty.	

and BOG-93/06	And To consider the proposal of ACoFAR Committee for mapping of existing faculty under Four Tier system.	
Resolution Nos. 05/93 And 06/93	The items were deferred.	These items were placed in adjourned meeting held on 13-10-2016.
BOG-93/07	To consider providing of Ph.D. scholarship to registered DRFs / SRFs of the Institute upto a maximum period of 05 years as per latest MHRD order.	
Resolution No. 07/93	Approved.	Orders issued and implemented.
BOG-93/08	To consider : i) Request of Dr. Firdous Ahmad Wani, (presently on deputation to Jamia Hamdard, New Delhi) for grant of extension of the deputation in his favour till December 2017 ii) To ratify the action taken by the Chairman, Board of Governors in having granted extension in joining in favour of Dr. Firdous A. Wani, Registrar by two months.	
Resolution No. 08/93	Extension in deputation not Approved. Ratified. Dr. Wani be informed about the decision to join back the Institute.	Dr. Wani was conveyed about the decision of the BOG. However, he opted for premature retirement from the Institute.
BOG-93/09	To consider the Progress Report regarding Modernization of National Institute of Technology Srinagar against Rs. 100 Crore grant.	
Resolution No. 09/93	After discussion, it was observed that the grant of 100 crores has not been received by the Institute as yet. BOG advised to complete all the preparatory works for executing the projects and tenders etc. can be floated once funds are received.	So far we have utilized 9.2 crores out of this fund under the 1st phase. Some of the tenders are at last

		stage of processing. Works for executing the projects and tenders etc are going on.
BOG-93/10	Report of DASA 2016 for information.	
Resolution No. 10/93	Report recorded. The BOG congratulated and complimented NIT Srinagar for the smooth and successful completion of DASA 2016 process.	No action called for. Felicitations have been conveyed.

Table-10.1.3o

Adjourned Meeting Dated 13-10-2017

Item No. BOG-93/05	To consider recommendation of Grievance Committee for faculty.	
Resolution No. 05/93	A power-point presentation was made by the two internal members of the Grievance Committee who were specially called for the meeting. After this, detailed discussions were held on each of the recommendations of the Faculty Grievance Committee and the following was resolved:	
	1. Grievance listed at GR-01 (regarding extending the benefit of 5th CPC-CAS promotions to the faculty members from the due date of eligibility notionally without any financial benefit). The matter of fixation of date of eligibility in respect of Dr. I K Pandita, Dr R. Ambardar, Dr M. Mushtaq and Dr G A Harmann, was brought forth to bring parity with three professors whose date of eligibility was fixed vide order no. 93 of 2013 dated 25-04-2013 and who had been promoted earlier as Professors under 5 th CPC in Dec. 2007 through open entry. The Board of Governors (BOG) observed that an order had been issued vide no. 93 of 2013 dated 25-04-2013 in favour of three professors for their placement as professors under CAS. However the supporting	Case is returned to Grievance Committee, its report is awaited

	<p>documents on the basis of which BOG issued above order, are not placed. Therefore the BOG desires that the case be returned to Faculty Grievance Committee to re-examine it in light of all supporting documents & come out with fresh recommendations.</p>	
	<p>2. Grievances listed at GR-02, GR-03, GR-04 and GR-05 (regarding extending the benefit of CAS promotions to the faculty members from the due date of eligibility notionally without any financial benefit). The BOG examined the provision 4(q) of MHRD circular issued vide F. No. 33-7/2011-TS.III; dated 14-03-2012, which provides for the arrangement in the cases where CAS interviews were not conducted for three (03) years or more and which reads as under: <i>"All Institutes shall strive to conduct annual selection processes regularly. In case of Institutes that have not conducted CAS interviews for 3 years or more, Selection Committees may, as a onetime measure, examine scholastic contribution of internal candidates made after the last interview and recommend a salary and AGP they would have earned now, had the Selection Committee met at the appropriate time".</i> T The BOG observed that the selection committees in the cases of Faculty members mentioned under BOG-05-(GR-02 to GR-05) have not carried out the exercise as mentioned in previous paragraph. As the CAS was held in 2007 & thereafter it was conducted in 2013 only, therefore BOG observed that the above mentioned provision 4(q) of MHRD circular may be used. This will call for constitution of Selection Committee as per statutory provisions</p>	<p>The recommendations of the Scrutiny and Selection Committees with regard to dates of eligibility for CAS upgradations had not been made available to the Grievance Committee. After examining the reports of internal scrutiny committee and recommendations of selection committees, following was observed: (a) Internal scrutiny committee has correctly recorded the dates of eligibility for CAS upgradations and the same had been placed before the selection committees. (b) Selection committees have given the recommendations for CAS promotions / upgradations as 'UNDER RULES' from effective dates. In light of above, it was decided to put the new facts before the Board of Governors again for their consideration and approval for allowing correcting and refixing dates of eligibility of faculty members.</p>

	<p>and relevant MHRD circulars. ,</p> <p>The representative of MHRD informed that the term of visitor nominees has already expired. Therefore Board decided that MHRD may be asked to expedite the matter and issue the valid list of visitor nominees.</p> <p>In a similar matter, MHRD representative has stated that CAS cannot be done at this point in time. However it was brought to the notice of BOG that in all these cases one time CAS process, as desired by MHRD vide communication F. No. 33-7/2011-TS.III; dated 14-03-2012, stands already completed and orders issued way back in 2013 as these cases belong to the period prior to 30th April 2013 and only date of eligibility needs to be refixed by selection committee.</p> <p>Board decided that MHRD may also be requested to allow application of provision 4(q) of MHRD circular issued vide F. No. 33-7/2011-TS.III; dated 14-03-2012 to cases prior to 2007 to be able to remove the anomalies of this period. The reason stated is that prior to 2007 NIT Srinagar conducted CAS in year 2001 and thus there was a gap of six year intervening period in between two subsequent CAS interviews.</p> <p>The BOG further decided that the dates of eligibility thus recommended by the said selection committee, for each case, shall be submitted for approval to be granted by Chairman BOG, for issuance of orders.</p>	
3	<p><u>GR-06, GR-07, GR-08 and GR-09</u> (regarding: (1) grant to promotion from date of eligibility and (2) consideration of 2nd selection Committee recommendations).</p> <p>The BOG observed that these cases also require a review of the dates of effect</p>	<p>The recommendations of the Scrutiny and Selection Committees with regard to dates of eligibility for CAS upgradations had not been made available to the Grievance Committee. After examining the reports of internal scrutiny</p>

	<p>given to the CAS up-gradations. The BOG decided that the same process as recommended in (2) above be followed for grant of CAS promotion from dates of eligibility. Thereafter, the sealed envelopes in their cases be opened by the Chairman BOG for implementation.</p>	<p>committee and recommendations of selection committees, following was observed: (a) Internal scrutiny committee has correctly recorded the dates of eligibility for CAS upgradations and the same had been placed before the selection committees. (b) Selection committees have given the recommendations for CAS promotions / upgradations as 'UNDER RULES' from effective dates. In light of above, it was decided to put the new facts before the Board of Governors again for their consideration and approval for allowing correcting and refixing dates of eligibility of faculty members.</p>
	<p>4 GR-10 regarding: (Counting of continuous previous Service of Mr Shabir Ahmad Sofi, Assistant Professor (PB3/GP6000 - Equivalent to Pre-revised Lecturer), rendered at NIT Srinagar EDP cell as Research Assistant and at KITE Polytechnic as Lecturer). The BOG did not accept the recommendation.</p>	<p>No action called for.</p>
	<p>5 GR-11 regarding Counting of previous Adhoc Service of Dr G R Khan rendered at University of Kashmir from 01-04-1991 to 30-04-1993 for service and seniority benefits. With regard to this case, it is observed that counting of Adhoc Service for CAS promotion was provided in the UGC/AICTE rules, subject to fulfillment of certain conditions. As the conditions stipulated in UGC/ AICTE rules were being fulfilled, the Faculty Grievance Committee has accordingly recommended the case. This recommendation is also consistent with</p>	<p>Concurrence of MHRD being sought.</p>

		the earlier BOG appointed committee in this case. The BOG thus decided to accept the recommendation of the Faculty Grievance Committee even as the MHRD representative was opposed to it.	
	6	<p>GR-12 and GR-13 regarding counting of previous continuous Adhoc Service of Dr Tanveer Jalal, Associate Professor, Mathematics Department and Dr. Tabassum Ara, Associate Professor, Chemistry Department rendered at University of Kashmir.</p> <p>BOG accepted recommendations in these cases as-well since these are of similar nature as GR-11.</p>	Concurrence of MHRD is being sought.
	7	<p>GR-14 regarding request of Dr Tanveer Jalal, Associate Prof (PB4/AGP9000) for release of increments for the teaching service rendered outside the country at Yanbu Industrial College, Kingdom of Saudi Arabia during the period from 01-10-2010 to 30-09-2012.</p> <p>The case may be brought in the next board meeting along with all the supporting documents related to the other Faculty Members who were granted increments for such teaching service/ research work done.</p>	Item will be put up in the next BOG meeting.
	8	<p>GR-15 regarding Request of Dr. M. Ashraf Shah for treating period with effect from 20-06-2011 to 03-10-2011 as active service period and release of salary for the said period.</p> <p>The BOG did not accept the recommendation.</p>	No action called for.
	9	<p>GR-16 and GR-17 regarding Consideration of Cases for upgradation under 6th CPC-CAS with effect from date of eligibility (a) from AGP 6000 to 7000, (b) from AGP 7000 to 8000 and (c) from AGP 9000 to 10000.</p> <p>MHRD representative explained to the</p>	The recommendations of the Scrutiny and Selection Committees with regard to dates of eligibility for CAS upgradations had not been made available to the Grievance Committee. After examining the reports of internal scrutiny

	<p>Board that MHRD had sought an advice of law Department in the matter. The opinion of the law department has been already conveyed to the Institute wherein it is mentioned that the matter is pending before the Supreme Court of India.</p> <p>However during deliberations it was brought to the notice of Board that these cases are relevant to the period prior to 30th April 2013 (the cut-off date fixed by MHRD for implementation of CAS promotions).</p> <p>In view of this, BOG decided that MHRD be requested to look into the matter a fresh and get legal opinion of Solicitor General of India for seeking the necessary relief, with regard to the above matter, from the Hon'ble Supreme Court, so that the Institute is in a position to address the long pending grievances of the deserving faculty. This is necessary for resolving anomalies of period prior to 30th April 2013.</p> <p>The BOG further decided that since the instant cases are similar to cases mentioned under BOG-05-(GR-02) and hence once allowed by MHRD, the cases can be treated on the analogy of (1) above and the dates of eligibility thus recommended by the said selection committee, for each case, shall be submitted for approval to be granted by Chairman BOG, for issuance of orders.</p>	<p>committee and recommendations of selection committees, following was observed:</p> <p>(a) Internal scrutiny committee has correctly recorded the dates of eligibility for CAS upgradations and the same had been placed before the selection committees.</p> <p>(b) Selection committees have given the recommendations for CAS promotions / upgradations as 'UNDER RULES' from effective dates.</p> <p>In light of above, it was decided to put the new facts before the Board of Governors again for their consideration and approval for allowing correcting and refixing dates of eligibility of faculty members.</p>
	<p>10 <u>GR-18 regarding counting of service rendered abroad.</u></p> <p>The matter was discussed and the BOG did not accept the Plea of concerned Faculty Members.</p>	<p>No action called for.</p>
Item No. BOG-93/06	To consider the proposal of ACoFAR Committee for mapping of existing faculty under Four Tier system.	
Resolution	The BOG observed that RR's for 4-Tier	In view of final revised RR's no

No. 06/93	<p>structure have been approved by Council of NIT's and as such the proposal of any modification will require approval of the Council.</p> <p>As such the proposal needs to be submitted for consideration of the Council through its Standing Committee. During the discussions Board was informed that the earlier recruitments have been made as per qualifications prescribed in previous schemes circulated by GOI wherein recruitments have been done with M. Tech as well as B. Tech qualifications. In view of this it is therefore justified to incorporate modifications in the present RRs of 4-tier faculty structure so that a fair chance of upgradation is made available to the existing faculty with M. Tech qualifications at lower level cadres. It was also observed that NIT Srinagar has been working under disadvantageous locational and other constraints. The BOG thus resolved as under:</p> <p>The proposal be again studied by the same committee which may also explore the possibilities of obtaining feedback from faculty of other NIT's. The proposal be reframed on the basis of feedback and the said special locational and other constraints facing NIT Srinagar. Further options be included with proper weightage for candidates with M.Tech qualifications and teaching experience.</p>	action called for.
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Table-10.1.3p

To record action taken report on the decisions of 92nd Board of Governors meeting, held on June 03, 2016 at 03.30 p.m. in the Committee Room of the National Institute of Technology Srinagar.

BOG-92/01	To confirm the Minutes of the 91 st Board of Governors meetings of the Institute, held on April 11, 2016 at 02.30 p.m. in the Committee Room of the National Institute of Technology Srinagar.	
Resolution No. 01/92	The minutes of the 91 st meeting of the Board of Governors were confirmed with inclusion of comments received from Mr. S. P. Goyal, Joint Secretary (TEL), MHRD, Department	Needful done.

	of Secondary & Higher Education.	
BOG-92/02	To record action taken report on the decisions of 91st Board of Governors meeting, held on April 11, 2016 at 02.30 p.m. in the Committee Room of the National Institute of Technology Srinagar.	
Resolution No. 02/92	Record reported.	No action called for.
BOG-92/03	To record report on nomination of two faculty members on the Board of Governors of the Institute as per NIT Act 2007.	
Resolution No. 03/92	Record reported.	No action called for.
BOG-92/04	To consider the nomination of the Board of Governors on the Finance Committee as per the rules of First Statutes under the National Institute of Technology Act, 2007.	
Resolution No. 04/92	Prof. Rajinder Ambardar, Professor, Metallurgical & Materials Engineering department is nominated as member on the Finance Committee from BOG members.	Orders issued.
BOG-92/05	To consider the request of the Mr. Mohammad Farooq Mir, Assistant Librarian to fix the superannuation age in his favour as 62 years.	
Resolution No. 05/92	<p>The matter was discussed and it was noted that :</p> <p>a) The BOG in its 91st meeting after considering the report of the constituted committee decided to refer the matter to MHRD for their opinion.</p> <p>b) However, MHRD order [F.No.5-3/2012.TS-III dated 31-01-2013 and F.No.3-4/2013-TS dated 12-07-2013 (copies enclosed)] allows granting the benefit of age of superannuation as 62 years in favour of Asstt. Librarians subject to fulfillment of qualification as prescribed by the UGC.</p> <p>c) As per UGC notification issued vide its order No. F.3-1/94(PS)-7 dated 22-09-2006 candidates having M.Phil. and Ph.D. are exempt from NET. Since Mr. Mohammad Farooq Mir has M.Phil. qualification and as such he is exempted from the NET qualification. In view of this, no relaxation in qualification is required in case of the candidate as he possess M.Phil. qualification.</p> <p>d) Mr. Farooq is therefore entitled to the benefit of superannuation of at the age of 62 years as per the mentioned MHRD order.</p> <p>e) MHRD may be informed of the above and necessary orders for giving the benefit to Mr Farooq be issued thereafter.</p>	

BOG-92/06	To consider the report of the Fact Finding Committee of the Institute.	
Resolution No. 06/92	<p>The report submitted by Chairman of the Committee Prof. R. Ambarder in a sealed envelope was opened in the meeting with permission of the Chair and thereafter it was deliberated upon thoroughly. The recommendations given by the committee at page no. 18 and 19 were considered one by one and following decisions taken in respect of each recommendation:</p> <ol style="list-style-type: none"> 1. Confidence building: It was decided that interaction with students must be enhanced in a structured way and following ways be adopted for the same: The existing clubs of students be used for interaction by the administration periodically for a review of the activities and issues. This should be done atleast twice in one semester. A lunch or dinner be arranged once in each semester where students and faculty would be together. The HODs must organize an interaction with the students of each class once in a month. They may take alongwith one or more other faculty members who are not associated with that class. Saturdays must be utilized in curricular activities through clubs and departments. Sports activities should be increased. 2. The departments must publicize the procurements made or procurements under process for laboratory development and other activities in the department through the Institute website and also by a departmental newsletter, managed by students under supervision of faculty. 3. In order to attract more faculty members / officers to take up proctorial duties, the benefits for the same needs to be enhanced but simultaneously it needs to be conveyed that no staff member can decline any assignment given to him. 4. The Wardens shall submit a report of their periodic visits to the hostel and interaction held with the hostel residents to the Director every fortnight. 5. Since the class representatives are already in place, the departments should formalize interaction with these representatives and report of interaction must be kept on record. 6. The BOG observed that since the FIR is understood to be against unknown persons as such no discussion is required as this stage. 7. The evaluated answer script of the major examination 	It was planned to implement these decisions from autumn 2016 session which has unfortunately got delayed due to the situation in the valley.

