



राष्ट्रीय प्रौद्योगिकी संस्थान सिक्किम

NATIONAL INSTITUTE OF TECHNOLOGY SIKKIM

Annual Report 2017-18



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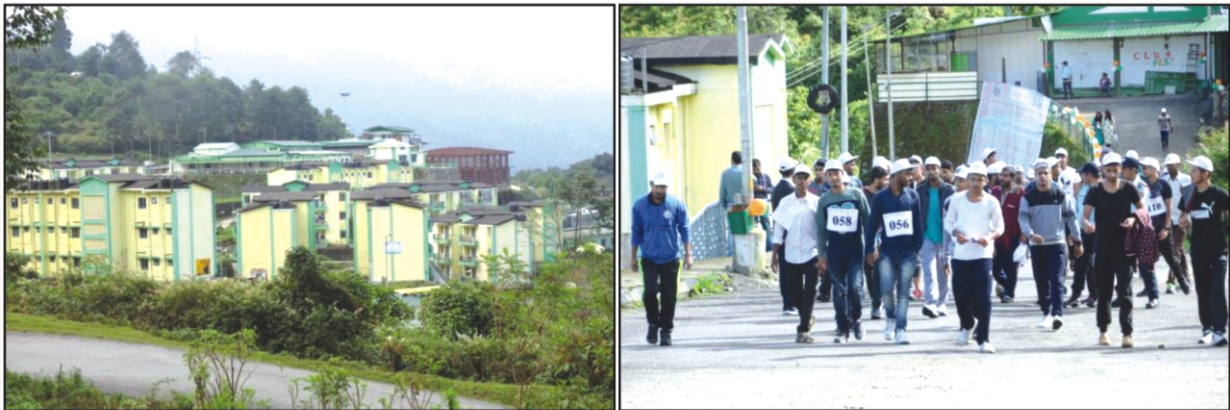


VISION

India has the capability and the responsibility to offer the World Science & Technology essentially with sustainability, through philosophy, conscience and value system. NIT Sikkim will play its role.

MISSION

To develop the students as 'Thinking Engineers' by nurturing them in attaining and enjoying the technical and scientific excellence, global exposure and at the same time in beholding the philosophy and the values for India and the world as a whole.





MESSAGE FROM THE DIRECTOR

It is indeed a great pleasure to present the Annual Report of the National Institute of Technology Sikkim for the FY 2017-18. This is my first year as Director of NIT Sikkim and I am optimistic of the great prospects the institution has in serving the state of Sikkim and our great country.

The NIT Sikkim was established in the year 2010 to impart high quality technical education and to carry out research and development in the field of science and technology in the state of Sikkim. The institute has since taken strides in academic and research excellence and continues to yearn for the highest level of dedication for accomplishment of its objectives.

The institute has been operating from a temporary campus located in Ravangla South Sikkim since its inception. We have done our best to provide the requisite facilities to the students who come from all over the country. The academic environment and provision of a healthy learning friendly campus is of paramount importance and my efforts are directed in this regard. We have created space for Offices, Laboratory, Classroom, Student mess etc through construction of temporary sheds which has, to some extent solved the problem of availability of space at the least possible cost. We await the allotment of a suitable land for the establishment of a permanent campus which shall be developed with World Class facilities.

Although we are faced with a few bottlenecks in the form of availability of permanent campus and lack of connectivity with the rest of the country, I feel proud that the Faculty Staff and students have continued to progress in their respective domain and led the institute in the path of excellence and recognition. The achievements of our students in the face of limited resources are praiseworthy.

This annual report introduces the people associated with the institute and also gives a glimpse into the various academic and extracurricular activities undertaken by the institute. I take this opportunity to thank the Members of the BOG, The Senate, the Faculty Staff and students of the institute for their whole hearted support and efforts towards the growth and development of the institute.

Jai Hind !

With Best Wishes
Prof. M. C. Govil



1. INTRODUCTION

The National Institute of Technology Sikkim is an institution set up in the year 2010 by an Act of Parliament as a part of the 11th Five year Plan to impart high quality technical education and to carry out research and development in the field of science and technology in the state of Sikkim. The institute has also been accorded the status of an Institution of National Importance by the Government of India keeping in view the role of the organization in developing highly skilled personnel in the field of science and technology. At present the Institute is offering 6 B. Tech. program, 3 M. Tech. program, M.Sc. program in Chemistry and Ph.D. program in all Engineering Sciences, and Humanities & Social Sciences. The efforts are made to provide adequate facilities to Students to maintain the quality of learning. However, due temporary campus, remote location, extreme climate and inadequate infrastructure presents huge challenges in managing various activities.

LOCATION

NIT Sikkim, since its inception has been functioning from a temporary campus at Ravangla South Sikkim. The institute carries out academic and research activities in the temporary campus provided by the state government measuring approximately 11 acres. The town of Ravangla is located at a distance of 68 kms from Gangtok, the capital city of Sikkim. The nearest railway station from the campus is New Jalpaiguri Railway Station, West Bengal which is 118 kms from the Campus. Air connectivity is available through Bagdogra Airport which is 132 km away from the Campus.

CAMPUS

The campus of NIT Sikkim at Ravangla, although temporary, is housed at a picturesque location with abundance of natural and scenic beauty. The town of Ravangla is located at a distance of just 2.5 kms from the campus. The town offers essential utilities and services such as Banks, Post Offices and a Primary Health Centre. However, due temporary campus, remote location, extreme climate and inadequate infrastructure presents huge challenges to management. The Ravangla, being the small town have limited amenities and health care facilities.

The temporary campus has the following facilities:

- Sixteen three-storied blocks, each with six 2 small room apartments, totalling to 96 apartments in the campus. These are utilized as boys' hostels, girls' hostels, faculty apartments and staff apartments. These are built under slum-refugee rehabilitation project.
- An Academic Building consisting of class rooms (three nos.), two computer labs, four faculty rooms and the office of the Dean Student Affairs and the Dean Academic. The supercomputing facility "Param Kanchenjunga" is also located in the academic building.
- An Administrative Building consisting of the Director's Secretariat, the Registrar Office Accounts Section, meeting room for Faculty/Administrative/Directorial meetings, and the Examination Cell.




- Two Prefab buildings constructed for hostels are being efficiently used as boarding for approximately 300 students. Some buildings are hired in Ravangla Town for student hostels.
- A playground for various outdoor activities and games.
- An indoor Badminton court in the courtyard of the academic building for sports and other co-curricular activities.
- At present the institute is not having even necessary laboratories and classrooms due to highly inadequate build-up space in this temporary campus.
- The campus is secured by barbed wire fencing and security personnel have been deployed all around the campus.