	<p>must be got signed by the student after he goes through it. They must also record that he has received back the Minor exam scripts.</p> <p>8. Heads of the Departments must ensure that lower semesters are taught by senior faculty members.</p> <p>9. A booklet containing hostel rules and regulations and other information must be made available to every student at the time of admission in the Institute. This shall be ensured by the Dean Students Welfare.</p> <p>10. The Institute must organize motivational and behavioral lectures by professional and eminent persons for the students in a structured manner under extracurricular activities.</p>									
BOG-92/07	To consider the framing of modalities for constitution of a Students Council.									
Resolution No. 07/92	The BOG after detailed deliberations found that the model of Student Council at IEST Shibpur may be adopted by the Institute. However, before implementation, the model may be studied by a Committee including student nominee also for any changes that may be required.									
BOG-92/08	To consider the representations of the students for introduction of NCC in the Institute.									
Resolution No. 08/92	Approved. The programme details shall be worked out by the Institute for the same.									
BOG-92/09	Action taken on the decisions of the meeting held on 19-04-2016 in Delhi with student representatives									
Resolution No. 09/92	<p>The Director, Prof. Rajat Gupta presented the action taken in respect of this item as detailed below:</p> <table border="1"> <thead> <tr> <th>S.No.</th> <th>Decision</th> <th>Action taken</th> <th>BOG order</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>A new Committee for students Grievance Redressal which has been constituted with two external members will do the fact finding now and its Report is likely to be submitted by 15th may, 2016.</td> <td>Report already submitted and considered by BOG.</td> <td>Orders are recorded in item no. BOG-92/06.</td> </tr> </tbody> </table>	S.No.	Decision	Action taken	BOG order	1	A new Committee for students Grievance Redressal which has been constituted with two external members will do the fact finding now and its Report is likely to be submitted by 15th may, 2016.	Report already submitted and considered by BOG.	Orders are recorded in item no. BOG-92/06.	Action initiated / completed as per the BOG orders.
S.No.	Decision	Action taken	BOG order							
1	A new Committee for students Grievance Redressal which has been constituted with two external members will do the fact finding now and its Report is likely to be submitted by 15th may, 2016.	Report already submitted and considered by BOG.	Orders are recorded in item no. BOG-92/06.							

2	BOG to consider the report and formation of students council and its modalities.	Considered by BOG on 03-06-2016.	Orders are recorded in item no. BOG-92/07.
3	BOG meeting likely to be held within 20th of May as per the convenience of Chairman.	BOG meeting was scheduled on 27-05-2016 but had to be deferred and was held on 03-06-2016.	No orders required.
4	Optional external evaluation for minor one on written request and irrevocable basis.	Students were informed to give option through written notice but no one opted.	Record reported.
5	Enhancement of medical facilities within 3-4 months.	Staff engagement is near finalization after advertisement and scrutiny. Equipment supply orders issued.	Record reported.
6	Prefab two hostels having 80 rooms and prefab 15 class rooms likely to be completed within 6 months.	Work is going on satisfactorily.	Record reported.
7	Some medical claims already borne by the Institute and those submitted the bills will also be reimbursed.	Reimbursement made on all claims.	Record reported.

8	Food and fruit corner in the campus to be installed.	N.I. T. issued and these facilities will be soon operational.	BOG ordered to make these operational by 30-06-2016.
9	Encroachment of NIT land has already been taken up, however it will be vigorously pursued with State Government.	Matter already taken up with D. C. Srinagar.	BOG advised to write to Commissioner / Secretary, Higher Education of J&K Government also.
10	All National festivals to be celebrated.	Implemented.	Record reported.
11	Demands relating to improved facilities in the hostels will be expeditiously looked into.	System fast tracked.	Record reported.
The BOG advised that periodic reviews must be made on these issues and students taken into confidence about these during interactions.			

Table-10.1.3q

To record action taken report on the decisions of 91st Board of Governors meeting, held on April 11, 2016 at 02.30 p.m. in the Committee Room of the National Institute of Technology Srinagar.

BOG-91/01	To confirm the Minutes of the 90 th Board of Governors meeting of the Institute, held on December 30, 2015 11.45 a.m. in the NIT Transit House, Safdarjung Enclave, New Delhi.	
Resolution No. 01/91	Confirmed with inclusion of the comments received from Mr. S. P. Goyal, Joint Secretary, MHRD, New Delhi.	No action called for.
BOG-91/02	To record action taken report on the decisions of 90 th Board of Governors meeting, held on December 30, 2015 11.45 a.m. in the NIT Transit House, Safdarjung Enclave, New Delhi.	
Resolution No. 02/91	Record reported. The following is instructed: 1. A quantified report of the action taken be submitted in next meeting of BOG in case of resolution no. 10/90.	1. To be placed on the table.

	<p>2. In case of item no. BOG-90/11, it was noted that permission for these structures has been granted as G+2 as per existing norms. However the permission for G+5 to NIT Srinagar has been assured. It was thus advised that the grant of permission as G+5 from the concerned authority needs to be pursued vigorously.</p> <p>3. Mr. Firdous Ahmad Wani, Registrar who is on deputation be informed to join back the Institute as the regular Registrar availability is very essential given the work load of the post.</p>	<p>2. The Director met Hon'ble Chief Minister, J&K regarding the issue who assured to expedite the matter for grant of approval.</p> <p>3. Will be intimated of the decision after confirmation of minutes of 91st meeting.</p>
BOG-91/03	To record report on the action taken by the Chairman, BOG in having approved engagement of temporary faculty for Spring Session 2016 against the vacant faculty positions.	No action called for.
Resolution No. 03/91	Report recorded.	
BOG-91/04	To record report on the stoppage of sitting fee amount to the officials of Ministry / attached Institutions for attending the meetings of Board of Governors, Finance Committee and BWC etc.	
Resolution No. 04/91	Report recorded.	No action called for.
BOG-91/05	To consider the recommendations of the constituted Committee to fix the superannuation age of Mr. Mohammad Farooq Mir, Assistant Librarian as 62 years.	
Resolution No. 05/91	In view of the recommendations of the committee at para (2) of their report, it was decided to refer the matter to MHRD for their opinion.	Matter is resubmitted to BOG in view of the fresh representation of the person and orders of Chairman, BOG on it.
BOG-91/06	To consider the recommendations of the constituted Committee with regard to leave entitlement to Adjunct Faculty in the Institute.	
Resolution No. 06/91	Since adjunct faculty is not a regular staff, earned leave is not admissible.	Notified for needful.
BOG-91/07	To consider the report of the committee constituted to examine the case of Dr. G. R. Khan.	
Resolution No. 07/91	Mr. S. P. Goyal, Joint Secretary, MHRD and member BOG, desired that copy of the minutes of Selection committee of his engagement in University of Kashmir may be obtained and put up at the next meeting of Board of Governors for	University of Kashmir is being approached.

	approval of the case.	
BOG-91/08	To consider the two orders of Hon'ble High Court of J&K in matters related to Career Advancement Scheme (CAS).	
Resolution No. 08/91	The cases be pursued. However the grievances of faculty be fast tracked so that such cases do not arise or at least are minimized. It was strongly pleaded by the Institute administration that the service interests of the existing faculty needs to be protected which otherwise would lead to a non-congenial environment as the affected faculty feels disgruntled which is not a healthy situation. The BOG noted with concern that there is need to address the grievances within the frame work of rules so that the faculty morale is boosted which is very essential for the development of the Institute.	The Grievance Committee for faculty has met twice recently and is scheduled again in June 2016 to give its final report.
BOG-91/09	To consider the issues discussed in the brain storming session held on 10-04-2016 for appropriate advice and orders.	No action called for.
	Item withdrawn.	
BOG-91/10	To consider termination of service as Technical Resignation in favour of Prof. R. K. Wanchoo, former Director of the Institute.	
Resolution No. 10/91	It was decided to refer the case to MHRD.	Case will be referred to MHRD after confirmation of the minutes of 91 st meeting.
BOG-91/11	To consider the minutes and recommendations of the Finance Committee made at its meeting held on 11-04-2016 at 10.30 a.m. in the Committee Room of the NIT Srinagar.	
Resolution No. 11/91	Record reported on the minutes and the recommendations are approved.	No action called for.
BOG-91/12	To consider the recommendations of the Senate made at its meeting held on 08-04-2016 in the NIT Srinagar, Hazratbal Kashmir.	
Resolution No. 01/91	Record reported on the minutes of the Senate meeting. For granting of PDF, modalities from the IITs may be obtained and put up in the next BOG meeting for approval.	The details from IITs have been sought and shall be placed in next meeting of BOG.

Table-10.1.3r

To record action taken report on the decisions of 90th Board of Governors meeting, held on December 30, 2015 11.45 a.m. in the NIT Transit House, Safdarjung Enclave, New Delhi.

BOG-90/01	To confirm the Minutes of the 89th Board of Governors meetings of the Institute, held on September 28, 2015 11.00 a.m. in the NIT Transit House, Safdarjung Enclave, New Delhi.	
Resolution No. 01/90	Confirmed. The modifications incorporated in the minutes of the Finance Committee meeting dated 28-09-2015 shall also get included in these minutes.	Needful done.
BOG-90/02	To record action taken report on the decisions of 89 th Board of Governors meeting, held on September 28, 2015 11.00 a.m. in the NIT Transit House, Safdarjung Enclave, New Delhi	
Resolution No. 02/90	Report recorded alongwith the following decisions: In case of resolution no. 04/89 regarding Senate item 20/07 i.e. NIT Srinagar distinguished Alumni Award, it was decided that two awards shall be presented every year during the Alumni Meet and the constituted committee shall identify the awardees accordingly.	Orders noted.
BOG-90/03	To record report on the action taken by the Director in having approved engagement of two Electricians on contractual basis in the P&D Wing of the Institute.	
Resolution No. 03/90	Ratified.	No action called for.
BOG-90/04	To record report on the conduct of DASA 2016 by NIT Srinagar.	
Resolution No. 04/90	Report recorded.	No action called for.
BOG-90/05	To record report on the action taken by the BOG, BOG in having approved continuation of Mr. M. M. Shawl and Mr. P. L. Saproo.	
Resolution No. 05/90	Report recorded. However, the advice of IFD may be sought so that it is ensured that there is no scope for errors in calculation of monthly consolidated emoluments in such engagements.	Order noted.
BOG-90/06	To ratify the action taken by the Chairman, Board of Governors in having authorized the Director to constitute the Departmental Visiting Committees.	
Resolution No. 06/90	Ratified.	No action called for.
BOG-90/07	To ratify the action taken by the Chairman, Board of Governors in having approved composition of a Committee for External Review.	
Resolution	Ratified.	No action called for.

No. 07/90		
BOG-90/08	To approve the minutes of Selection Committee of the Trainee Teachers	
Resolution No. 08/90	Recommendations of the Selection Committee of the Trainee Teachers are approved. Needful may be done so that the selected candidates can join IIT Delhi as Ph.D. scholars for the January 2016 session after submission of prescribed bond which has already been vetted by the Standing Counsel of the Institute. The maximum duration is 07 years which has been confirmed from IIT Delhi and included in the Bond.	Needful done. 08 Trainee Teachers have joined IIT Delhi w.e.f. January 2016, after completion of the formalities.
BOG-90/09	To consider the report of the Committee for mapping under Restructuring of Non faculty staff	
Resolution No. 09/90	The BOG noted that the proposal has been circulated to all the members as per the decision in the previous meeting. However, while no comment were received, Prof. Rather pointed out certain errors in the proposal during discussion. Chairman, BOG also observed that the Restructuring and the corresponding Mapping proposal is important requiring great care inasmuch as the structure / positions / posts proposed must take into account needs of the Institute in the foreseeable future. Further, mapping / deployment of the existing staff against the proposed structure / positions has to be done as per the prescribed rules ensuring at the same time that there is no or minimal possibility of any anomalies arising as a result of the exercise. It was, therefore, decided that the Director should get this proposal examined / reworked out by a small Group / Committee comprising Prof. G. M. Rather, member BOG and others. The concerned staff from Personnel Department of the Institute require to provide necessary assistance to this Committee and in fact, be actively involved in this exercise. Upon satisfying himself with the report of this Committee, the Director can put it up to the Chairman, BOG for final approval for implementing the same.	The proposal alongwith the report of the Committee has been approved by the Chairman, BOG and implemented accordingly.
BOG-90/10	To consider the report of the External Review Committee.	
Resolution No. 10/90	The BOG congratulated the Institute administration and staff for having succeeded to have the external review done on time. The BOG advised to take necessary steps for implementing suggestions of the external review report.	Necessary steps have been initiated.
BOG-90/11	To consider grant of in Principle approval for construction of two new multi storied buildings as per approved Master Plan.	
Resolution No. 11/90	During the presentation by Dean P&D, it was revealed that at present as per LAWDA norms the building permission is restricted to G+2 but the proposals of the Institute prepared	LAWDA has granted permission for G+2 structures at present

	<p>by CPWD are for G+5 blocks. It was further informed that the Government of J&K Town Planning Department is working on the revised Master Plan of Srinagar City wherein a provision for permission for G+5 type structures is envisaged.</p> <p>Based on these facts the BOG:</p> <p>a) granted in-principle approval for the following two works as G+5 structures through CPWD subject to the permission by the concerned authorities:</p> <p>Construction of Academic Block at an estimated cost Rs. 1,58,45,12,000/-.</p> <p>Construction of Multi facility Block at an estimated cost Rs. 75,98,42,300/-.</p> <p>b) In case the permission of G+5 proposal is not granted the proposal shall be revised in terms of the cost of estimate and resubmitted to the BWC for fresh approval for the revised proposal.</p>	<p>but also intimated that as per revised Master Plan of Srinagar city, G+5 structures are being proposed for grant of permission. Accordingly the revised proposals have been framed and are being considered in the BWC meeting scheduled on 07-04-2016, the recommendations thereof will be placed in meeting.</p>
BOG-90/12	To consider the report on the activities of the Innovation, Incubation and Entrepreneurship Development Centre (IIEDC).	
Resolution No. 12/90	<p>The BOG noted with appreciation the steps that have been taken by the Institute under the Centre. It was advised that the Vision and Mission statement should include Incubation very prominently. It was advised that the activities should be pursued as per the Vision and Mission statement and collaboration with similar setups in the country should be explored very effectively. Further, it was advised to publicize the activities undertaken by this centre and a quarterly or six monthly News-letter may be printed by the centre for this purpose in addition to other mediums of publicity.</p> <p>Further BOG agreed in-principle to the proposal of setting up of an independent Incubation Centre to support the industries, entrepreneurship and start up in the following areas and advised for preparation of a DPR with help and involvement of an appropriate outside agency, if required:</p> <p>Mechanical Engineering oriented activities</p> <p>Chemical Engineering oriented activities</p> <p>Civil Engineering oriented activities</p> <p>Electronics & Comm. Engineering oriented activities</p> <p>Electrical Engineering oriented activities</p> <p>Information Technology oriented activities</p>	<p>Action as per the decisions is underway. The Hon'ble Chairman, BOG reviewed the progress in this regard during his visit to the Institute on 28-03-2016</p>

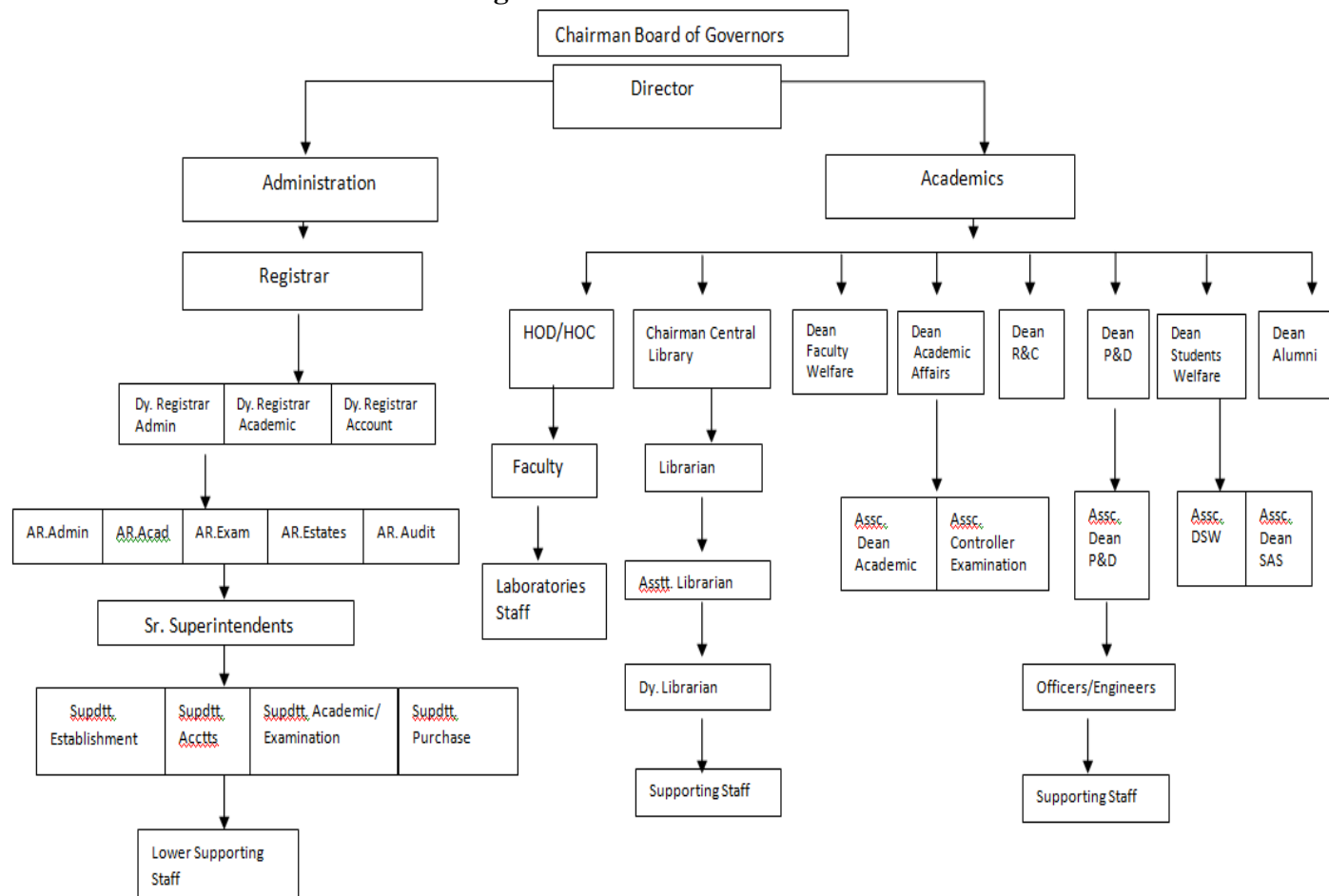
Table-10.1.3s

10.1.4. Decentralization in Working and Grievance Redressal Mechanism

(05 marks)

10.1.4.(A). Organizational Structure

Organizational Structure of NIT Staff



Decentralization in Working- Faculty Development is delegated to the Dean Faculty Welfare

- Students Academic Activities and Examination is being looked after by Dean Academic Affairs who further is assisted by Associate Dean Academics and Associate Dean Examination.
- Developmental works of the Institute is being looked by Dean Planning & Development who is being assisted by Associate Dean.
- Training and Placement is delegated to Dean Alumni and International Affairs.
- The Students Activities, Hostels, Security is being looked after by Dean Students Welfare.
- Research and Consultancy of the Institute is being looked after by Dean Research and Consultancy.
- Office Administration and other matters are being looked after by Registrar.
- The Departments and Centres are being looked after by Heads of Departments and Heads of Centres.

All the above arrangements report to the Director of Institute in their day- to-day official activities and assignments.

10.1.4 B. Mechanism and Composition of Grievance Redressal System

The Institute receives grievance both online and off line. The online grievances are addressed through online mode after obtaining the relevant information for concerned quarters. The offline grievances are also responded through surface mail to the aggrieved parties.

Further for grievance Redressal of teaching and Non Teaching staff committees are constituted to look into the complaints/ grievances from the aggrieved. The report of the grievance committee is forwarded to the Director for further necessary action and the corrective measures are taken.

Following Grievance Committees have been constituted:

1. Grievance Committees

• For Faculty

Prof. A. H. Mir	Chairman
Prof. A. A. Zargar	Member
Prof. Roohie Naaz	Member
Prof. S. A. Lone	Member
Dr. Nisar Ahmad Mir	Convener

• For Non-Faculty

Prof. A. M. Shah	Chairman
Professor Kashmir University	
Prof. A. A. Zargar	Member
Professor Electrical Engg. Deptt.	
Prof. G. M. Rather	Convener
Professor ECE Department	

- **For Students**

Dr. Abdul Liman	Chairman
Dr. Neyaz Ahmad Sheikh	Member
Dr. Atiqur Rehman	Member
Dr. M. A. Rather	Member
Er. Tanveer Rasool	Member

2. For Anti-Ragging Committee

Dr. Abdul Liman	Chairman
Dr. Neyaz Ahmad Sheikh	Member
Dr. Atiqur Rehman	Member
Dr. M. A. Rather	Member
Dr. Tanveer Rasool	Member
Concerned HOD	Member
Medical Officer	Member
Dy. Registrar (Academics)	Member
Asstt. Security Officer	Member
Two Students Representatives	Member

3. The Internal Complaints Committee under the provisions of “The Sexual Harassment of Women at work place (Prevention, Prohibition and Redressal) Act 2013 is constituted as under for our Institute:

Prof. Roohie Naaz	Chairperson
Prof. CSE Department	
Prof. Nahida Tabasum	Member
Prof. Pharmaceuticals Sciences KU	
Prof. Babar Ahmad	Member
Prof. Mechanical Engg. Deptt.	
Dr. Kowsar Majid	Member
Associate Professor Chemistry	
Dr. Seemin Rubab	Member
Associate Professor Physics	
Mr. M. Y. Kuchay	Member
Section Officer Cash & Compilation	

10.1.5 Delegation of Financial Powers

(05 marks)

The Accounts of the Institute are in the name of Director. He is empowered to sanction the requisite amount of money/ proposes upto Rs. 25.00 Lacs beyond this amount the proposal needs to be approved by Chairman BOG. The financial Cheques /transactions are jointly signed by Director and the Registrar.

Further, the HOD's/HOC's are delegated to spend Rs. 15,000/- for purchase of consumables and repairs for smooth running of the departments/centers.

10.1.6 Transparency and Availability of Correct Information in Public Domain (05 marks)

The Institute has a dynamic website and all the relevant information is placed on the Institute Website: www.nitsri.ac.in for the information of Public.

10.2 Budget Allocation, Utilization and Public Accounting at Institute level. (15 marks)**10.2.1 Quantum of Budget Allocation for Three Years (Rs. in Lacs)**

Financial Year	Budget			Expenditure			Total Number of Students
	Non-Recurring	Recurring	Total Budget	Non-Recurring	Recurring	Actual Budget	
2017-18	6770.00	6320.00	13090.00	6302.00	8428.00	14730.00	
2016-17	3400.00	5500.00	8900.00	3395.00	6388.00	9783.00	
2015-16	2900.00	6500.00	9400.00	2635.00	5554.00	8189.00	

Table-B.10.2.1**10.2.2 Utilization of Allocated Funds (05 marks)****A. Budget Utilization for Three Years**

Financial Year	Budget	Expenditure	Percentage of Utilization
2017-18	130.90 crores	147.14 crores	112.40%
2016-17	89.00	97.83 crores	109.92 %
2015-16	94.00 crores	81.89 crores	87.11%

Table-B.10.2.2

The Funds allocated have been well utilized for:

- Developing lab facilities.
- Additional labs were setup.
- New equipments were added to different labs.
- Library and Internet facilities were improved.
- Maintenance of workshop and lab equipments.
- Training programs for faculty members and non teaching staffs.
- Extracurricular activities of students.

10.2.3 Availability of Audited Statements on the Institute Website. (05 marks)**A. Availability of Audited Statement on webiste**

The Audited statements for the last three years are available on the Institute Website www.nitsri.ac.in

10.3 Programme specific Budget Allocation, Utilization (30 marks)**10.3.1. (A) Quantum of Budget Allocation for Three Years (Rs. in Lacs)**

Financial Year	Budget			Expenditure			Total Number of Students
	Non-Recurring	Recurring	Total Budget	Non-Recurring	Recurring	Actual Budget	
2017-18	6770.00	6320.00	13090.00	6302.00	8428.00	14730.00	
2016-17	3400.00	5500.00	8900.00	3395.00	6388.00	9783.00	
2015-16	2900.00	6500.00	9400.00	2635.00	5554.00	8189.00	

Table-B.10.3.1a

Specific Allocation

Items	Budgeted in 2017-018	Expenses in 2017-018	Budgeted in 2016-017	Expenses in 2016- 017	Budgeted in 2015- 016	Expenses in 2015 - 016
Laboratory equipment	98000000.00	97778000.00	160000000.00	152906000.00	90000000.00	85847000.00
Computer Software	25000000.00	24500000.00	45000000.00	4090000.00	500000.00	418300.00
Library	33500000.00	32500000.00	NIL	NIL	11000000.00	10246942.00
Maintenance and Spares						00.00
R&D						00.00
Training and Travel						00.00
Misc. Expenses*						00.00
Lab consumable	7000000.00	6903000.00	6000000.00	2065000.00	5000000.00	1151000.00
Total	16350000.00	161681000	2110000.00	169061000.00	106500000.00	97663242.00

Table-B.10.3.1b

10.3.1.(B) Justification of Budget Allocated

- As per the requirement of Institute New Labs were established and New Equipments and accessories had to be procured.
- New Facilities were introduced for extension programmes of R&C Wing.
- Existing labs were upgraded and improved for ambience and facilities.
- Purchase of New Softwares and Renewal of Softwares already existing.
- Purchase of E-Resources, E-Books and E-Journals.
- Faculty members were encouraged to attend faculty development programmes.
- Trainings programmes for non-faculty staff were held for upgradation of soft skill.

10.3.2 Utilization of Allocated Funds

Financial Year	Budget	Expenditure	Percentage of Utilization
2017-18	130.90 crores	147.14 crores	112.40%
2016-17	89.00	97.83 crores	109.92 %
2015-16	94.00 crores	81.89 crores	87.11%

Table-B.10.3.2

The funds allocated have been well utilized for:

- Developing of lab facilities and upgradation of existing facilities.
- Purchase of equipments for different labs
- Library resources and internet facilities
- Workshop maintenance and lab consumables.

- Training of faculty and non-faculty.

10.4 Library and Internet

(20 marks)

10.4.1 Quality of leaning Resources

The NIT Srinagar library supports the Teaching, Research & and other related programmes of the institute. The Library has a good collection of documents that comprises of Books, Journals, Theses, Video cassettes, Learning Resources (LRs)& Compact discs in the field of Engineering, Science, Management, Literature & Humanities.

The library has computerized data of whole of its collection using **KOHA software** and is in the process of computerizing all its activities.

The library has a separate section **for SC/ST &OBC Students.**

Library Established in	1960
Library Members	3217
Number of Books	48575
Reprographic facility	Xeroxing
Data usage of the Library	70-80% (in terms of Books issued to faculty& students)
Annual Budget	3crore`
Timing during working days	8.45 am to 12 pm
Timing on Sundays &Holidays	10am to 5pm

Table-B.10.4.1a

Layout and Floor Plan

Ground Floor

The ground floor houses the following important sections:

- Reading room
- Periodical section
- Circulation section
- Audiovisual Section
- Acquisition Section
- Stacks I
- Chairman, Library Committee's Room
- Librarian's room
- Office

First Floor

- Textbook & Reference section
- Stacks II

Second Floor

- Back Volume Section

Library Mission

- To promote the technical knowledge
- Generation and application of knowledge & resources
- Effective dissemination of knowledge.

- Library automation and networking for remote access of online electronic resources.
- Improve the library resources.
- Enhance the student experience.
- Build the digital research environment.
- Provide convenient and customized access to information Library Resources

The library has a wide range of resources on Engineering, Sciences, Humanities & Social Sciences.

Collection	Size (number)	Collection	Size (number)
Books	48575	Learning resources	36
Bund volumes of journals	10070	Compact discs	273
Video cassettes	496	Books in text book section	8024
Books in SC,ST section	9898	Books in stacks section	40451

Table-B.10.4.1b

Number of New Titles Added

Year	Number of New Titles Added
2017-2018	164
2016-2017	1193
2015-2016	4680

Table-B.10.4.1c

E-library (Electronic/On-line resources/e-resource 2018)

E-library provides collaborative search of all type of e-resources/on-line resources such as e-journals and books

E-Books

Central library procured different type of e-books, online books for students and faculty via IP range in the campus. The different departments can also be access various type of e-books such as text books and reference books in the electronic form.

1. Wiley

Subjects Covered	URL	Total cost
Civil Engineering & Construction, Electronics &Electrical Engg, Computer Science &IT, Chemistry &Chemical Engg, Physics, Maths & Statistics &Mechanical Engineering.	onlinelibrary.wiley.com	\$88694

Table-B.10.4.1d

]

2. Springer Nature

Subjects Covered	URL	Total Cost
Chemistry & Materials Science, Computer Science, Engineering, Mathematics & Statistics, Physics & Astronomy	link.springer.com/openurl?genre=book&isbn=978-1-4471-6807-2	€52,759.20

Table-B.10.4.1e**3. Elsevier**

Subjects Covered	URL	Total Cost
Chemical Engineering, Chemistry, Engineering, Materials Science, Mathematics, Physics & Astronomy, Computer Science	sciencedirect.com	\$102136

Table-B.10.4.1f**4. Pearson**

Subjects Covered	URL	Total Cost
Chemistry, Civil Engineering, Computer Science & IT, Electronic Telecommunication, Mathematics, Mechanical Engineering, Physics	lib.myilibrary.com	INR 15.64059

Table-B.10.4.1g**E-Journals**

E-Resources are accessible to our Institute through eShodhSindhu (eSS)

	E-resources Subscription Period
ACM Digital Library	January 2018 to December 2018
ASCE Journals	January 2018 to December 2018
ASME Journals Online	January 2018 to December 2018
Economic & Political Weekly	April 2018 to March 2019
Institute for Studies in Industrial Development	April 2018 to March 2019
JGatePlus(JCCC)	January 2018 to December 2018
Oxford University Press	April 2018 to March 2019
Springer Link 1700 Collection+ Nature Journals	April 2018 to March 2019
Web of Science Lease Access	January 2018 to December 2018

NDL e Resources

- | | |
|------------------------------|-------------------------------|
| 1. World E-Book Library | September 2017 to August 2018 |
| 2. South Asia Archives (SAA) | National Licensing |

URL <http://www.inflibnet.ac.in/ess/eres.php?memID=357>

Back Files of Science Direct Journals from M/S Elsevier on the following subjects are now available from **Vol.1, Issue1** up to the year **1994**.