2. THE BOG AND OTHER COMMITTEES

BOARD OF GOVERNORS

	Name	Contact details
Director, NIT Sikkim, Ex-officio Member-cum Chairman		
	Prof. Mahesh Chandra Govil Director, NIT Sikkim, Ex-officio Member-cum Chairman Ravangla, South Sikkim 737139	Email: director@nitsikkim.ac.in govilmc@gmail.com
Members		
	Shri G.P Upadhyaya, IAS, Additional Chief Secretary, HRDD, Govt of Sikkim	Email: gpupadhyaya@gmail.com
	Shri Ugyen Chopel State nominee	Email: ugyenchopel@gmail.com
	Prof. Chandan Mahanta Dean Student Affairs, Indian Institute of Technology Guwahati	Email: chandan@iitg.ernet.in
	Dr. Achintesh N. Biswas Assistant Professor Department of Chemistry, NIT Sikkim, Ravangla, South Sikkim-737139	Email: achintesh@nitsikkim.ac.in
	Dr. Sangram Ray Assistant Professor Department of Computer Science & Engineering, NIT Sikkim, Ravangla, South Sikkim-737139	Email: sray.cse@nitsikkim.ac.in sangram.ism@gmail.com
	Joint Secretary or his/her nominee Government of India, Dept. of Secondary & Higher Education, Ministry of Human Resource Development, Sashtri Bhavan, New Delhi – 110 001	Email: technicalsection3@yahoo.com

	Joint Secretary & Financial Advisor, Dept. of Secondary & Higher Education, Ministry of Human Resource Development, Shastri Bhawan, New Delhi –110 001	
Secretary		
	Dr. Md. Nurujjaman, Registrar (I/C) & Secretary, BOG, NIT Sikkim, Ravangla, South Sikkim 737139	Email: jaman_nonlinear@yahoo.co.in

FINANCE COMMITTEE

Name	Contact details
Prof. Mahesh Chandra Govil <i>Director, NIT Sikkim, Ex-officio Member-cum Chairman</i>	Email: director@nitsikkim.ac.in govilmc@gmail.com
Shri Ugyen Chopel <i>State nominee</i>	Email: ugyenchopel@gmail.com
Dr. Achintesh N. Biswas <i>Assistant Professor Department of Chemistry, NIT Sikkim, Ravangla, South Sikkim 737139</i>	Email: achintesh@nitsikkim.ac.in
Dr. Md. Nurujjaman, <i>Registrar & Secretary NIT Sikkim, Ravangla, South Sikkim 737139</i>	Email: jaman_nonlinear@yahoo.co.in
Joint Secretary or his/her nominee Government of India, Dept. of Secondary & Higher Education, Ministry of Human Resource Development, Sashtri Bhavan, New Delhi – 110 001	
Joint Secretary & Financial Advisor, Dept. of Secondary & Higher Education, Ministry of Human Resource Development, Shastri Bhawan, New Delhi – 110 001	



BUILDING & WORKS COMMITTEE

Name	Contact details
Prof. Mahesh Chandra Govil <i>Director, NIT Sikkim, Ex-officio Member-cum Chairman</i>	Email: director@nitsikkim.ac.in govilmc@gmail.com
Shri Manish Kumar Jindal <i>Chief Executive Officer (CEO), NABET</i>	Email: manishjindal.hsbte@gmail.com
<i>Executive Engineer (Civil), CPWD, Gangtok Division</i>	Email: ee_gcd01@yahoo.com
Dr. Aurobinda Panda <i>Dean In-charge Planning and Development, NIT Sikkim</i>	Email: aurobind.panda@gmail.com
Mr. Rodan Thapa Chief Engineer, Government of Sikkim	Email: rodanthapa@gmail.com
Dr. Md. Nurujjaman, <i>Registrar & Secretary NIT Sikkim, Ravangla, South Sikkim 737139</i>	Email: jaman_nonlinear@yahoo.co.in
One member nominated by the Central Government not below the rank of Director or Deputy Secretary.	

MEMBERS OF THE SENATE

A.	Director Prof. Mahesh Chandra Govil	Chairman
B.	Registrar Dr. Md. Nurujjaman	Secretary
C.	External Members:	
	Prof Krishna Kumar, Dept. of Physics, IIT KGP	Member
	Prof Supriya Agarwal, Dept. of English, Central University of Rajasthan	Member
	Prof Ravinder Kaur, Dept. of Sociology & Social Anthropology, IIT Delhi/ Prof Mini Chandra, Dept. of HSS, IIT Kanpur	Member
	Prof Dheeraj Sanghi, Dept. of Computer Science and Engineering, IIT Kanpur	Member
	Prof K. R. Niyazi, Dept. of Electrical Engineering, MNIT, Jaipur	Member
	Prof Lalit Kumar Awasthi, Director, NIT Jalandhar	Member
	Prof Virendra Singh, Dept. of Electrical Engineering, IIT Bombay	Member
	Prof M. K. Shrimali, Dept. of Civil Engineering, MNIT Jaipur	Member
D.	All HoDs & Deans, NIT Sikkim	Member

REGISTRAR

Dr. Md. Nurujjaman, <i>Assistant Professor, Department of Physics</i> <i>NIT Sikkim, Ravangla, South Sikkim 737139</i>	Email: jaman_nonlinear@yahoo.co.in
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DEANs & HODs

Dean (Academic Affairs)	Dr. Ranjan Basak
Dean (Administration, Faculty & Staff Affairs)	Dr. Achintesh Narayan Biswas
Dean (Students' Affairs)	Dr. Sumit Saha
Dean (Research & Consultancy)	Dr. Anindya Biswas
Dean (Planning & Development)	Dr. Aurobinda Panda
HOD (Computer Science & Engineering)	Dr. Sangram Ray
HOD (Electronics & Communication Engineering)	Dr. Sanjay Kumar Jana
HOD (Electrical & Electronics Engineering)	Dr. Anjan Kumar Ray
HOD (Mechanical Engineering)	Dr. Shambhunath Barman
HOD (Civil Engineering)	Dr. Anindya Biswas
HOD (Mathematics)	Dr. Ravi Srivastava
HOD (Physics)	Dr. Md. Nurujjaman
HOD (Chemistry)	Dr. Taraknath Kundu
HOD (Humanities and Social Sciences)	Dr. Dhananjay Tripathi



FACULTY-IN-CHARGE_s (FICs)

Alumni Affairs and Resource Generation	Mr. Md. Sarfaraj Alam Ansari
Information and communication Technology Infrastructures	Dr. Pratyay Kuila
Knowledge, Information and Learning Enablement	Dr. Ranjan Basak
Controller In-charge Examination	Dr. Sourav Mallick
Landscaping, Gardening and Environmental Protection	Mr. Neelanjana Dutta
Publications and Web Information System	Dr. Dhananjay Tripathi
Chairperson (Women Grievance Cell)	Ms. Gopa Bhaumik
Games, Sports and Cultural Activities	Dr. Pranab Kumar Kundu
Promotion of Indian Language & Culture	Dr. Dhananjay Tripathi
Training and Placement Activities	Dr. Dhananjay Tripathi
Health Care Services	Dr. Surajit Kundu
Chairperson-Innovation Cell	Dr. Anjay Kumar Ray
SC/ST Cell Chairperson	Ms. Gopa Bhaumik
Store and Purchase Activities	Dr. Taraknath Kundu
Vehicle and Transport Management Activities	Dr. Sourav Mallick
Community Development and Awareness Program	Dr. Shambhunath Barman
Construction and Maintenance Activities	Mr. Debashish Roy
Power and Energy Conservation Initiative	Dr. Pradeep Kumar

3. EDUCATIONAL SYSTEM

The institute is presently offering B. Tech. & M. Tech. in engineering disciplines, M.Sc. in chemistry and Ph.D. Programs in Engineering, Basic Sciences and Humanities.