Subjects Covered	Year	URL	Total Cost
Engineering & Technology	Pre 1995	sciencedirect.com	\$193,874
Materials Science	”	”	
Chemical Engineering	”	”	
Computer Science	”	”	
Inorganic Chemistry	”	”	
Organic Chemistry	”	”	
Mathematics	”	”	
Business Management Accounting	”	”	

Table-B.10.4.1h

Subjects Covered	URL	Total Cost
Science Direct (8 subject collection)	www.sciencedirect.com/	
IEEE/IET Electronic Library (IEL) online	http://ieeexplore.ieee.org/	INR 3109669

BIS & ASTM Standards on our IP range.

Subjects Covered	URL	Total Cost
BIS	http://standards.bsb.co.in/	INR 1248345.60(for 3 Years)
ASTM	http://compass.astm.org	INR 744420.44

Table-B.10.4.1i

SERVICES

Membership

All the students, faculty members, research scholars & administrative staff can register themselves for the membership of the library. The membership form is available at the circulation counter and the same is required to be attested by the Head of the Department/Section.

The number of books borrowed by users is as follows:

Category	Number of Books	Duration
Faculty	10	30 days
Research Scholar	5	15 days
Student	3	15 days
Supporting Staff	2	15 days

Text Book & Reference Section

The textbook and reference section remains open from 8.45 a.m. to 9.30 p.m. on all working days and from 10 a.m. to 4.00 p.m. on weekdays & holidays. The books available in this section can be consulted in the library only.

Stacks Section

The books available here are meant to be issued to the faculty, students, research scholars and other readers as per the criteria given in the library rules.

Video Library

The library has collection of video cassettes, CDs, & LRs. They are kept in the audio visual section of the library. This section remains open on all working days from 8.45 AM to 5 PM.

Photo Copying Facility

The photocopying facility is provided to all students and faculty at subsidized rates.

Search

OPAC (Online public access catalogue)

Science Direct

E-Resources

Video library

Our Team

Prof. M S Mir.	Chairman Library Committee M 9469425113, shafi@nitsri.net
Dr. Mohammad Hanief	I/C Library, M 9906763424 hanief@nitsri.net
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Technical Asstt	Mrs. Tahira
Technical Asstt	Mr. M Y Rather
Assistant (SG)	Mr. Bashir A Kawoosa 9797073820, bashirkawoosa@gmail.com
Assistant(SG)	Mrs.Dilshada
Assistant(SG)	Mrs.Neelofar
Jr. Lib assistant	Mr. Shabir Ahmad Sheikh
Orderly	M Yousuf Mir
Orderly	Mr. Gh Mohammad Sheikh
Contractual	Four

Table-B10.4.1j

Library Organization

The Library is organized into the following functional Units:

- Acquisition Section
- Processing Section
- Periodical Section
- Circulation section
- Stacks I
- Text book & Reference Section
- Stacks II
- Reprographic Section
- Audio Visual Section
- Back Volume Section

Members of the Library Committee

1. Prof. M. S. Mir	Chairman Library Committee
2. Dr. M. Hanief	I/C Library
3. Mr. M. Farooq Mir	I/C Deputy Librarian
4. Prof. B. A. Mir	Member
5. Prof. M. F. Lala	Member
6. Dr. (Mrs.) Rubab	Member
7. Dr. Niyaz Ahmed	Member
8. Dr. J. A. Banday	Member
9. Dr. Javid Iqbal	Member
10. Dr.(Mrs.) Farida	Member
11. Dr. M. A. Rather	Member
12. Dr. Atikur Rehman	Member
13. Dr. Shabir Ahmed	Member
14. Dr. Ahsan Chesti	Member

10.4.2 INTERNET

Name of the Internet Provider	NIC NKN; BSNL
Available Bandwidth	NIC NKN :1 GBPS (1:1) & BSNL: 250 Mbps
Wifi Availability	YES
Internet access in labs classrooms library and offices of all departments	YES
SECURITY ARRANGEMENT	YES HARDWARE FIREWALL

Table-B.10.4.2a**WiFi Details**

NIT Srinagar is a Wi-Fi enabled campus with its access controlled by hardware Firewall installed in Computer Service Centre and Wifi access points in various departments including both Boys and Girls hostels.

Device	Department	Coverage
Dlink Access Points	Computer Service Center (1)	50 Meters radius without obstructions
Dlink Access Points	Direction Office (2)	50 Meters radius without obstructions
Dlink Access Points	CSE Staff Room (1)	50 Meters radius without obstructions
Dlink Access Points	Training & Placement Cell (4)	50 Meters radius without obstructions
Dlink Access Points	IT Staff Room (1)	50 Meters radius without obstructions
Dlink Access Points	Humanities Department (1)	50 Meters radius without obstructions

Dlink Access Points	Physics Department (1)	50 Meters radius without obstructions
Dlink Access Points	Medical Unit (1)	50 Meters radius without obstructions
Dlink Access Points	Guest House (1)	50 Meters radius without obstructions
Dlink Access Points	Boys Hostels (92) Girls Hostels (15)	50 Meters radius without obstructions

Table-B.10.4.2b**Security Details**

Sl.No.	Device	Function
1	Sophos Firewall (Hardware)	Security Controller
2	Quick Heal (Seqrite) Antivirus Software	Anti Virus

Table-B.10.4.2c

ANNEXURES

NATIONAL INSTITUTE OF TECHNOLOGY SRINAGAR
Hazratbal, Kashmir-190006.



VISION DOCUMENT
2025

NATIONAL INSTITUTE OF TECHNOLOGY SRINAGAR
HAZATBAL, KASHMIR-190006 (INDIA)
September-2018

CONTENTS

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ANNEXURE - I INTRODUCTION

India is one of the largest technical manpower producing countries of the world. India's vision to become a developed country by the year 2020 can only be achieved through creating income generating activities.

Technology is the means to creating income generating activities. It is the basis for creating wealth for elevating the socio-economic status of the people of a country. A nation can derive strength through development of technology. Technological strength depends upon: (i) *talented manpower*, (ii) *technology base (knowledge)* and (ii) *infrastructure for industrial growth*. A measured combination of these factors together with the availability of natural resources and a huge market provides a country opportunity for developing economic and social status, which ultimately generates a self supporting prosperous society. India possesses all these Educational institutes, especially those dedicated to Science & Technology, have to take the lead. A technical institute is one of the different wings of science and its vision/mission must aim at supplying quality technical manpower for implementing the vision and mission of the country.

NIT Srinagar will provide dedicated service for the fulfilment of the aspirations of individual as part of that of the nation as a whole. It will work to provide engineers and technologists who would be leaders in their field of work, participate in creativity, research, design, development and technology management in the country to meet global challenges to our society and industry. This unique endeavour will focus our effort towards the common goal and help in shaping the future of our country. NIT Srinagar will play a vital role in this endeavour by creating excellent resources and facilities for research and development as well as a large pool of highly trained engineers. It will contribute its share in converting India's large population from a liability into trained human capital.

VISION OF NIT SRINAGAR

To establish a unique identity of a pioneer technical Institute for NIT Srinagar 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 global challenges.

MISSION OF NIT SRINAGAR

- (1) The broad mission of NIT Srinagar is to create a strong and transformative technical educational environment in which fresh ideas, moral principles, research and excellence nurture with international standards.
- (2) Technically educated and broadly talented engineers, future innovators and entrepreneurs, graduate with understanding the needs and the problems of the industry, the society, the state, and the nation.
- (3) We promise to inculcate the highest degree of confidence, professionalism, academic excellence and engineering ethics in budding engineers.

GOALS

i) Providing Quality Education to the Students

- ✓ To offer effective teaching-learning to students.
- ✓ To provide the knowledge, skills and attitudes to UG and PG students necessary for their being able to be distinguished globally and socially responsible.
- ✓ To train the students to learn to meet changing needs due to rapid technological advancement, to offer society the necessary technology and to actively participate in all round socio-economic development programmes.
- ✓ To provide the best, relevant, reliable and high-quality education by focussing on need-based specific solutions.
- ✓ To provide the framework to develop the inherent skill in students, by taking initiatives for technology innovation skill in the students, through sincere and target based, dedicated efforts.

ii) Generation of Infrastructure for Research Activities

- ✓ To provide facilities, infrastructure, inspiration and resources to conduct meaningful research of social relevance along with development of indigenous materials, capacities and technologies.
- ✓ To act as centres of excellence in technical education catalysing absorption, innovation, diffusion and transfer of high technologies for improved productivity & quality of life at national and global level.
- ✓ To keep in consideration the needs of the region in regard to local needs, relevance, strength and limitations and provide community service.

OBJECTIVES

i) Effective Teaching-Learning & Research Environment

- ✓ To create an environment for effective teaching-learning by encouraging students and faculty to nurture their intellectual curiosity, and scientific and research temper.
- ✓ To increase research and consultancy activity, with options for incentives and encouragement, to motivate staff and students to actively engage in research activities in collaboration with industry and R&D Centres.

ii.) Continuing Education Programs

- ✓ To encourage organisation with participation of staff and students in in-house and outside training programs, seminars, conferences and workshops on continuous basis.
- ✓ To increase the number of continuing education programmes.
- ✓ To provide opportunities for continuous updating in the knowledge of faculty through faculty exchange from premier institutions and industries.
- ✓ To increase interaction with educational and other research institutes.

iii.) Institute-Industry Linkage

- ✓ To increase Institute-Industry interaction and to generate strong linkage with industry.
- ✓ To up-grade, develop and transfer Technology.

- ✓ To exchange faculty and working personnel from industry.
- ✓ To encourage active participation of alumni in resource generation, planning and development.

iv.) Institute–Society Linkage

- ✓ To provide society with necessary consultancy and training to solve local problems by organising community development programs.
- ✓ To create awareness on the consequences of Environmental Pollution.
- ✓ To increase demand and pay packages of the student.
- ✓ To encourage and train in development of entrepreneurship

METHODOLOGIES

i) Qualities and Conditions of Staff

- ✓ By imparting value education to all people, especially the engineering community of the country.
- ✓ Induction of highly qualified, talented, competent & motivated faculty, and trained & dedicated supporting technical and administrative staff.
- ✓ By improving in-service conditions of faculties and technical staff commensurate to that of the industry to attract best faculty and staff.
- ✓ By introducing award of merit, recognition and sabbatical leave to performing faculty and staff.
- ✓ Establishing excellent academic support facilities (laboratory, library, Internet etc) required for good education on continuous basis.

ii) SWOT Analysis and Restructuring

- ✓ Identifying particular areas of technology needed based on SWOT analysis (examining the existing facilities).
- ✓ Identifying the problems of J&K.
- ✓ Reforming regulations and curriculum by introducing greater flexibility to courses.
- ✓ Introduction of IT-enabled management in all activities of institute.

iii) Strengthening Research Oriented Activities

- ✓ Submission of concrete proposals to funding agencies for necessary grant.
- ✓ Establishing/strengthening of R&D facilities in institute in collaboration with industries.
- ✓ Developing more research-oriented laboratories and centres.
- ✓ Involving students in innovative technology projects.
- ✓ Providing research & development oriented education.
- ✓ Creating national/international collaborative programmes.
- ✓ Introducing need based more number of UG, PG & research programmes.
- ✓ Establishing network-link amongst NITs for resource and expertise sharing.

iv) Introduction of Monitoring and Control Mechanism

- ✓ Introducing a regular monitoring and control mechanism by establishing procedures and methodologies for assessing outcome of all actions taken and taking appropriate actions, wherever required, for restructuring.

OUTPUT INDICATORS

i) Q-Resource MP and Academic Environment

- ✓ Increase in qualified (minimum PhD) & talented faculty.
- ✓ Increase in qualified technical staff.
- ✓ Increase in visits of adjunct/visiting faculty from industry.
- ✓ Lectures by distinguished professionals from industry and academic institutes.
- ✓ Exchange programs at national & international level.
- ✓ Increase in state of the art laboratories in cutting edge technologies.
- ✓ Meaningful use of class rooms and laboratories, equipped with latest tools.
- ✓ Increase in non-formal training to industry and other educational institute (Executive/staff development Programme).
- ✓ Increased utilisation of infrastructure facilities in terms of man-hours by sharing the facilities with the other academic institutions.

ii) Infrastructure and Administrative Reforms

- ✓ Development of state-of-the-art infrastructure in terms of building (offices, Lecture theatres, new laboratories, new departments and centres, hostels, faculty and staff residences), equipment, library, video conferencing & media centre, medical, road, electricity, water supply, sanitation, telecom and Internet facilities, security, recreational facilities, environment and ambience.
- ✓ Administrative reforms (MIS, Transparency and self monitoring mechanisms, autonomy, well defined responsibilities & accountability, maintenance etc).
- ✓ Establishment of industry sponsored chairs.
- ✓ Nurture entrepreneurs.
- ✓ Increase in resource generation through alumni, consultancy, fee etc.
- ✓ Increase in community services to payback to society.

iii) Research Activities

- ✓ Increase in participation in national and international conferences.
- ✓ Increase in faculty visit/training/collaborative ventures with industry, research organisations and other academic institutions of repute in India & abroad.
- ✓ Increase in research publication, patents and technology transfer to industry.
- ✓ Increase sponsored research projects and consultancy.
- ✓ Increase in Ph.D. and post-doctoral research.

iv) Upgradation of Library Facilities

- ✓ Construction of new library building with adequate space.
- ✓ Modernisation of library facilities.
- ✓ Providing Independent robust internet connectivity.

- √ *Creating facilities to access e-resources through internet.*
- √ *Creating facilities to access e-resources within the library.*
- √ *Development of sufficient manpower in the library.*
- √ *Completion of computerisation of the library.*
- √ *Digitization of rare references and theses.*
- √ *Improve Training of library staff.*

v) ***Boost in Academic Activities***

- ✓ Increase in student strength at M. Tech. and PhD level (restructuring the existing programmes & introducing new programmes).
- ✓ Increase in foreign students' intake.
- ✓ Increase in degree programmes.
- ✓ Introduction of new innovative programs like Dual degree program, MS by research program.
- ✓ Increase in departments and centres of excellence.
- ✓ National and Global Accreditation Certification and licensing for global competitiveness as per GATS (Mode - 2 and Mode – 4).

IDENTIFICATION OF TECHNOLOGIES THAT NIT SRINAGAR WILL PUT THRUST ON

Though NIT Srinagar has to keep pace with national and global trend in the development of technology, it has its own strengths and weaknesses, specific obligations and socio-economic responsibilities. NIT Srinagar needs to give greater impetus to all round development to reduce the gap in progress that has been created because of two decades of uncertainty. As a step forward in this direction, following thrust areas have been identified with Vision-2025 which is linked to major areas in advanced technologies, technologies with socio economic implications, strategic technologies and technologies to make J&K state self reliant.

A) Agriculture and Food processing

i) Agriculture Bio- Technology

- ✓ High yielding crops & terminator gene
- ✓ High nutritional & medicinal value crops
- ✓ Food/commodities high shelf life and taste (Plant pathology)
- ✓ Highly tolerance & pest resistant crop
- ✓ New variety of agriculture produce (GM) and quality improvement

ii) Food and fruit processing, packaging & storage technology

- ✓ Packaging & transportation without damage
- ✓ Processing & healthy preservation without losing nutrient

B) Infrastructure (Social & Industrial)

i) Housing & Land development

- ✓ Low cost rural housing
- ✓ Smart and energy efficient urban housing
- ✓ High rise buildings
- ✓ Mechanized Construction & modular construction
- ✓ Earthquake resistant construction
- ✓ Secured demolition technology
- ✓ Non-invasive and quick geo-technical explorations
- ✓ GIS, GPS and Remote sensing
- ✓ Utilization of underground space
- ✓ Health monitoring of the structures
- ✓ Structural green building technology.

ii) Transportation

- ✓ High-speed (Rapid) surface & sub-surface transport
- ✓ Air transport and Airports

iii) Communication

- ✓ Wireless technology and network sensors
- ✓ Satellite & space (inter-planet) communication technology
- ✓ Global high speed data transfer
- ✓ Signal Processing
- ✓ Telemedicine

iv) Urban & Rural Planning and Management

- ✓ Solid waste management and utilisation
- ✓ Electronic & toxic waste management
- ✓ Water treatment
- ✓ Rain water harvesting, ground water recharging.
- ✓ GM bacteria for waste management.

v) Technology for Local and Regional Development

- ✓ Avalanche & Landslide studies
- ✓ Foundations on slopes
- ✓ Prevention of land erosion.
- ✓ Preservation of tourist attractions viz. Dal Lake etc.

C) Resource Management**i) Energy Engineering**

- ✓ Sources: Hydro, solar, wind, thermal, nuclear, fuel cell
- ✓ Alternative sources and resources of energy
- ✓ Renewable organic (bio) fuel
- ✓ Energy storage devices
- ✓ Electric Power: Generation, Transmission and distribution
- ✓ Energy audit and loss minimization
- ✓ Development of Energy efficient technologies

- ✓ Sensor based use of energy appliances.

ii) Water Resource Management

- ✓ River linkage
- ✓ Irrigation canals
- ✓ Rain water harvesting and ground water recharge

iii) Environment, Ecology & Sustainability

- ✓ Environmental impact assessment and audit
- ✓ Macro engineering the environment and weather
- ✓ Weather forecasting
- ✓ Global warming
- ✓ Development of Eco-friendly (Green) technology
- ✓ Waste management

D) Disaster Mitigation & Management

- ✓ Earthquake.
- ✓ Flood & drought
- ✓ Widespread fire in forest or in man made infrastructure
- ✓ Predictions and post disaster rehabilitation

E) Technology Management

- ✓ Education technology and distance learning
- ✓ Knowledge Management
- ✓ Technology development, transfer, dissemination and absorption
- ✓ Development of indigenous technology (substitute of imported technology)
- ✓ Entrepreneurship
- ✓ Sustainability in resource generation and technology development
- ✓ User-friendly and Safe Technology
- ✓ Research & Development Management

F) Development of Newer and Advanced Technologies

- ✓ Computational Fluid Dynamics
- ✓ Embedded technology and Real time Systems
- ✓ VLSI
- ✓ MEMS and NEMS
- ✓ Nano Technology & Bio-Nanotechnology
- ✓ Advanced sensors & Network sensors
- ✓ Application of Artificial Neural Network (ANN) & Fuzzy Logic.
- ✓ Performance Based Seismic Design.

G) IT & Services

- ✓ Internet and digital network services
- ✓ E-governance

- ✓ Technology empowerment of mass
- ✓ Net security
- ✓ Software development for CAD etc
- ✓ Telemedicine.

SWOT ANALYSIS

NIT Srinagar has identified its own thrust areas based upon its current strengths, capabilities, facilities, interests and future projections incorporating diverse needs and local conditions. A SWOT analysis is presented below for the NIT Srinagar while finalising its vision, mission, goals, policy guideline, strategies, action-plans, and expected outcomes, as stated on previous pages.

A) Strengths

i) *Academic Sector*

- ✓ Good quality faculty.
- ✓ Creamy layer of students.
- ✓ Full academic autonomy and university status.
- ✓ Adherence to academic calendar with regular academic sessions.
- ✓ Periodic updating of curriculum.
- ✓ Number of P.G. programmes offered.
- ✓ Well equipped laboratories.
- ✓ Conducive ambience and well endowed computational and academic infrastructural facilities.
- ✓ Good placement record.
- ✓ Developing countries' students come to NITS for higher studies.

ii) *Non-academic Sector*

- ✓ Financial autonomy.
- ✓ Reasonably good funding.
- ✓ Good pay package for the staff.
- ✓ Brand image from more than 50 years of standing.
- ✓ Alumni in Senior/influential positions.
- ✓ Professional Board of Governors with administrative autonomy.

B) Weaknesses

i) *Academic Sector*

- ✓ Inadequate and insufficiently trained supporting technical staff.
- ✓ Inadequate sophisticated equipment and labs in the areas of emerging technologies & cutting edge disciplines for post graduate teaching and research.
- ✓ Inadequate educational technology facilities according to global norms.
- ✓ Low research and consultancy output due to inadequate research facilities.

- ✓ Teaching is curriculum centric rather than learning centric (Inadequate emphasis on problem solving, laboratory experimental design and simulation).

ii) Non-academic Sector

- ✓ Work culture is still driven by old REC legacy.
- ✓ Less than needed emphasis on overall personality development of student.
- ✓ Inadequate emphasis on entrepreneur skill development in students.
- ✓ Inadequate linkages with industry and community.
- ✓ Inadequate administrative skilled staff/officers.

C) Opportunities

i) Academic Sector

- ✓ Scope of providing world class education in cost effective manner.
- ✓ Increase in intake of UG, PG & PhD students as mandated by MHRD.
- ✓ Increase in research activities: PhD and sponsored research.
- ✓ Scope of establishing centre of excellence and advanced studies.
- ✓ To train technical supporting staff.
- ✓ International and national academic collaborations and joint ventures with industries.

ii) Non-academic Sector

- ✓ Boom in industrial development puts demand for quality technical manpower.
- ✓ MHRD's strong support for funds and autonomy.
- ✓ Scope of innovating new products/processes/designs and acquire patents.
- ✓ Scope of tapping Alumni experience; building corpus fund, developing labs, chair professorships, collaborative programs with universities/ industries etc.
- ✓ Increased interaction with industries.
- ✓ Tapping natural resources available in various parts of the country including different parts of J&K.

D. Threats

i) Academic Sector

- ✓ Lack of good faculty may permit mediocrity to overtake excellence.
- ✓ Overloading of faculties by Academic & Administrative activities results in the decrease in the pace of progress in research activities.

ii) Non-academic Areas

- ✓ More attractive opportunities outside NIT Srinagar, in terms of remoteness from the heart of country, tedious transportation facilities, pose a threat to attract and retain good faculty and technical staff.
- ✓ Lack of proper transportation facilities through Road/Rail resulting slower development of infrastructure at NIT Srinagar.
- ✓ Boom in self financing institutions.

CONCLUDING REMARKS

Technical education has been the driving force in supporting industrial growth, creating healthy economic status, generating employment opportunity, eradicating poverty and all round development of society. NIT Srinagar has set its vision-mission'2025 with the aim of generating technically sound manpower, which will provide necessary technical support at both the national and international level. It is envisaged that there will be growing challenges to technical education in the coming years as global competition; technology advances, new markets etc. shape the future. It is believed that this vision document will play the role of guideline towards fulfilling our common goal and in helping shape the future of the country.

J&K is lagging far behind the country's average development mark in almost all sectors: e.g., industrial growth, employment opportunity, transportation, education, economic condition, health etc. Being a technical institute of national importance, situated in the extreme north, NIT Srinagar would like to play a vital role in the upliftment of the quality of life of all sections of society of the region. Although a series of measures have been initiated by Government of India to implement various sponsored programmes, many more are needed to bring the general development status of this region to the level of the best in the mainstream. Therefore, NIT Srinagar has set its mission to provide cutting edge technology for this region by committing itself directly as well as indirectly to the needs of this region.

It may be pointed out that, at present NIT Srinagar has a scenic campus situated on the banks of the famous Dal Lake. The present land on which, it is built is 67 acres, which is far less than what is required for fulfilment of the vision. Therefore, a proposal for establishment of an additional New Campus comprising of 250 Acres is already under process.

The details of the existing branches of studies, proposed advanced technologies, technologies with socio-economic implications, student intake etc. along with new infrastructures required up to 2025 for making National Institute of Technology Srinagar a centre of academic excellence are highlighted in **Appendix-A**, attached herewith.

ABBREVIATIONS USED

CE= Civil Engineering Department

EE = Electrical Engineering Department

ME = Mechanical Engineering Department

CSE = Computer Science and Engineering Department

ECE = Electronics and Communication Engineering Department

CHEM = Chemistry Department

PHY = Physics Department

MATHS = Mathematics Department

HSS = Humanities and Social Sciences Department

IT=Information Technology Department

MME=Metallurgical & Materials Engineering Department

CHE=Chemical Engineering Department

Appendix -I

Table-1: Courses being offered by Existing Departments

Note: In addition, all the Departments offer Ph.D programmes.

Sl. No.	Name of Departments	B. Tech. Courses	M. Tech./M.Phil. Courses
1	CE	Civil Engg.	1. Water Resources Engg. 2. Structural Engineering 3. Geo-Technical Engg. 4. Transportation Engg. & Planning
2	EE	1. Electrical Engg.	1. Electrical Power and Energy System
3	ME	Mechanical Engg	1. Mechanical System Design. 2. Industrial Tribology and Maintenance Management
4	CSE	Computer Science Engg	----
5	ECE	Electronics and Communication Engg.	1 Communication & Information Technology 2 Micro-Electronics
6	CHEM	Chemical Engineering	1. Chemical Engg.
7	MME	Metallurgical & Materials Engineering	
8	IT	Information Technology	
9	PHY	-	MS.C Physics
10	CHEM	-	
11	MATH	-	

Table-2: Some Existing Laboratories in Various Departments

Department	Total No. of Labs	Name of the laboratory	
		1	Fluid Mechanics and Mechanical Operations Laboratory
		2	Mass Transfer Laboratory

Chemical	12	3	Process Dynamics & Control Laboratory
		4	Thermodynamics and Reaction Engineering Laboratory
		5	Heat Transfer Laboratory
		6	Energy Engineering Laboratory
		7	Biochemical Engineering Laboratory
		8	Environment Engineering Laboratory
		9	Membrane Science and Technology Laboratory
		10	Multiphase System Laboratory
		11	Project Lab
		CE	12
2	SOM Lab		
3	Concrete Technology Lab		
4	Pavement Engg. Laboratory		
5	Environmental engineering lab		
6	Structural Analysis Lab		
7	CAD Lab		
8	Traffic Engg. Lab		
9	Survey Lab		
10	Geotechnical Engg. Lab		
11	Engg. Geology lab		
12	Project Lab		
ECE	10	1	Communication Systems Laboratory
		2	Microprocessor Laboratory
		3	Digital Electronics Laboratory
		4	Analog Electronics Laboratory
		5	Microwave Engg. Laboratory
		6	Optical Fiber Communication
		7	Electronic Design & Automation Tools -II

		8	VLSI Lab
		9	Network Security Lab
		10	Computational Lab
		11	Project Lab
ME	12	1	Steam lab
		2	Production Technology Lab
		3	Fluid Mechanics Lab
		4	Internal Combustion Engines Lab
		5	Tribology Lab
		6	Heat Transfer Lab
		7	Mechatronics Lab
		8	Dynamics Lab
		9	CAD Lab
		10	Industrial Engineering Lab
		11	Metrology Lab
		12	Advanced Strength of Material Lab
EE	12	1	Basic Electrical Engineering Lab
		2	Control Systems Lab
		3	Electrical Measurement Lab
		4	Power Systems Lab
		5	Power Electronics Lab
		6	Electrical Machines Lab
		7	Microprocessor and DSP Lab
		8	Computation Lab
		9	High Voltage Engineering Lab
		10	Virtual Instrumentation Lab
		11	Energy Systems Lab – (For Research Scholars)
		12	Project Lab
CSE		1	Artificial Intelligence Lab
		2	Computational Lab
		3	Database Lab

		4	Computer Graphics Lab.
		5	Networks & Security Lab
MME		1	Mechanical Metallurgy Lab.
		2	Physical Metallurgy Lab.
		3	Foundry Technology Lab.
		4	Mineral Dressing Lab.
		5	Metallography & Heat Treatment Lab.
		6	Fuels / Furnaces / Refractories Lab.
		7	Powder Metallurgy Lab

Table-3: Proposed New B. Tech. Courses (To be opened with Existing Departments)

Proposing Departments	Proposed B. Tech. Courses	Year of starting	Student Intake	Faculty Requirement					Laboratory Staff Requirement				Space Requirement
				Professor	Associate Professor	Assistant Professor	Technician	Attendant	Laboratory Clerk	Peon			
Civil Engineering	Environmental Engineering	2015-16	30	01	02	04	03	06	01	01	2500 Sft.		
Mechanical Engineering	B.Tech. in Industrial & Production Engineering	2016-17	50	02	04	08	02	02	01	01	3000 Sft.		
Chemistry & Chemical Engineering	B. Tech. in Bio-Technology	2015-16	60	01	01	02	02	01	01	01	3000 Sft		

Table-4: Proposed M. Tech./ M.Sc. Courses (To be opened with Existing Departments)

Proposing Departments	Proposed Courses	Year of Intake	Intake Enhancement	Faculty Requirement	Lab Staff Requirement	Space Requirement
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				Year	No.	Professor	Associate Professor	Assistant Professor	Officer	Scientific	Technician	Laboratory Attendant	Peon	Clerk	
Civil Engineering	Environmental Engg. & Management	2019-20	25	--	--	01	-	02	01	01	01	01	-	-	3000 Sft
	Geotechnical Engineering	2013-14	25	--	--	01	-	02	-	01	01	01	-	--	3000 Sft
	Transportation Engineering	2014-15	25	--	--	01	-	02	-	01	02	02	-	--	3000 Sft
Mechanical Engineering	Tribology & Maintenance	2012-13	25	--	-	01	-	02	-	01	01	01			3000 Sft
	Thermal Engg.	2020-21	25	--	-	01	-	02	-	01	01	01			3000 Sft
	Mechotrons & MEMS	2019-20	25	--	-	01	01	02	-	01	01	01			3000 Sft
	Automotive Engg.	2018-19	25	--	-	01	01	02	-	01	01	01			3000 Sft
	Production Engg.	2018-19	25	--	-	01	-	02	-	01	01	01			3000 Sft
	Industrial Engg.	2019-20	25	--	-	01	-	02	-	01	01	01			3000 Sft
Electrical Engineering	Power & Energy Systems	2013-14	25	--	-	01	-	02	-	01	01	01			3000 Sft

	Power Electronics & Drivers	2021-22	25	--	-	01	-	02	-	01	01			3000 Sft
	Control & Automation	2021-22	25	--	-	01	-	02	-	01	01			3000 Sft
Computer Science & Engineering	M.Tech. CSE	2023-24	20			01	01	02	-	02	-	-	--	3000 Sft
Electronics & Communication Engineering	Information Security	2023-24	25	--	-	01	01	02	-	01	01	-	--	3000 Sft
	Micro Electronics	2015-16	25	--	-	01	01	02	-	01	01	-		3000 Sft
	Wireless Communication	2020-21	25	--	-	01	01	02	-	01	01	-	--	3000 Sft
Chemical Engineering	Biochemical Engineering & Biotechnology	2024-25	15	-	-	01	02	02	01	01	01	-	01	3000 Sft
	Environmental Engineering	2021-22	15	-	-	01	02	02	01	01	01	-	01	3000 Sft
Metallurgical & Materials Engineering	M.Tech. in Metallurgical & Materials Engg	2022-23	15		15	01	01	02	-	02	02	01	01	3000 Sft
Mathematics	M.Sc. Applied Mathematics	2020-21	15	2014-15	25	-	-	01	-	-	-	-	--	3000 Sft
Chemistry	M.Sc. in Industrial Chemistry	2022-23	20	2017-18	25	01	01	02	-	01	01	-	-	3000 Sft

	M.Sc. in Bio-Science	2023-24	20	2017-18	25	01	01	02	-	01	01	-	-	3000 Sft
Physics	M.Sc. in Applied Physics	2024-25	15	2016-17	25	02	-	-	-	-	-	-	-	3000 Sft

Table-5: Proposed PG Diploma Courses (To be opened with Existing Departments)

Proposing Departments	Proposed PGD Courses	Year of start	Intake	Enhancement		Faculty Requirement			Staff Requirement			Space Requirement	
				Year	Number	Professor	Associate Professor	Assistant Professor	Technician	Laboratory Attendant	Clerk		Peon
Chemical Engineering	Industrial Instrumentation	2022-23	25	-	-	-	-	02	-	-	-	-	150 m ²
Metallurgical & Materials Engineering	Failure Analysis	2024-25	25	-	-	-	01	02	01	02	-	01	200 m ²

Table-6: Proposed Centres (To be opened separately)

Proposing Departments	Proposed Centres	Year	Faculty Requirement			Staff Requirement			Space Requirement		
			Professor	Associate Professor	Assistant Professor	Scientific Officer	Technician	Laboratory Attendant		Peon	Clerk
Mechanical Engineering	Non Destructive Testing & Evaluation Centre	2014-15	01	02	-	1	1	1	1	-	200 m ² for each of the Centres

	Energy Research Centre	2014-15	01	02	--	1	1	1	1	-
	Ergonomics Centre	2018-19	01	02	--	1	1	1	1	-
	Centre for Nano Science & Engg.	2020-21	01	02	--	1	1	1	1	-
	Fatigue & Fracture Evaluation Centre	2020-21	01	02	--	1	1	1	1	-
	Crygonic Research Centre	2021-22	01	02	--	1	1	1	1	-
	Rapid Prototyping & Reverse Engg. Centre	2022-23	01	02	--	1	1	1	1	-
	MEMS Design Centre	2023-24	01	02	--	1	1	1	1	-
Electronics & Communication Engineering	Centre for Telemediciens	2015-16	01	01	02	01	02	01	01	-
Metallurgical & Materials Engineering	Testing & Evaluation of Materials Quality	2015-16	01	01	02	01	04	02	01	01
Electrical Engineering	Centre for Energy Studies	2015-16	01	01	02	01	02	01	01	-

Table-7: Additional Space Requirement for the Departments and Centres

Proposing Departments	Additional Space Requirement (m ²)					
	Class Rooms	Labs	Seminar Rooms	Others (Faculty Rooms etc.)	Proposed New Departments	Total Space
CE	200 m ²	500 m ²	100 m ²	100 m ²	600 m ²	1500 m ²

EE	200 m ²	500 m ²	100 m ²	200 m ²	-----	1000 m ²
ME	400 m ²	500 m ²	100 m ²	600 m ²	-----	1600 m ²
CSE	300 m ²	400 m ²	100 m ²	200 m ²	-----	1000 m ²
ECE	400 m ²	500 m ²	100 m ²	200 m ²	-----	1200 m ²
CHM	400 m ²	200 m ²	100 m ²	200 m ²	-----	900 m ²
MME	400 m ²	500 m ²	200 m ²	500 m ²	-----	1600 m ²
PHY	200 m ²	200 m ²	100 m ²	100 m ²	-----	600 m ²
MATH	200 m ²	100 m ²	100 m ²	200 m ²	-----	600 m ²
HSS	100 m ²	100 m ²	100 m ²	400 m ²	-----	600 m ²
10 Centres	7× 200m ²					1400 m ²
Total						9600 m ² say 10,000 m ²

Table-8: Proposal for Consideration of Establishment of New Campus.