I. Admission Procedure

B. Tech.

Admission to all Undergraduate courses / Degree Programs is made in the Odd Semester at the first year level through the national JEE (main) examination and allocation of seats is made through the Central Seat Allocation Board (CSAB).

M. Tech.

The courses leading to M. Tech. degree are open to candidates who have obtained the requisite qualification with 60% marks or 6.5 CGPA in aggregate in the qualifying examination. Admission for the GATE qualified candidates is made through Common Admission Process called Central Counseling for Masters' of Technology (CCMT). When GATE qualified candidates are not available, admission is done on the basis of merit as detailed in M. Tech. Sponsored candidates are not eligible to receive scholarship even if they are qualified in GATE.

M. Sc. (Chemistry)

The admission to the M.Sc course is made on the basis of IIT-JAM score through the process of Centralized Counseling for M.Sc in NITs (CCMN). Seats remaining vacant after the CCMN allocation are filled through an Institute Admission Test (IAT) conforming to the eligibility criteria set by CCMN.

II. Program Structure

The duration of the program leading to B. Tech. degree is four years. M. Tech. and M. Sc. is of two years. The curricula for the different degree programs are approved by the Senate. The syllabus of each program and constituent courses containing the scope of studies, detailed instructions to be imparted, course outcome and course objectives are finalized in Curriculum Development Workshop(s) held from time to time and approved by the Senate.

The curriculum of B.Tech. programs also include short-term industrial or research intern ship in any reputed industry, research organization or an institute of repute.

III. Registration

Students are registered in 2nd year (3rd semester) at the end of 1st year on completion of following:

(a) While registering for 3rd, 5th or 7th semester, a student may register for backlog courses of 1st, 3rd or 5th semester and while registering for 4th, 6th or 8th semester, may register for backlog courses of 2nd, 4th or 6th semester. A student has to appear in End-Semester examinations and the grades are awarded based on the marks obtained in the Examination. The Teacher's assessment, mid-term and other continuous evaluation components are carried forward from the original evaluation. The registration for backlog papers is done at the time of semester registration. Backlog courses are awarded one grade lower than the secured grade. ('E' grade remains as 'E' as exception E being the passing grade in the subject).

(b) It is necessary for students to maintain a minimum CGPA of 5.00 at all times.



4. ACADEMIC PROGRAMS OFFERED

Programs offered in 2017-18 academic session:

- i. Four years B.Tech. Programs in the following branches of Engineering and Technology:
 - Biotechnology (BT)
 - Civil Engineering (CE)
 - Computer Science & Engineering (CSE)
 - Electronics & Communication Engineering (ECE)
 - Electrical and Electronics Engineering (EEE)
 - Mechanical Engineering (ME)
- ii. Two- years M.Tech. programs in the following branches of Engineering and Technology:
 - M.Tech. in Computer Science and Engineering
 - M.Tech. in Electronics and Communication Engineering (Microelectronics and VLSI Design)
 - M.Tech. in Electrical and Electronics Engineering (Control, Power and Electric Drives)
- iii. Two- years M.Sc. programs in the Department of Chemistry.

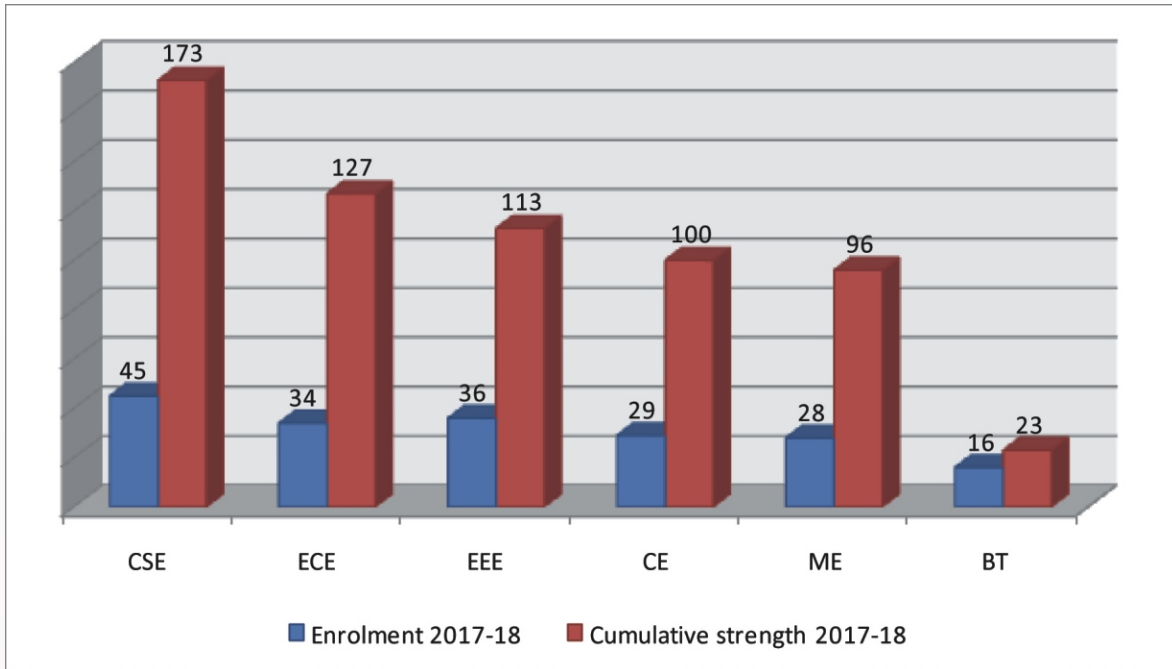
Course-wise Enrolment

B. Tech Program :

The following table shows the department wise B.Tech. enrolment with intake strength, gender and caste breakup for 2017-18 and cumulative strength of 2017-18 academic sessions.