Sl. No.	Execution Period	Name of the Project	Built up Area where Applicable	Estimated Cost in Lacs
1	2011-17	2500 capacity Boys' Hostel	10,000 m ²	1500.00
2	-do-	500 capacity Girls' Hostel	1500 m ²	300.00
3	-do-	Construction of Married Scholars Hostel (PG/Ph.D. Students) (A) 300 Capacity P.G Boys (B) 100 Married Scholars	12060 m ²	1810.00
4	-do-	New Library Building	10,000 m ²	1500.00
5	-do-	Community Cum Meditation Centre 1000 Capacity	4000 m ²	600.00
6	-do-	Construction of Auditorium Building	3100 m ²	465.00
7	-do-	Market Complex	2000 m ²	300.00
8	-do-	Security Barrack 100 Capacity	554 m ²	84.00
9	-do-	Construction of Administrative Building	2700 m ²	405.00
10	-do-	Construction of Estate Department, Central Store Office Building, T&P, NCC etc.	3000 m ²	450.00
11	-do-	Augmentation of Electrical Power Supply (I) 33/11 KV Substation (ii) 11 KV Distribution	250 m ²	38.00
12	-do-	Augmentation of Class Room Space	2000 m ²	300.00
13	-do-	Augmentation of Labs.	2000 m ²	300.00
14	-do-	Augmentation of Residential Area	2500 m ²	375.00
15	-do-	Recreational Facilities for Students viz. OA Theatre, Swimming Pool And Indoor Stadium	3000 m ²	450.00
16	-do-	Construction of Internal Roads	-	1200.00

17	-do-	Construction of Institute Main Gate	-	25.00
18	-do-	Improvement of Landscaping, Echo Park, Children Park	-	250.00

ANNEXURE-II

Recruitment Rules for Faculty of NITs

A. Short Title and Commencement : These rules may be called the NIT Faculty Recruitment Rules, 2011. These shall come into force from the date of their notification which will follow their acceptance by the Board of Governors of the concerned Institute.

B. Definitions : In these rules, unless the context otherwise requires;

“Act” means NIT Act, 2007.

“Statutes” means the First Statutes of the NITs and the Statutes subsequently framed by the respective NIT or framed by the Ministry of Human Resource Development.

“Service Rules” means Service Rules of the respective NIT

“Faculty” means the Professor, Associate Professor and Assistant Professor of the NITs.

C. Method of Recruitment and other Matters: The method of recruitment and other matters relating to the post of faculty shall be specified in the schedule annexed to these rules.

D. Deputation/Contractual Appointments: Faculty, who are appointed on contractual basis, shall be for a fixed period not exceeding five years. Faculty without Ph.D. degree shall be recruited on contract basis only.

E. Disqualification : No person,

- i. Who had entered into or contracted a marriage with a person having a spouse living; or
 - ii. Who having a spouse living, has entered into or contracted a marriage with any person.
- shall be eligible for appointment to the said post; provided that the Board of Governors may, if satisfied that such marriage is permissible under the personal law applicable to such a person and the other party to the marriage and that there were other grounds for so doing, exempt any person from the operation of this rule.

F. Saving : Nothing in these rules shall affect reservations, relaxations of the age limit and other concessions required to be provided for the candidates belonging to the Scheduled Castes, Scheduled Tribes, Other Backward Classes, Ex-servicemen and other special categories of persons in accordance with the orders issued by the Central Government from time to time in this regard. These

rules shall also not affect the recruitments already made or for which recruitment process has already commenced; but any appointment or promotion to higher post proposed to be made or made subsequent to the notification of these Recruitment Rules will be governed by these Recruitment Rules.

G. Other Conditions of Service : The other conditions of service of the Faculty for which no specific provisions have been made in these rules shall be regulated in accordance with such rules as are, from time to time, applicable as per the First Statutes of the NITs and the subsequent amendments. For matters not covered by the Statutes, the corresponding Central Government Rules shall be applicable.

H. Qualifications and other Requirements of Selection : Qualifications and other requirements of selection for various faculty posts are given in detail in the annexures contained in attached schedule.

I. Amendment to Recruitment Rules : These rules may be amended by the Board of Governors of the respective NIT for reasons to be recorded in writing. The amended rules shall not be applied retrospectively and shall take effect only after they are approved by the Ministry of Human Resource Development.

SCHEDULE

Recruitment Rules (RRs) for the Post of Assistant Professor, Associate Professor and Professor of NITs.

1. Name of Posts

Assistant Professor / Associate Professor / Professor of NITs.

2. Number of Posts

As per norms fixed by the Govt. of India

3. Classification

Group – A (Pay Bands PB3 and PB4)

4. Whether Selection post or non-Selection post: By Direct Recruitment

5. Age limit for Direct Recruitment

Age barriers expressed in terms of “Age preferably below n’ years” for various posts are given in Annexures. Fresh appointment beyond the age of 60 years is discouraged except in the case of faculty with exceptionally brilliant research career and with ongoing or approved externally funded research projects.

6. Educational and other Qualification required for Direct Recruits

Given in Annexures– I & II.

7. Whether age and educational qualifications prescribed for Direct Recruits will also apply in Case of promotees

There shall be no distinction between external and internal candidates with regard to the requirements of qualification and experience. An internal candidate is deemed to be recruited directly, irrespective of his position against a vacancy, i.e. whether he is recruited against a vacancy or supernumerary under career advancement. Limitation on age bar and specialization, however, will be applicable to external candidates only.

8. Period of probation, if any

One year. It may be extended by the respective BoG, on recommendation of the Director.

9. Method of Recruitment

- i. Whether by Direct Recruitment or
- ii. By promotion/ by deputation and percentage of vacancies to be filled up by various methods.

iii. All posts will be filled up by direct recruitment (including recruitment of internal candidates without a clear vacancy for career advancement) failing which on deputation from institutions of comparable standing, failing which on contract for a maximum tenure of five (05) years. Assistant Professors without Ph.D. degree will be recruited on contract basis only.

10. In case of recruitment by promotion/ deputation/ absorption, grades on which promotion/ deputation/ absorption to be made applicable

Not applicable.

11. Basic Principles of Faculty Recruitment

i. A Ph.D. degree shall be the minimum qualification for a regular faculty position in NIT. Candidates with M. Tech. degrees may be appointed as Assistant Professors, on contract basis only. The Institutes will strive to provide necessary facilities to such contract faculty to complete their own Ph.D. either within the Institutes (if facilities exist) or outside. Any deficiency in extension of such facility, however, will not be a ground for award of regular post without a Ph.D. degree.

ii. All recruitment and pay-fixation shall be done by the BoGs of the Institutes only on the recommendations of duly constituted Selection Committees. There shall be no scope of fixing of altering pay (pay in pay-band or grade pay) outside the Selection Committee. The Selection Committee shall be the only entity empowered to consider the past services and qualifications of a candidate.

iii. Recommendations of the Selection Committee will be arrived at by discussions within the Committee. Contents of such discussions and details of transactions within the Committee will not form a part of permanent records or minutes.

12. Distribution of Posts among Departments / Centres and Designations

While there is no rigid formula for distribution of sanctioned posts among the departments and centres within an Institute, Annexure V gives a recipe for distributing sanctioned faculty posts among various departments of an Institute. But the BOG, on the recommendation of the director, shall dynamically allocate sanctioned faculty positions among the departments taking into consideration academic programmes of various departments, existing quality of faculty, expected retirements and availability of bright candidates.

There will be three designations – Professor, Associate Professor and Assistant Professor. At present, all NITs have been granted a three tier “rigid” faculty distribution among the three designations – P:AsP:AP = 1: 2: 4, with a Career Advancement Scheme where faculty may move to higher pay (AGP) and designation in the absence of a clear vacancy. Details of CAS provisions are given later in this schedule.

Institutes may, however, opt through a resolution of the Board and concurrence of the Council of NITs (or the Standing Committee of the Council on behalf of the Council) the 4 tier flexible faculty cadre announced by the Ministry vide its order of 18th August, 2009.

13. Qualifications and Experience:

Qualifications and experience required for various posts as well as the selection procedure are listed in Annexures – I to IV for both the 3 tier rigid faculty structure as well as the 4 tier flexible faculty

structure. While all the NITs follow the 3 tier structure at the moment, it is expected that most of the Institutes will follow the 4 tier flexible cadre structure in due course with the approval of the Ministry.

14. Faculty from Industry without Ph.D. Degree

There shall be necessary provision for inducting faculty from industry (or comparable organisations) with substantial professional and R&D experience, but not having a Ph.D. degree. For candidates with good number (say 10) of publications in leading journals of the field, the candidates being the lead author, the requirement of Ph.D. degree may be waived. In all other cases, such a candidate may be taken on contract till he completes the Ph.D. degree.

15. Policy on avoiding in-breeding

Most leading universities of the world, including the best Institutes of India have an explicit or implicit policy of not inducting their own students into the faculty. To avoid such in-breeding, the NITs will follow the following policies.

i. Candidates who have obtained or are expected to obtain their most recent degree (Ph.D. or M.Tech.) from the Institute will normally not be considered for recruitment, except where there is a 3 years' gap (approximately) between leaving the Institute and the expected date of joining.

ii. This is not applicable to candidates who are already members of the faculty, either regular or on contract, and are pursuing a higher degree in the Institute.

iii. In special cases, where the department (at the time of short-listing) or the Selection Committee feels that an exception needs to be made (for reasons such as severe shortage of faculty in a given academic field or exceptionally brilliant candidate or any other), the reasons for such exceptions are to be recorded in writing and put up to the Board of Governors for approval. The Board, if convinced, may confirm the selection. Such appointments will not serve as precedence.

16. Multiple Attempts

In order to keep the number of candidates interviewed within practical limits, Scrutiny Committee may, if it deems fit, reject a candidate on his third or further attempt, if the candidate has failed to win the same post in two previous attempts, (either in scrutiny or selection stage), even if he meets the short-listing criteria, except when there is significant new achievement justifying an exception.

17. Functioning of the Selection Committees

While the Scrutiny Committee and Selection Committee will use all information available to them and be as quantitative as possible, their recommendations will reflect a collective decision based on accumulated professional experience which is often not possible to quantify. Committees will not be obliged to record the details of their individual reasoning process.

18. Auxiliary Faculty Positions

Norms for appointment of adjunct, honourary, chair, emeritus, contractual, visiting, ad hoc and temporary faculty are given in Annexure – VI.

19. Seniority of Faculty

Personal prospects as well as responsibilities assigned by the Administration in an Institute of higher learning should be decided on academic merit and performance, rather than by service seniority. However, in cases where “seniority” is an issue, the following will be the deciding factors in decreasing order of importance: (i) Designation (ii) AGP, (iii) Pay in Pay Band (iv) Date of BoG meeting in which current AGP was sanctioned (iv) Position in the merit list prepared by the Selection Committee, (vi) Seniority in lower AGP or 5th CPC (vii) Date of Birth.

20. Career Advancement Scheme

A Career Advancement Scheme (CAS) is an essential component of a rigid faculty structure, whereby an individual faculty member can move to a higher designation and/or pay (AGP) in the absence of a clear vacancy. The CA Scheme of NITs is distinct and is fundamentally different from those of UGC, AICTE or similarly placed agencies.

A CAS promotion may be given to a serving faculty member on satisfying two essential criteria simultaneously:

- i. Completion of specified number of years of service in the same institute in a lower designation or AGP, AND
- ii. Being selected by a valid Selection Committee using the same criteria, procedure and common interview as prescribed for directly recruited candidates (internal or external) and being included in a common panel.

There shall be no legal or social distinction between a faculty member selected against a clear vacancy or in the absence of one under CAS. Both are deemed to be directly recruited. There shall be no retrospective promotion, neither real nor notional.

If and when a vacancy occurs in the higher posts and there are serving faculty members with corresponding designation under CAS, they must be adjusted as per the respective seniority list before fresh advertisements are published. Under special circumstances, if an Institute is looking for new faculty at Professor or Associate professor level with expertise not available within the Institute, the Board of Governors (on recommendations of the ACoFAR) can set aside a vacant position exclusively for external recruitment.

In the case of up-gradation of Professors to HAG scale, personal interview may be dispensed with. The Selection Committees[formed as per provisions of the Statutes] shall make their recommendation on the strength of publication, books, patents sponsored projects, industrial consultancy, Ph.D. guidance, and contribution to Institute’s administration as submitted by the candidate.

21. Transition from rigid to flexible Cadre Structure

When an Institute adopts the 4 tier flexible cadre structure, every faculty member will continue with his current designation and pay in the pay band. The AGP will be reset to its new values (Rs.10500.00 for professor and Rs.9500.00 for Associate Professor) as appropriate to the new structure. Neither a selection process nor a personal interview will be necessary.

In some cases, the pay in the pay band may be below the minimum applicable to a particular designation i.e. Rs.43000.00 for Associate Professor and Rs.48000.00 for Professor. As a one-time

measure, incumbents will be permitted to continue with their existing pay in pay band. A faculty member may, however, request appearance before a Selection Committee for up-gradation of pay in the pay band to the minimum value compatible with his AGP. The pay in the pay band will be corrected with prospective effect if so recommended by the Selection Committee and approved by the BoG.

22. Maintaining National Character of NITs

As decided by the Council the institute shall strive to recruit 50% faculty not domicile of that state in which the Institute is located.

23. Miscellaneous

A copy of these regulations including the academic criteria specified for various posts and selection procedure in Annexure – I to IV will be made available to every member of the Selection Committee before start of interviews.

**Prescribed Minimum Qualification and Experience for
Faculty Positions of**

**NATIONAL INSTITUTES OF TECHNOLOGY
(Under the standard 3 tier rigid faculty structure)**

Designation, Pay Band and Academic Grade pay	Essential Qualification	Relevant Experience	Other essential requirements (Expected to be amended upwards with time, as the NIT system achieves higher standards)	Additional Desirable requirements	Age : Preferably below
Assistant Professor (On contract) Grade Pay Rs.6000.00 PB3 + 2 increments	M. Tech.	None	None	Advanced state of Ph.D. work in a reputed institute.	30 years
Assistant Professor Grade Pay: 7000.00	Ph. D.	None	One paper accepted for publication in an SCI journal	Two SCI Journal papers or one patent; may be based on Ph.D. work.	35 years
Assistant Professor Grade Pay Rs.8000.00	Ph. D.	3 years after Ph.D. or 6 years total (not counting Ph.D. enrolment period) after obtaining M. Tech. degree.	2 papers in SCI journals outside Ph. D. work. One ongoing sponsored project for candidates from academia. Two experimental or computational projects added to teaching laboratories where appropriate.	One Ph. D. supervision ongoing; One Patent; Experience in industry or R & D lab. of repute; M. Tech., M. Sc. or B. Tech. project supervision on live industrial problems.	N. A.
Associate Professor Grade Pay Rs.9000.00 PB4	Ph. D.	6 years after Ph.D., or 9 years total (not counting Ph.D. enrolment period) out of which 3 years should be after Ph.D. and as assistant professor or equivalent in a reputed institute, laboratory or industry	4 papers in SCI journals; One Ph. D. guided as sole or principal supervisor. Two projects ongoing or one ongoing plus one completed. One self financed or two Govt. sponsored short- term courses offered. Two experiments or computational projects added to teaching laboratories where appropriate.	One or more patents; Supervising one or more students for Ph. D.; Strong liaison with industry; Offering courses through application of ICT.	N. A.

Table (Annexure)2a

Designation, Pay Band and Academic Grade pay	Essential Qualification	Relevant Experience	Other essential requirements (Expected to be amended upwards with time, as the NIT system achieves higher standards)	Additional Desirable requirements	Age : Preferably below
<p align="center">Professor Grade Pay Rs.10,000.00 PB-4</p>	Ph. D.	10 years after Ph.D. or 13 years (not counting Ph.D. enrolment period) total out of which 7 years to be after Ph.D. including 3 years at Associate professor level.	Two Ph.D.s guided in career as sole or principal supervisor, plus one ongoing. The following during the past 4 years: (i) 3 papers in SCI journals; (ii) One high value sponsored or consultancy project; (iii) Two self financed or four Govt. sponsored short-term courses as coordinator and main teacher, (iv) Two experiments or computational design projects added to teaching laboratories where appropriate.	One or more Patents; Supervised more than three students for Ph. D.; Preparing E-Learning material. At least one self-financed short-term course offered every year. Strong liaison with industry. Offering significant support to institute management; High value sponsored or consultancy projects.	
HAG scale	Ph. D.	Six year as Professor with AGP 10000.00 or higher in an institute of national importance.	4 Ph. D.s guided in career as sole or principal supervisor plus at least one full time resident student continuing. The following during the past six years: (i) 4 papers in SCI journals; (ii) 2 high value sponsored or consultancy projects, plus one ongoing, (iii) 3 self financed or 5 Govt. sponsored short-term courses offered as coordinator and main teacher, (iv) Three experiments or computational projects added to teaching laboratories. (v) Significant contribution to institute management through personal initiatives in responsible positions.	Truly significant contribution in one area – publications, writing of text books or reference books, sponsored projects, consultancy and support to industry, E-learning packages, creative contribution to institute's welfare.	N.A.

Table (Annexure)2b

**Prescribed Minimum Qualification and Experience for
Faculty positions of
NATIONAL INSTITUTES OF TECHNOLOGY
(Under proposed four tier flexible faculty structure)**

Designation, Pay Band and Academic Grade pay	Essential Qualification	Relevant Experience	Other essential requirements	Additional Desirable requirements	Age limit (Desirable)
Assistant Professor (On contract) Grade Pay Rs.6000.00 PB3 + 2 increments	M. Tech.	None	None	One publication in an SCI journal; Advanced State of Ph.D. work in a reputed Institute.	30 years
Assistant Professor (On contract) Grade Pay: 7000.00	Ph. D.	None	None	Two papers in SCI journals or one patent; may be based on Ph.D. work.	35 years
Assistant Professor Grade Pay Rs.8000.00	Ph. D.	3 years after Ph.D. or 6 years total (not counting Ph.D. enrolment period) after obtaining M. Tech. degree.	2 papers in SCI journals outside Ph. D. work. One ongoing sponsored project for candidates from academia. Two experimental or computational projects added to teaching laboratories where appropriate.	One Ph. D. supervision ongoing; 1 Patent; Experience in industry or R & D lab. of repute; M. Tech., M. Sc. or B. Tech. project supervision on live industrial problems.	N. A.
Associate Professor Grade Pay Rs.9500.00	Ph. D.	6 years after Ph.D. out of which 3 years should be at the level of Assistant Professor or equivalent in a reputed university, R & D Lab. or relevant industry.	6 papers in SCI journals; One Ph. D. guided as sole or principal supervisor plus one continuing. Two projects ongoing or one ongoing plus one completed. Two self financed or three Govt. sponsored short- term courses offered as coordinator and main teacher. Four experiments or computational projects added to teaching laboratories where appropriate.	1 or more patents; Supervising two or more students for Ph. D.; Strong liaison with industry; Offering courses through application of ICT.	N. A.

Table (Annexure)2c

Designation, Pay Band and Academic Grade pay	Essential Qualification	Relevant Experience	Other essential requirements	Additional Desirable requirements	Age limit (Desirable)
Professor Grade Pay Rs.10,500.00 PB-4	Ph. D.	10 years after Ph.D.	Three Ph. D. degrees guided in career. The following during the past 4 years: (i) 4 papers in SCI journals; (ii) One high value sponsored or consultancy project; (iii) Two self financed or four Govt. sponsored short-term courses offered as coordinator and main teacher; (iv) Four experiments or computational design projects with added to teaching laboratories where appropriate.	Two or more Patents; Supervised more than three students for Ph. D.; Preparing E-Learning material. At least one self-financed short-term course offered every year. Strong liaison with industry. Offering significant support to institute management; High value sponsored or consultancy projects.	N. A.
Professor HAG Scale	Ph. D.	Six years as Professor with AGP 10000.00 or 10,500.00 in an institute of national importance.	5 Ph.Ds guided as sole or principal supervisor plus at least one full time resident student continuing. The following during the past six years: (i) 5 papers in SCI journals; (ii) 2 significant sponsored or consultancy projects, plus one ongoing; (iii) 3 self financed or 5 Govt. sponsored short-term courses offered as coordinator and main teacher; (iv) Three experiments or computational projects added to teaching laboratories. (v) Significant contribution to institute management through personal initiative in responsible positions.	Truly significant contribution in one area – publications, writing of text books or reference books, sponsored projects, consultancy and support to industry, E-learning packages, creative contribution to institute's welfare.	N. A.

Table (Annexure)2d

Annexure-III

**Recruitment Rules for faculty positions in
NATIONAL INSTITUTES OF TECHNOLOGY**

Common Essential Requirements

[For both 3-tier rigid and 4-tiers flexible systems]

1. Superior academic record at all levels from high school onwards.
2. First class in B. Tech. / M. Sc. and in M. Tech.
3. All degrees from reputed institutions, preferably from institutions of national importance or university departments in India or abroad.
4. Good oral and written presentation skills.
5. Strong command over fundamental subjects.
6. The following shall be considered as essential requirements, without which a faculty member will be deemed unfit for promotion or selection even if he has met or exceeded the prescribed qualification, experience and performance criteria.

Teaching (For teachers of same or different institute)	a)	At least 3 theory subjects (semester long) for each year of post-Ph.D. experience in a teaching institution.
	b)	Commensurate volume of written material for assisting students-lecture notes, problem sheets ppts etc. shared with the students.
	c)	Consistently good (better than Institutes average) score in student feedback on courses taught. [Institutes shall introduce computerized student feedback system and make the summary results available on the internal web site or equivalent publication.]
	d)	Question papers for different exams set by the faculty members to be examined by Selection Committee.
	e)	Introduction of new courses or revision of existing syllabi.
	f)	No adverse record in teaching e.g. negligence in classes or exams.
Institute and professional Activity(For teacher of same or different institute)	a)	Reasonable record of responsibility and creative performance in management of the organization (commensurate with length of service)- responsibility of Dean, HOD, Chairman or Members of Committees.
	b)	Support to extra academic activity of students – NCC, NSS, Sports, Cultural, Music and Quiz etc.
	c)	Organization of student functions.
	d)	Warden ship of hostels and work towards improvement of living conditions of the students.
	e)	Leadership and guiding students in scientific and technical work outside class room
	f)	Assisting management in construction, maintenance, ICT, Lawns & Gardens and providing services in the institute.
	g)	Assisting management in record keeping, website management, document preparation, management of convocation etc.
	h)	Departmental activities – T&P, Seminars, projects, Library etc.
	i)	Collaboration with other Institutions in India and abroad.
	j)	Organising conferences, symposia and activities of professional societies.
	k)	Strictly no adverse record of negligence or dishonesty in discharging one's responsibility.

Table-I (Annexure-III)

A faculty member is not expected to excel in all the fields, but he must contribute in at least two areas with visible contribution to each. Poor record under any of the above items, in terms of dishonesty, negligence, harassing beneficiaries, indifference or not taking up a responsibility will be viewed seriously by the selection committees. When an assignment is given by the administration, the faculty member must show initiative and work proactively towards improvement of his work environment instead of simply holding on to a position.

It is also expected that faculty members will take positive initiatives to be visible at the Institute-level so that they win the trust of the higher management and get assignments to contribute to institutional progress.

Notes:

It is expected that the NITs recruit faculty who have earned their degrees from Institutes of high-standing in India or abroad. The Scrutiny Committee and the Selection Committee are expected to judge the quality of the training that the candidates received during their own academic careers from the standards of the Institutes from where they earned their degrees. It will be within the power and responsibility of these Committees to reject candidates from Institution of low-standing even if their degrees and grades are above the required level. This consideration is applicable to candidates at Assistant Professor level.

A single individual is not expected to meet all the essential performance criteria listed in the tables of Annexure-I and II. ***But in the judgment of the Selection Committee, the sum total of his contribution should exceed the sum total of the essential requirements given in the table above in terms of scholastic effort necessary.***

Experience will be counted only when it is earned in a reputed institute, university, industry or laboratory on a job relevant to the department to which a candidate is applying. Experience shall normally mean the experience earned after award of M. Tech. degree.

The Selection Committee shall consider publications in journals of reasonable standing, ignoring publication in very weak journals. Professional judgment of experts in this matter shall not be questioned.

A publication shall normally mean publications which are covered by the Science Citation Index (SCI) where ever applicable. Papers accepted for publication and actually published will be seen to be at par.

In case of joint publications and joint Ph.D. guidance in an institution where there is no concept of "Principal Supervisor", the Scrutiny Committee and the Selection Committee shall assign fractional credit. The Committee's decisions on such matters shall be final in respective domains.

In Institutes without significant postgraduate or doctoral programme, as a temporary measure, the selection committees may consider and evaluate publication of text books, sponsored projects from funding agencies, formal lecture notes, M. Tech and M.S. projects guided and collaborative work with industry as scholastic work in lieu of experience in guiding Ph. Ds.

The "essential qualifications "and" other essential requirement" given in Annexure-I and II are bear minimum for eligibility to be considered for promotion. An average faculty member is expected to generate performance output higher than the minimum prescribed in the tables in Annexures I and II.

Scholastic achievement and length of service and other essential but not necessary requirements shall form the criteria for promotion. But in matters of fresh selection, other considerations such as expertise of candidates vs. need of the department shall form dominant considerations.

There is no distinction between the requirements for “appointment against vacancy” and “promotion under CAS”, nor there shall be any distinction in the status of the two types of faculty members. A selection process shall cover both internal and external candidates, both being examined together by the same committee, the only exceptions being limiting a selection only to external candidates at entry level of Assistant Professor, and to internal candidates (under CAS) when there is no vacancy in a particular department.

If suitable candidates are not available for positions of Professor or Associate Professor, the positions may, at the discretion of the Board, be utilized for recruiting faculty in lower positions.

Annexure-IV

Procedure for Selection of Faculty in NIT System

Today there is great diversity among the selection procedures being followed in institutions of higher learning in our country. Different systems have evolved in different institutes in response to their emphasis on research and teaching, historical and geographical factors. The procedure outlined here has generally, but not exactly, been followed in most IITs. The procedure is prescribed as a guideline, without insisting that it be followed religiously. Boards of Governors may opt for alternative procedures after examining their merit vis-a-vis the base line procedure given below.

1. The Director will create an “Advisory Committee on Faculty Recruitment (ACoFAR)” with a senior member of the faculty as the Chairman. Normally, he should be the Dean (Faculty Welfare); but Director shall have the discretion to assign the responsibility to Dy. Director or another senior Professor or handle it himself. The Chairman of ACoFAR shall be authorized to communicate with departments, candidates and experts on the advice of Director. In addition, the Committee shall discharge the following functions:
 - i. Examine and advise on distribution of faculty positions among various departments;
 - ii. Proactively search for faculty candidates in India and abroad.
 - iii. Assist the Director in examining, short listing criteria and preparing panels of short listed candidates submitted by departments;
 - iv. Examine and recommend proposals for deviation in age, formal qualifications, industry experience or any other criterion or guideline;
 - v. Reservation of positions for specialization or sub-specialisation and rank of faculty to be inducted; and
 - vi. Proactively search for candidates from reserved categories, and if not available after repeated attempts, prepare proposals for de-reservation in accordance with the relevant rules & regulations.
2. The Institute will create a panel of experts and update it on annual basis. The list will be prepared by taking inputs from departments. Director may also add extra names or delete some from the list. Normally the experts should be drawn from NITs, IITs, IIMs, IISERs, IISc, University departments, major R&D Laboratories (CSIR, ICAR, DAE, ISRO, DRDO etc) and major industry. The list, along with postal and electronic addresses, designations, specialization and other relevant particulars of proposed experts is to be placed before the Senate and then the BoG for their approval. Every higher authority shall have the power to add and delete names. In addition, fellows of INAE and the 3 science academies will be automatically included in the panel. Every attempt should be made to ensure that major specializations of each department are adequately represented in the panel.
3. While the above is a permanent list, upgraded periodically, preferably every year, the BOG, at its discretion, may permit Director to choose experts for every single selection process from the full panel or from specific sub panels.
4. As per NIT Act, the visitor shall nominate one member to the selection committee. It is observed in practice that being present in all sessions of a selection process (that spreads over two to four weeks) becomes hard on the distinguished professors who serve as visitor’s nominees, and they are often unwilling to spare the time. The Ministry will recommend

- to the Hon'ble Visitor to nominate a panel of five distinguished persons in different subject areas to serve as Visitor's nominees and permit institutes to invite them as per their availability and convenience.
5. The director will send a copy of the panels approved by the Secretariat of the Council of NITs for records.
 6. It is extremely important that the suggested panel of experts is examined critically by the Board and the Ministry and any member with a questionable integrity is removed.
 7. Prior to a selection process, the Director will choose experts from the approved panels ensuring a reasonable distribution among specialisations, and to the extent possible, diversity of background, place of work etc.
 8. In addition to the expert members of the selection committee, the Director, as Chairman of the Committee, may invite observers from SC/ST and minority communities or any other person of repute to instill confidence in the minds of the candidates and of the Institute community.
 9. On advice of the Director, the Chairman, ACoFAR will seek from the Departments the specific specializations where new faculty is to be recruited. The HoDs will consult senior faculty colleagues and prepare the proposals to the Institute, which will be collated by the Chairman, ACoFAR and placed before the Director for approval. The Director is expected to review the proposals critically and finalize the draft advertisement including specializations, critical dates, newspapers of advertisement and other details.
 10. Serving regular faculty members shall be eligible to apply for higher positions in their own departments irrespective of their specializations, if they satisfy other advertised criteria.
 11. Application may be received on paper, on-line or both, depending on the technological resources of the respective Institute. In addition, the Institute will consider applications received against standing advertisement, if any, and unsolicited applications.
 12. While applications received within the advertised closing date shall definitely be considered, late applications (upto the interview time) may be considered at the discretion and convenience of the administration.
 13. In addition to the advertisements, all sections of the institute administration - Director, members of ACoFAR, HoDs and all faculty members will make proactive effort to attract applications from prospective candidates, without making any commitment of selection. Such efforts will include postal and email correspondence, telephonic talks and public announcement when there is an opportunity.
 14. Applications, when received, will be organized, relevant information summarized, and sent to the departments by the Registry, for short listing. The objectives of short listing are two folds:
 - i. to reject applications that do not meet advertised criteria and
 - ii. to select the best candidates from the remaining list so that the number of candidates to be called for interview with the experts remains within manageable limits.
 15. Departments will make attempt to set "short listing criteria" that can be easily implemented. But, considering the multiple attributes that need to be considered, it may become necessary to make case by case exceptions. In all such cases the general short listing criteria and the reasons for exception, if any, are to be recorded in writing. Short listing criteria may include, among others, such conditions as:
 - i. Superior academic record – all through first class career or higher grades in B.Tech/M.Sc/M.Tech, higher than advertised criteria,