Discipline	Starting year	Intake Capacity (17-18)	Enrolment in 2017-18							Total Student Strength (Cumulative)						
			M	F	SC	ST	OBC	OPEN	Total	M	F	SC	ST	OBC	OPEN	Total
CSE	2010	45	39	6	13	8	13	11	45	145	28	28	15	48	82	173
ECE	2010	40	29	5	8	3	11	12	34	101	26	18	10	36	63	127
EEE	2010	40	34	2	9	3	9	15	36	99	14	14	13	30	56	113
CE	2013	30	25	4	5	3	12	9	29	90	10	18	12	34	36	100
ME	2013	30	27	1	5	2	6	15	28	89	7	12	7	29	48	96
BT	2015	30	9	7	7	1	3	5	16	14	9	7	1	10	5	23
TOTAL		215	163	25	47	20	54	67	188	538	94	97	58	187	290	632

Chart showing the department wise B.Tech. Strength 2017- 2018



M. Tech Program : The following table shows the department wise M.Tech. Enrolment with intake strength, gender and caste breakup for 2017-18 and cumulative strength of 2017-18 academic sessions.

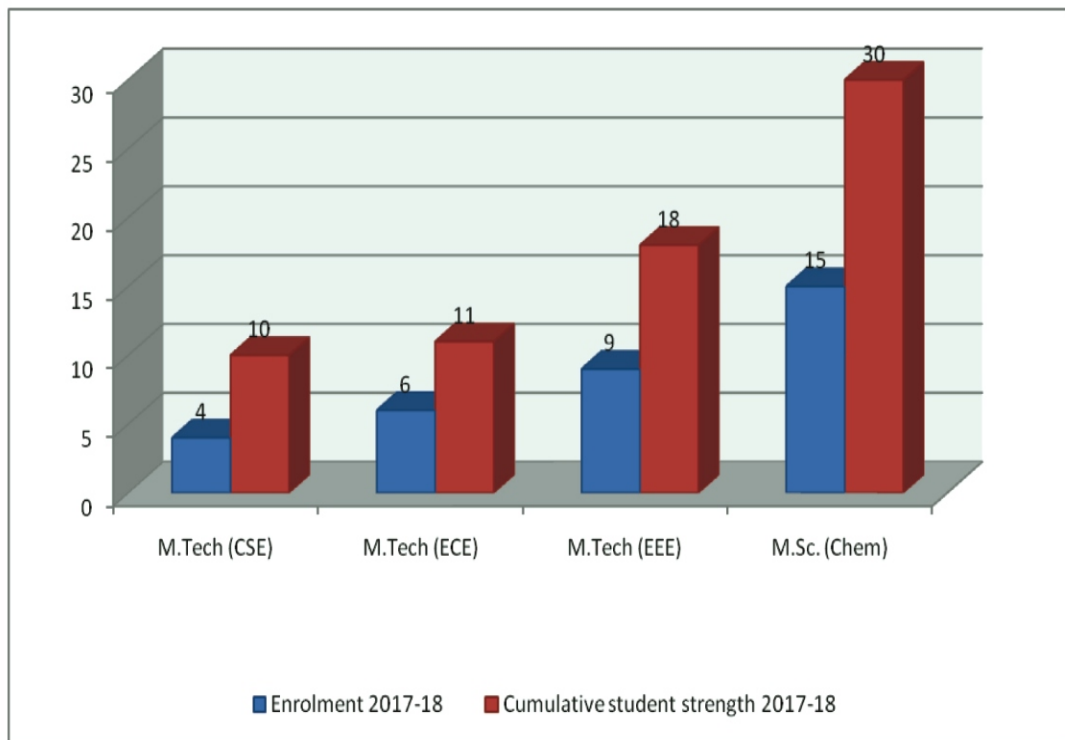
Discipline	Starting year	Intake Capacity (17-18)	Enrolment in 2017-18							Total Student Strength (Cumulative)						
			M	F	SC	ST	OBC	OPEN	Total	M	F	SC	ST	OBC	OPEN	Total
CSE	2015	15	2	2	0	0	0	4	4	8	2	1	0	2	7	10
ECE	2016	15	6	0	0	0	0	6	6	11	0	0	0	0	11	11
EEE	2017	15	9	0	1	0	5	3	9	16	2	2	0	8	8	18
TOTAL		45	17	2	1	0	5	13	19	35	4	3	0	10	26	39

M.Sc. Program: The following table shows the M.Sc. (Chemistry) enrolment with intake strength, gender and caste breakup for 2017-18 and cumulative strength of 2017-18 academic session.

Discipline	Starting year	Intake Capacity (17-18)	Enrolment in 2017-18							Total Student Strength (Cumulative)						
			M	F	SC	ST	OBC	OPE N	Total	M	F	SC	ST	OBC	OPE N	Total
Chemistry	2017	15	9	6	3	0	6	6	15	20	10	5	1	13	11	30
TOTAL		15	9	6	3	0	6	6	15	20	10	5	1	13	11	30



Chart showing the department wise M.Tech./M.Sc. strength

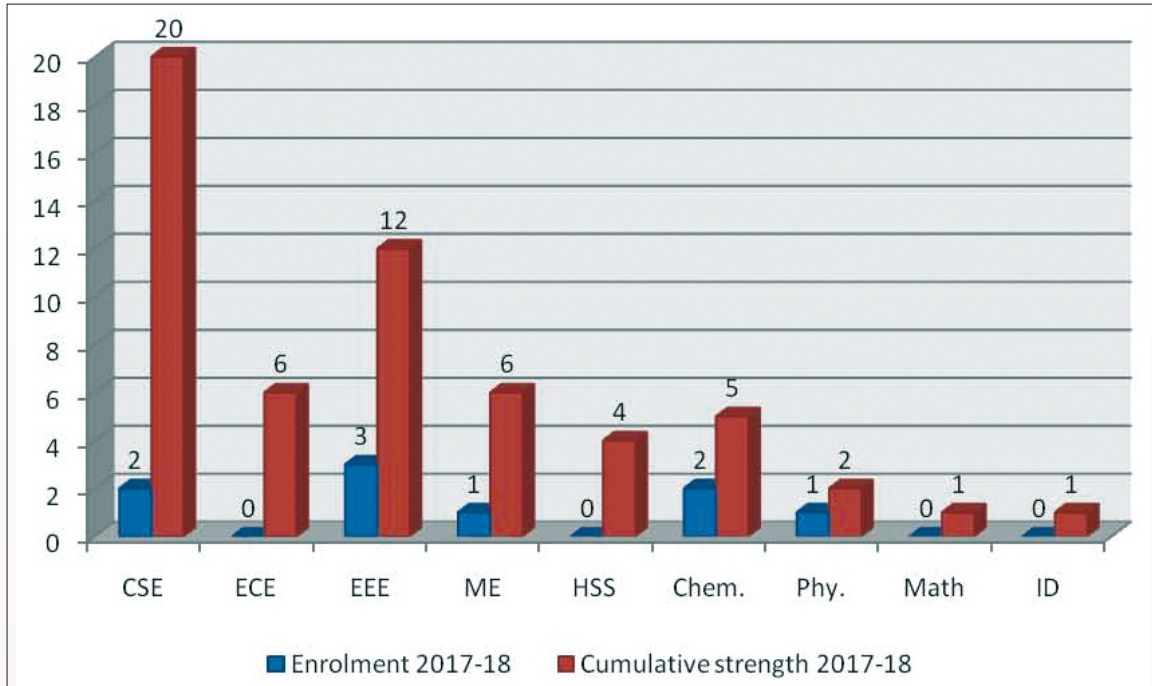


Ph.D. Program : The following table shows the department wise enrolment in PhD program with gender and caste breakup for 2017-18 and cumulative strength of 2017-18 academic session.

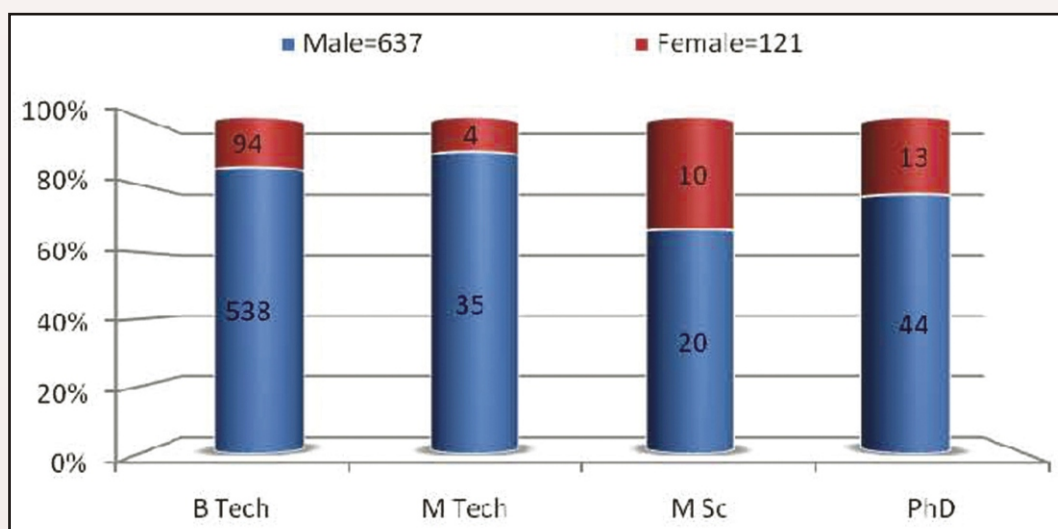
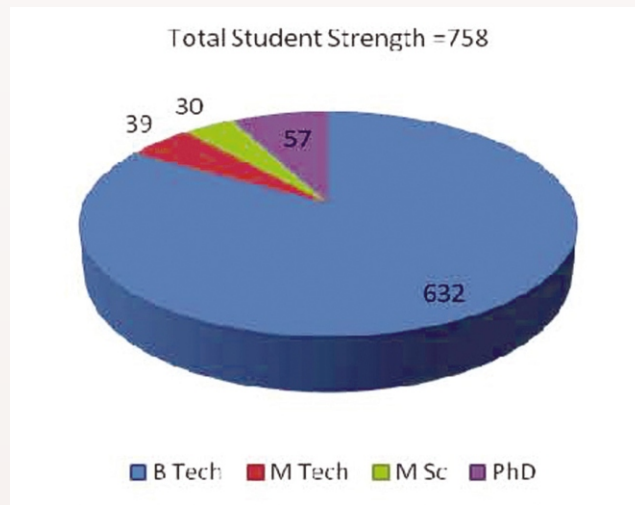
Discipline	Starting year	Enrolment in 2017-18							Total Student Strength (Cumulative)						
		M	F	SC	ST	OBC	OPEN	Total	M	F	SC	ST	OBC	OPEN	Total
CSE	2014	1	1	1	0	0	1	2	17	3	5	1	4	10	20
ECE	2014	0	0	0	0	0	0	0	2	4	1	0	1	4	6
EEE	2014	3	0	0	0	0	3	3	11	1	1	0	2	9	12
ME	2014	1	0	0	0	0	1	1	6	0	0	0	2	4	6
HSS	2015	0	0	0	0	0	0	0	1	3	0	0	2	2	4
Chem.	2015	1	1	0	1	0	1	2	4	1	0	2	1	2	5
Phy.	2016	1	0	0	0	0	1	1	2	0	0	0	1	1	2
Math	2016	0	0	0	0	0	0	0	0	1	0	0	1	0	1
ID	2015	0	0	0	0	0	0	0	1	0	0	0	0	1	1
TOTAL		7	2	1	1	0	7	9	44	13	7	3	14	33	57



Chart showing the department wise Ph.D. strength



Charts showing the course wise total student's strength with gender breakup





v) Tuition fee remission/waiver :

The Institute provides full waiver of tuition fees to the students belonging to ST and SC categories as per MHRD guidelines.

Further, The B. Tech. students whose annual family income is less than one lakh are availing full tuition fee waiver and students with annual family income of less than five lakhs are remitted with 2/3rd of the tuition fees from 2016 onwards *vide* MHRD notification no.33-4/2014-TS.III,

All the GATE qualified M. Tech students receive fellowships as do the PhD scholars. A good fraction of the remaining students of the Institute also receive scholarships from various agencies.

vi) Specialization in M. Tech. (2 years Program)

Courses	1st Year		2 nd Year		Total
	Sanctioned	Actual	Sanctioned	Actual	
CSE (Information Security)	15	06	15	04	10
EEE (Control, Power and Electric Drives)	15	05	15	06	11
ECE (Microelectronics and VLSI Design)	15	09	15	09	18

5. Faculty and Staff :

As per the existing norms laid down by the ministry, CFTIs should maintain a student-faculty ratio of 12:1. As per the present student intake at NIT Sikkim (980 excluding the PhD students), the number of faculty members should be **eighty-four (84)**. At present, only 38 faculty posts have been sanctioned by MHRD.

Therefore, in order to meet the growing aspirations of the students from the State of Sikkim as well as rest of India, **40 additional faculty positions are to be created as detailed below**. Requests to sanction additional faculty positions have been sent to the Ministry of Human Resource & Development (MHRD), Govt. of India.