- ii. Reputation of institutions from where the candidate has obtained his degrees,
 - iii. Number of unsuccessful attempts for the same post [Candidates who have been rejected in the past may be called only if there is a good reason, the reason to be recorded in writing.]
 - iv. Specialisation, including micro specialisation,
 - v. Professional service record - reputation of organization where experience has been earned, nature of job, current activities etc.
16. The Departments' recommendations shall be placed before the Director for the final short-listing. The final list of candidates to meet the Selection Committee will be arrived at in a combined meeting of the Director, the ACoFAR, the HoD and at least three senior faculty members of the Department. In case of a lack of unanimity among the members, the director's decisions shall be final for the purpose of calling a candidate to the interview. The different viewpoints, however, will be recorded in writing and placed before the selection committee who may record their own comments for information of the BOG. The decision of the Board on the selection shall be final and binding.
17. In addition to formal application, candidates will be required to submit reprints/preprints of publications and list of referees. The PIC will organize collection of references and review of publications by independent referees for short listed candidates, both internal and external.
18. The short listed candidates will be invited by the Chairman, ACoFAR or the Registrar for personal interview with the selections committee constituted in accordance with the NIT Act and the statutes of the respective institutes. In addition, the individual institutes may seek seminar presentation in the departments, and/or any other form of academic interaction with the faculty. All such interaction will be open to the faculty and students of the institute and will be well publicized in advance to invite a decent audience. The feedback of the faculty will be communicated to the selection committee by the HoD. Candidates located outside the country or otherwise not in a position of attending personal interview, may be interviewed over video conferencing or be selected in absentia at the discretion of the selection committee.
19. On completion of the interview, the selection committee will record its final recommendations with signature of every member present. The Director, as chairman of the committee will be responsible for writing the recommendation. There shall be no scope for retaining individual view points or details of discussion. Any member(s) with a dissenting opinion may, however, record their observations. On a separate page(with a reference in the main page that will be presented by the Director to the BoG with his own comments on the observations.
- 20 The Selection Committee shall employ the same yard stick to evaluate all candidates for a post or AGP – external, internal, with or without a clear vacancy, and shall prepare a common panel of recommended candidates. Out of this panel, the vacant posts will be filled on the basis of merit without consideration of external or internal candidates.
- The Selection Committee, at its discretion, may recommend to retain the panel for a maximum period of one year or next round of selection for the department, whichever comes earlier, so that vacancies caused during this period can be filled in order of merit. On completion of this period, only the internal candidates will be given promotion under CAS to be adjusted against future vacancies caused by retirement, resignation or creation of new posts, any time in future.

- 21 Recommendations of the selection committees will be placed before the BoG, along with details of sanctioned posts, reservation categories etc, for final approval and subsequent issue of appointment orders by the Registrar.
- 22 If a meeting of the BoG is not scheduled within a short period from the meeting of the selection committee, the director, with approval of the Chairman BoG, may seek the approval of members by circulation. While recommendation of the selection committee is awaiting approval of the BoG, the director may, at his discretion, inform successful candidates, but with a clear line stating that such information is awaiting approval of competent authority and is not legally binding.
- 23 All appointments - regular or CAS, internal or external, will be effective from the date of the Board meeting or any later date fixed by the Board. There shall, however, be no pre-dating of an appointment.
- 24 The following provisions will govern the selection and service conditions of new faculty recruited without a Ph. D. degree
 - i. If sufficient numbers of meritorious candidates with Ph. D. degree are not available in any discipline or sub-discipline, candidates with M. Tech degree may be recruited as Assistant Professor on contract with AGP of Rs.6000.00 only.
 - ii. The contract will be initially for a period of three years, extendable by two more years only on recommendation of a valid Selection Committee.
 - iii. Such faculty, after joining the departments, must be enrolled in the Institute's own Ph. D. programme or be deputed to another Institute at the discretion of the Director, after considering the internal facilities available and the expertise needed in the department. The Institute will make available to the faculty the required equipments, consumables and travel support.
 - iv. During the contract period, if an incumbent shows poor progress on his Ph. D. work or dereliction of duty in teaching, the contract may be terminated prematurely after an enquiry by the ACoFAR, with at least one external expert. Necessary clauses to this effect must be built into the contract at the beginning of the appointment.
 - v. On award of Ph. D. degree, an incumbent will be given regular position with effect from the date of original contract appointment with probation of one year after regularisation. For all future records, the starting point of service will be the date on which the contract service started originally.
 - vi. During the contact period, the appointee will be put in pay band PB-3 with at least 2 non-compounded increments (for M. Tech. degree). He will also be entitled to the usual increments and allowances, and to all other benefits such as P. F., Pension, future gratuity etc. at par with the facilities extended to regular faculty.

Annexure-V

Distribution of Faculty Posts among Departments

Every institute shall have only a finite member of faculty posts sanctioned by the ministry. The distribution of these positions among the departments will be flexible to dynamically maximize the number of faculty in position at any given time. It should be appreciated that institutes will be losers and the cause of education will be hampered if faculty positions which could be filled up in other departments are kept vacant simply because current market scenario is making faculty unavailable in a specific department. Instead of keeping vacant positions, if additional faculty are inducted in other departments, they will contribute to (a) elective courses in teaching, particularly those electives that are subscribed to by students across many departments, (b) research, (c) continuing education, (e) institute, hostel and SAC management etc. A vacant faculty post serves no one. At the same time, it is the responsibility of the Director, and of the Board, to ensure that no department starves of faculty when candidates are available and posts are used up elsewhere.

The following table may be taken as a guide for computing “normal faculty strength” in any department:

B Tech Programme (Annual Intake < 50)	= x
B Tech Programme (Annual Intake > 50)	= 1.5 x
Dual degree with existing M. Tech. specialization	= 0.1 x
Dual degree with exclusive M. Tech. specialization	= 0.2 x
Additional B Tech Programme(Each programme)	= 0.5 x
M.Tech. programme(Each programme)	= 0.5 x
M.Sc. (2 years) programme	= 0.5 x
M.Sc (5 years) programme	= x
MBA Programme (Annual Intake <50)	= x
MBA programme (Annual Intake >50)	= 1.5 x
MCA (3 Years) Programme	= x
Common theory courses for 1 st & 2 nd years (per subject)	= 0.2 x
Common practical courses for 1 st & 2 nd years (per course)	= 0.1 x

Total = nx

$$x = [\text{Sanctioned faculty strength}] \div n$$

The normal strength of every department shall be computed based on the above scheme, additional factors taken into consideration, rounded and approved by the Institute Senate to serve as a guideline for all future recruitment. In case of serious disagreement among members the Senate, the decision of the BOG shall be binding.

The above prescription is based on a principle of equal sharing of teaching responsibility among all faculty members irrespective of rank. In contrast with the prescription of AICTE, professors of NIT are expected to take up a larger share of the teaching job, particularly in large classes and in common fundamental subjects. This principle has the merit of providing better education in basic subjects, It

frees younger faculty to pursue research, particularly those who are enrolled in Ph.D programmes. Experienced faculty are also expected to spend less time in preparing for classes and spend the rest of the time in institute management.

Additional factors shall include, but will not be limited to, expected student strengths in common courses, open electives, being normally offered by the department, common subjects among M.Tech. specializations, strength of M.Tech. courses etc. In general, departments and centers can be classified into two or three groups depending on the above formula and faculty strength calculated for each group.

Annexure-VI

Adjunct, Honorary, Chair, Emeritus, Contractual, Visiting, Ad hoc and Temporary Faculty

In addition to its regular faculty, an institute may augment its intellectual capital by hiring additional scholastic resource through different types of secondary faculty positions. Such faculty members contribute significantly to the department in terms of sharing teaching tasks and enhancing research output. Academic contributions and decisions (e.g award of grades) of such faculty members shall have the same legal validity as those of regular faculty members. The primary purpose of hiring adjunct, honorary, chair, emeritus and visiting faculty is to receive the honor of hosting distinguished professionals and academicians, and not off-loading of routine teaching activity. In contrast, the primary purpose behind hiring ad hoc, temporary or contractual faculty is to provide routine teaching services, particularly when adequate number of regular faculty are not available.

The appointing authority of adjunct, honorary and chair professors shall be the senate while that for emeritus professors and contractual faculty shall be the BOG considering that in the latter case Government money needs to be spent on salary. Director may appoint ad hoc and temporary faculty, who need to be given appointment at short notice and do not constitute a long term responsibility of the institute. The following guidelines will give the administrative details of hiring additional faculty.

(a) Adjunct Faculty

Reputed scientists, engineers, physicians, advocates, artists, civil servants, bankers and other professionals, both serving and retired(from active service), can be inducted as Adjunct faculty. They will bring reputation to the institute, add valuable expertise and practical knowledge and complement the knowledge pool of existing faculty. The following will be some broad guide lines for selection of adjunct faculty.

- (i) They must be persons of repute, comparable to at least the top one third of the regular faculty in professional expertise and reputation in their own fields and organizations.
- (ii) Adjunct faculty will supervise student projects at all levels - UG to Ph.D., carry out sponsored research and consultancy, and teach courses, all these activities either independently or in collaboration with a regular faculty. They may also be members of departmental committees, if their professional experience becomes useful. While teaching courses, they may take responsibility of a full semester-long course or only a part thereof in collaboration with a regular faculty. The degree of involvement will be worked out mutually by the adjunct faculty and the Institute.
- (iii) Adjunct faculty will be appointed by the senate on recommendation of a committee headed by the director. Duration of appointment shall be between 1 and 5 years.
- (iv) Adjunct faculty will be provided with office room, secretarial services and other facilities depending on their involvement in academic activities.
- (v) They shall receive no salary, fee nor any other compensation for their services. All direct expenses such as travel, accommodation, preparation of lecture material etc shall be reimbursed at actuals.
- (vi) Adjunct faculty may receive financial support at the discretion of the director to attend conferences in India or abroad for presenting their work done in the institute, if in the opinion of the director, he has contributed significantly to the institute's academic programme.

Honorary Faculty

Institutes may honour distinguished academicians including its own retired faculty members by conferring on them the status of “Honorary Faculty”. This status will be same as adjunct faculty except that:

- (i) Honorary faculty will be drawn from distinguished persons retired from active service, including the Institute’s own retired faculty, who commit to be engaged in substantial scholastic activity using facilities of the Institute and contribute academic services to the institute without compensation.
- (ii) Duration of appointment shall be “for 5 years” or “for life”.
- (iii) Directors of institutes appointed by the visitor in accordance with the provisions of NIT Act and statutes will automatically be “Honorary faculty for life” on completion of their tenure of service, irrespective of their level of engagement in institute activity in future.

Chair Professors

The Board may create a position of chair professor in a given department with or without a fixed specialization from money donated by an external agency or person. If sufficient funds are available to pay full salary and other benefits from the interest money, a new faculty post with terms identical to regular posts may be created. On the other hand, if limited funds are available, an existing regular faculty position or a secondary position under adjunct, honorary, visiting or contractual categories may be declared as an external chair where the donation received from the external agency will provide such benefits as top-up salary, travel grant or any other benefit to the incumbent.

Professor Emeritus

Faculty superannuating from service in NITs and comparable institutions may be inducted by the Board as Professor Emeritus for a maximum period of 3 years. This provision is limited to faculty with suitable externally sponsored projects or comparable activities, in addition to shouldering normal teaching responsibilities. Such appointment shall be made against sanctioned faculty posts only.

Faculty on Contract

When regular faculty positions cannot be filled, to Board at its discretion, may fill up sanctioned faculty positions “on contract”, where the terms of separation will be far easier than those of regular faculty. Other facilities and mode of selection, to the extent possible, will be same as those for regular faculty. Examples of contractual faculty will include Assistant Professors without Ph.D. degree under the 3 tier system or Assistant Professors during the first 3 years after Ph.D. under the 4 tier system, faculty considered in absentia, and distinguished professors and engineers/scientists who have retired from other organisations.

Visiting Faculty

Academic personnel from universities, institutes, R&D labs, industry or Government in India or abroad, including those on sabbatical leave from other institutions or retired, may be inducted into the institutions for brief periods (Maximum 2 years), with or without remuneration. Such faculty members are expected to work full time taking academic responsibilities at par with regular faculty

members. They may be appointed by Director on recommendation of the Head of the department, and a counterpart faculty member in the department who will serve as a host. Visiting faculty may be provided with mutually agreed honorarium and facilities (e.g. residential accommodation) on discretion of Director.

Adhoc Appointments

To meet urgent need of faculty or to retain a brilliant candidate, the Director is empowered to make ad hoc appointment against sanctioned posts at all levels. Such appointment can be done for a maximum duration of 12 months, and shall not be extended even with breaks. A reasonable pay band, pay and AGP may be worked out, and increment may also be given as per rules. This pay shall not be binding on the selection committee, which may make its own decision, the formal appointment, if at all, shall carry its own pay unrelated to the ad hoc pay. Facilities such as residential accommodation, travel etc, normally available to faculty members, may be extended at discretion of Director. The director will make his decision basing on the recommendation of a small committee of senior faculty colleagues which will include at least one internal Board member, and one external subject expert. A Ph.D. degree with a superior academic career is a minimum requirement for ad hoc appointment at Assistant Professor level. Commensurate work experience in institutions of repute is necessary for higher posts.

Temporary Faculty

The director may recruit "Temporary faculty" against sanctioned posts to tide over serious shortage of faculty to handle UG & PG teaching load. This will be possible only in departments where the number of faculty in position, not counting teachers on long leave, is below $0.75 \times$ normal strength. The candidates need to have at least a Master's degree in Engineering or a doctorate in science/humanities with first class(60% marks or (GPA 6.5/10) at both bachelor's and master's level. Selection can be made on recommendation of a committee of faculty members that must include at least one internal board member and one faculty member of another department. Presence of an external subject expert is not essential.

Duration of appointment shall be one semester to start, and may be extended on semester to semester basis on recommendation of the HOD. Maximum duration of appointment in the entire career of a person shall be limited to 5 semesters. A consolidated remuneration, proportional to the assigned duties may be worked out on mutual agreement. The temporary faculty may be permitted to work full time or part time depending on the remuneration paid to him. In addition to the consolidated remuneration, director may, at his discretion, extend residential accommodation, telephone, travel and other facilities.

Part C

2018

DECLARATION

I undertake that, the institution is well aware about the provisions in the NBA's accreditation manual concerned for this application, rules, regulations, notifications and NBA expert visit guidelines in force as on date and the institute shall fully abide by them.

It is submitted that information provided in this Self-Assessment Report is factually correct. I understand and agree that an appropriate disciplinary action against the Institute will be initiated by the NBA in case any false statement/information is observed during pre-visit, visit, post visit and subsequent to grant of accreditation.

Date: 19-06-2018

Place: Srinagar

Signature & Name
19/06/2018
Prof. Raksh Selgi

Head of the Institution with seal

Prof. Raksh Selgi

Director
National Institute of Technology
Srinagar (J&K)