Cadre	Sanctioned Post	Post to be created	Cumulative no. of Posts
Assistant Professor	22	23	45
Associate Professor	11	11	22
Professor	05	06	11
Total	38	40	78

List of Faculty Members



S. No.	Name	Department
1	Dr Sangram Ray	Computer Science & Engineering
2	Dr. Pratyay Kuila	
3	Md. Sarfaraj Alam Ansari	
4	Miss Gopa Bhaumik	
5	Mr Banavath Balaji Naik	
6	Mr. Tarun Biswas	
7	Mr. Pankaj Kumar Keserwani	
8	Dr. Sanjay Kumar Jana	Electronics & Communication Engineering
9	Mr. Hemant Kumar Kathania	
10	Mr. Surajit Kundu	
11	Miss Reshmi Dhara	
12	Dr. Ajan Kumar Ray	Electrical & Electronics Engineering
13	Dr. Sourav Mallick	
14	Dr. Aurobinda Panda	
15	Dr. Pradeep Kumar	
16	Mr. Molay Roy	
17	Dr. Shambhunath Barman	Mechanical Engineering
18	Dr. Ranjan Basak	
19	Dr. Pranab Kumar Kundu	
20	Dr. Amit Kumar Das	Civil Engineering
21	Dr. Ravi Srivastava	Mathematics
22	Dr. Om Prakash	
23	Dr. Md. Nurujjaman	Physics
24	Dr. Anindya Biswas	Chemistry
25	Dr. Taraknath Kundu	
26	Dr. Achintesh Narayan Biswas	
27	Dr. Sumit Saha	
28	Dr. Dhananjay Tripathi	Humanities and Social Sciences



Moreover, to ensure proper functioning of the Institute, the Institute has sent repeated requests to MHRD to sanction at least Forty-nine (49) additional non-teaching positions as detailed below. The present sanctioned strength is only thirty-seven (37).

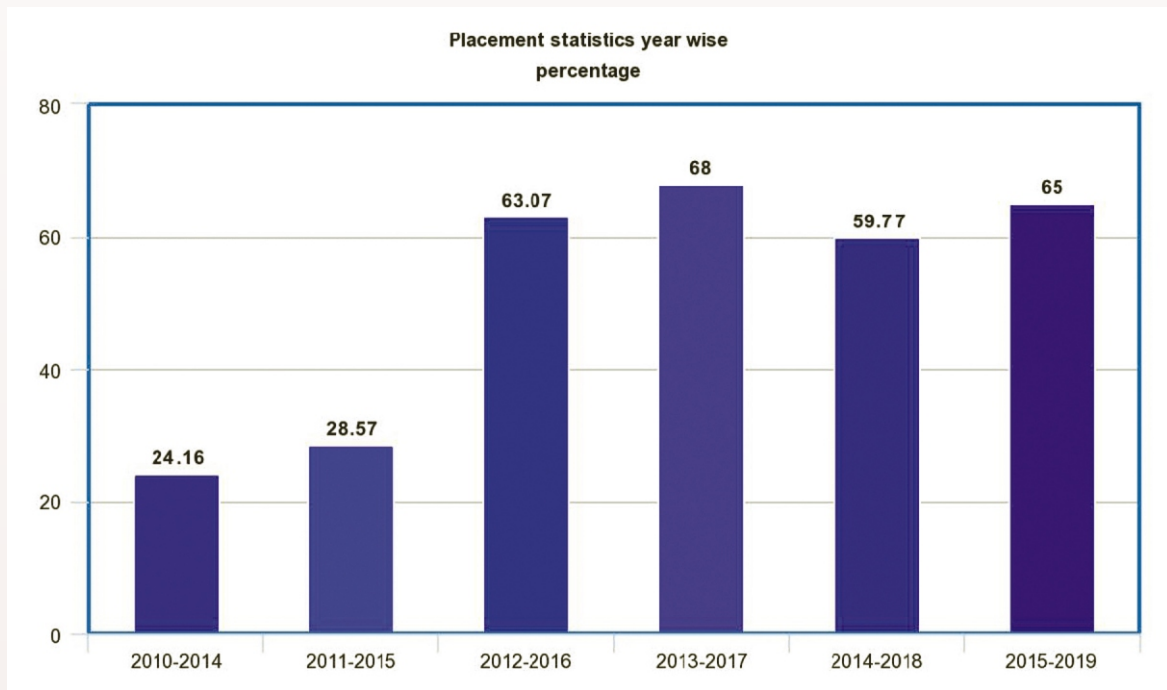
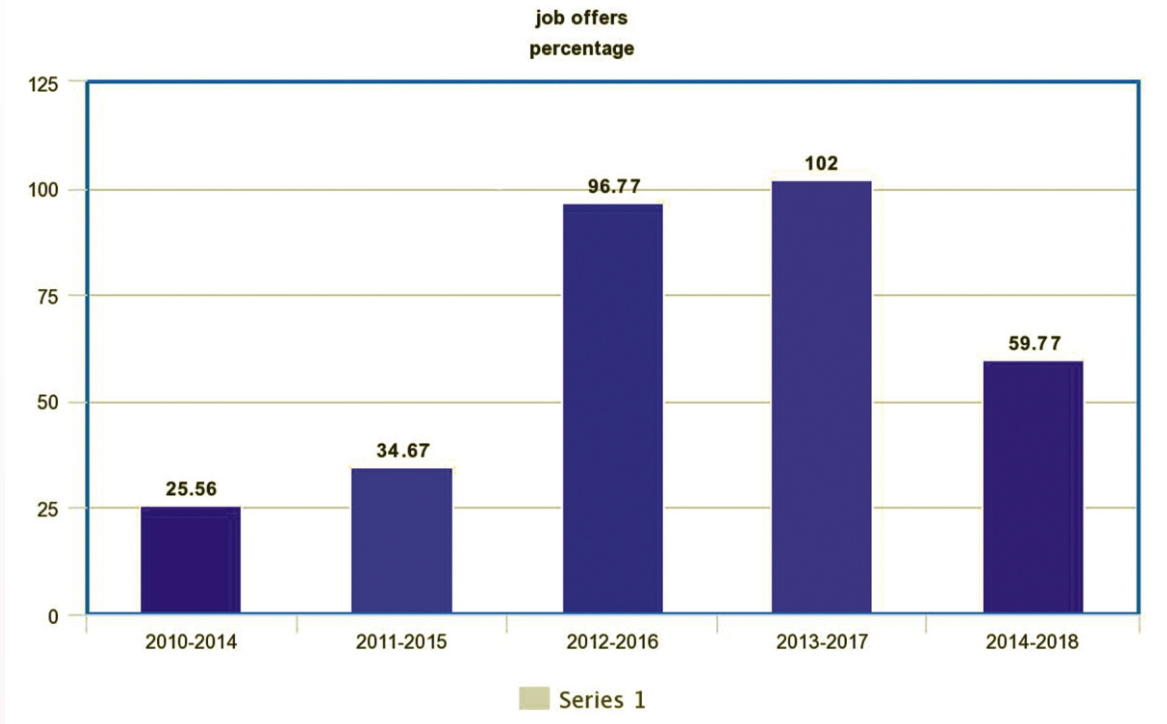
S. No.	Cadre	Post Sanctioned	Post to be created	Cumulative no. of Posts
1	Registrar	01	00	01
2	Deputy Registrar	00	01	01
3	Assistant Registrar	01	02	03
4	Deputy Librarian	00	01	01
5	Assistant Librarian	01	00	01
6	Senior Students Activity & Sports Officer/ Assistant Engineer	01	00	01
7	Executive Engineer	01	00	01
8	Medical Officer	00	01	01
9	Technician (Selection Grade-I), Laboratory Assistant (Selection Grade-I)	00	05	05
10	Technical Assistant/Junior Engineer	08	02	10
11	SAS Assistant	00	00	00
12	Nurse	01	02	03
13	Superintendent/Accountant	03	02	05
14	Personal Assistant	00	01	01
15	Technician/Laboratory Assistant/Work assistant	10	16	26
16	Junior Assistant	05	07	12
17	Stenographer	01	00	01
18	Pharmacist	00	01	01
19	Multi-Tasking Staff	04	08	12
	Total	37	49	86

List of Staff Members

S. No.	Name	Designation
1	Mr. Bapi Mondal	Junior Assistant, Director Office
2	Mr. Amit Tamang	Technical Assistant, ECE
3	Mr. Amit Maity	Technician, ME
4	Mrs. Nishita Chettri	Junior Assistant, KIC Office
5	Mr. Subho Das	Technical Assistant, CE
6	Mr. Amrit Sharma	JE (Electrical)
7	Mrs. Punam Singh	MTS, FICMA Office
8	Mr. Bharat Pradhan	Junior Assistant, Accounts Section
9	Ms. Sujata Dhungana	Junior Assistant, Registrar Office
10	Mr. Suman Pathak	Lab Assistant, CHEM.
11	Mr. Happy Mondal	Lab Assistant, PHY.
12	Mrs. Chandrama Majumdar	Technician, BIO.
13	Ms. Tshering Zangmo Bhutia	Junior Assistant, DIC (SA)
14	Ms. Sonam Choden Tamang	MTS, DIC(AA)
15	Mr. Sidharth Pradhan	Lab Assistant, ECE
16	Ms. Saheli Saha	JE CIVIL
17	Ms. Deepika Chettri	Technical Assistant, EEE
18	Mr. Manish Kumar	Lab Technician, EEE
19	Mrs. Jeneeta Josph	Accountant
20	Ms. Chanda Moktan	Technician, CE
21	Mr. Tapan Chhetri	Lab Technician, CSE

6. Training & Placement Cell :

The Training and Placement Cell is responsible for arranging practical/industrial training, internship, students' placement and activities to improve placement percentage. In spite the remote location the T & P cell has been actively coordinating the all related activities. Some of the major activities relating to the students are Practical Training, Campus Placements, Coordinating pool campus drives. T&P cell also facilitates internship programs and to conducts various workshops, training programs to improve the technical and soft skills of the students.



Branch-wise placed students in Academic Year 2017-2018

Course	Branch	Total students	Placed
B. Tech	Computer Science and Engineering	22	17
B. Tech	Electronics & Communication Engineering	14	6
B. Tech	Mechanical Engineering	18	10
B. Tech	Electrical and Electronics Engineering	20	12
B. Tech	Civil Engineering	13	1
	Total	87	46

Internships

In the Academic year 2017-18, 105 students of II and III-year B.Tech program have undergone Internships during the summer vacation

SL.NO	Organization	Branch(es)	No of Students
1	Google summer of code (GSoC)	CSE	1
2	National Sun Yat-Sen University, Taiwan	CSE, ECE	2
3	GKW Consult, Sikkim	CE	5
4	Ramky Infra, Hyderabad	CE	5
5	Aecom, Kolkata	CE	4
6	Power Grid, Sikkim	CE, EEE	5
7	Indian Institute of Technology Bombay	ECE, CSE	10
8	Indian Institute of Technology Varanasi	CE	2
9	Indian Institute of Technology, Gandhinagar	CE, ECE, ME, EEE	4
10	Indian Institute of Technology Guwahati	ME	3
11	Indian Institute of Technology Mandi	CSE	1
12	POSOSCO, Mumbai	EEE	2
13	PSPCL, Punjab	EEE	1
14	Institution of Plasma Research, Gujarat	EEE	1
15	BSPTCL, Bihar	EEE	12
16	PGCLI, Sikkim	EEE, CE	7
17	NHPC, Sikkim	EEE	3
18	BEL, Bangalore	ECE	1
19	ISRO, Jodhpur	ECE	1
20	CDAC, Bangalore & Silchar	ECE, CSE	2
21	IEST SHIBPUR	ECE	3
22	DLW, Varanasi	ECE, ME	9
23	IISC, Bangalore	CSE	1
24	Voice First3, Hyderabad	CSE	1
25	CDAC, Pune	CSE	4
26	NFC, Hyderabad	ME	6
27	Sun pharma, Sikkim, Punjab	ME, EEE	3
28	CSIR-CMRI, Durgapur	ME	1
29	CSIR-SERC, Chennai	ME	1
30	NESAC, Shillong	CE, ECE, CSE	4



Workshops and Talks

The Training and Placement Cell organized the following workshops and special lectures by eminent academicians and industry persons during the year 2017-18.

Workshops

S.NO	Resource person	Topic	Date
1	Mr. Neil Banerjee (Aecom India Private Limited)	Bridge & Transport Engineering Software Essential for Civil Engineering	24 th April 2018 25 th April 2018
2	Mr. Aviral Sinha (Head of Image Booster, NRC)	Corporate expectations from students during GD & PI	01 st February 2018

Talks

S.NO	Resource person	Topic	Date
1	Dr. T.R. KEM (EX-chairman, CEC, UGC)	Indian higher education as a crossroad	19 th April 2018
2	Capt. S.C. DAS (Indian Navy)	Choosing Indian Navy as a viable career option	03 rd May 2018

Training and Placement Cell Website

The screenshot shows the homepage of the Training and Placement Cell at NIT Sikkim. The page is designed with a blue header and a white main content area. On the left, there is a navigation menu with links like 'Home', 'About Us', and 'Contact Us'. The main content area includes a section for 'Updates' with a list of recent news items, a 'Want to Recruit?' section for employers, and a 'Want a JOB?' section for students. At the bottom, there is a 'Ready, set, recruit!' section with three prominent buttons: 'Register Here', 'TnP Cell contacts you', and 'Conduct Placement Drive'.

Home Page of Training and Placement Cell NIT Sikkim

The T&P Cell has designed and launched its new website. The website gives the updates related to activities of T&P Cell and is for both, recruiters as well as job seekers. The website provides an effective platform for the recruiters to get in touch with the T&P Cell.

7. Campus Life

HOSTEL ACCOMMODATION

As the Institute is located in a temporary campus. The hostel accommodation within the campus is limited. However, Hostel accommodation is made available to all registered B.Tech. /M. Tech. and M.Sc. students within and outside the campus. All the hostel/rooms are equipped with necessary furniture and facilities. In-Campus Hostels are fully Wi-Fi enabled. The students are also facilitated with amenities like TV, Gymnasium, and Indoor games.

(i) In Campus Hostels Details

Chief Warden in – Campus - Dr. Om Prakash

Boys Hostels:

Sl. No.	Name of the Hostel	No. of Rooms	No. of residents	Wardens
1.	Prefab-1	34	124	Dr. Sayantan Mandal
2.	Prefab-2	32	84	Hemant Kr. Kathania
3.	BH- 3	6	26	
4.	BH- 4	6	26	B. Balaji Naik
5.	BH- 5	6	26	

Girls Hostels:

All the girls students are accommodated in in-campus hostels as detailed below.

Sl. No.	Name of the Hostel	No. of Rooms	No. of residents	Wardens
1.	GH-1	6	24	Mrs. Reshmi Dhara
2.	GH-2	4	16	Mrs. Gopa Bhaumik
3.	GH-3	6	20	
4.	GH-4	6	19	Dr. Sangita Deb Barman
5.	FA -2	2	8	
6.	FA-3	2	8	

(ii) Off- Campus Boys Hostel

03 (three) Buildings are hired on a rental basis at Ravangla to accommodate 1st Year B.Tech/M.Tech & M.Sc. Boys Students. Further, bus facility is provided for students residing at off- campus hostels for their convenience.



Chief Warden Off- Campus – Dr. Debajit Saha

Sl. No.	Name of the Hostel	No. of Rooms	No. of residents	Wardens
1.	BH-10	22	45	Dr. Kuntal Mandal
2.	BH-11	17	28	Dr. Amlan Das
3.	BH-13	32	115	Mr. Anindya Malas Mr. Bappaditya Mr. Mandal

(iii) Mess Facilities

There are total 04 (four) student mess are there at NIT Sikkim. One mess is dedicated for the female students and other mess are operated in different hostels and catered to the male students. The student mess committee under the supervision of chief warden and other wardens oversees the smooth functioning and quality of the services provided by the mess contractor.

(iv) Recreation & Sports

Despite the dearth of space in the temporary campus, efforts have been made to provide necessary recreational and games and sports facilities to the students. A multi- gymnasium has been provided to the students. Various multidimensional functions like cultural, literary, sports & games were organized by Institute throughout the year. Students are encouraged and provided with the necessary assistances to participate in Inter NIT Sports, Cultural and Technical events.

(v) Scholarships

Being an Institute of National Importance, NIT Sikkim students are awarded 12 scholarships per batch per year under “Top Class Education for SC students” from Ministry of Social Justice & Empowerment. All the ST category students are awarded scholarships under “Top Class Education for ST students” from Ministry of Tribal Affairs. Many students belonging to Other Backward Classes (OBC) receive scholarships from respective States. Students belonging to Minority communities receive scholarships from Ministry of Minority Affairs (MOMA). Students also receive scholarships from other funding agencies like Foundation for Academic Excellence and Access (FAEA), Swami Dayanand Charitable Education Foundation, S.R Jindal Scholarship, Samsung Star Scholarship, etc.

8. Infrastructure Development in the Temporary Campus

Due to lack of space and extreme climatic condition in the temporary site of the Institute, efforts have been made to create minimum necessary infrastructure. The Estate Section of NIT Sikkim manages all infrastructure related activities. The Institute has been operating from the temporary site from the last 8 years and the campus is in the need for Repairs and maintenance to discharge the necessary academic and administrative activities. Further, with the approval of the Government of Sikkim and the BoG, construction of temporary sheds was

initiated to provide the necessary and basic laboratories and other infrastructure for the students.

In the year 2017-18, the Institute has taken up the following projects, which either are under construction or completed

a. Reconstruction of retaining wall at the backside of old library

The retaining wall at the backside of the old library was damaged during the last monsoon season. The reconstruction work of the same was assigned to CPWD and the work has been successfully completed.

b. Construction of drain and fixing of hand railing near Prefab boy's hostel.

This work was assigned to CPWD and has been successfully completed by CPWD.

c. Construction of Playground.

For the sport activities of the student the construction of playground was much needed and the work was given to CPWD. Most of the work has been successfully completed by CPWD.



(a) Reconstruction of retaining wall



(b) Railing



(c) Playground



(d) External painting

d. External Painting of the existing old building

The external painting work of the old building of NIT Sikkim was assigned to CPWD. The same has been successfully completed by CPWD

e. Progress of workshop shed-1

This construction work of prefabricated shed-I which is to be used for laboratory and other academic purpose has been assigned to CPWD and the progress of the work is not satisfactory, the same is communicated to CPWD to expatiate the work.



f. Installation of LED fitting streetlight near Prefab Boys' Hostel and Playground

The installation of LED fitting streetlight near Prefab Boys' Hostel-II and playground area has been successfully completed by CPWD.

g. Renovation of old boys mess now to be used as Mechanical Laboratory.

This work was assigned to CPWD and the work has been successfully completed. As per the requirement of Mechanical Laboratory the electrical fittings with electric panel has also been installed by CPWD.



Prefabricated Shed-I



Installation of LED fitting street light



Renovation of old boys mess now to be used as Mechanical Laboratory.



9. CENTRAL LIBRARY

The Central Library is an integral part of academic and research activities of NIT Sikkim. It was established in 2012 as the Knowledge and Information Center, providing access to scholarly information, research support, and study facilities. It aims to offer effective services to its users for the fulfillment of their learning needs through its necessary facilities. It has been growing and expanding in the aspects of collection of recourses both in the print and digital forms to meet the requirements of the academic fraternity and students of NIT Sikkim. The library is providing various services to the patrons such as circulation of text and reference books, photocopy, printing and scanning services to mention a few. However, the space is highly limited and need immediate solution to house more learning resources and access to students. Some of the facilities are summarized as follows:

Collection: Central Library has print as well as electronic resources in the collection.

(a) Print collection :

Central library has a good collection of text books, reference books, encyclopedias, dictionaries, Journals/Magazines.

(b) Electronic collection :

Central Library possesses rich electronic resources to meet the requirement of respective departments including both engineering as well as basic science departments. The subscribed e-resources are as follows:

1. Full Text Databases :

- A. Science Direct
- B. IEEE
- C. Springer-Nature

2. Bibliographic Databases such as Sci-Finder

3. **E-books:** Central Library possesses a number of titles of e-books and Kindle e-books along with 4-Kindle e-book readers.

(c) Other facilities :

It is well-equipped with photocopy, printing and scanning facilities. Library is fully automated with an Automation Software (LIBSYS 7). Circulations of books are executed through the barcode system.

8. Examinations and Assessments

The Institute has an examination cell, which is responsible for organization of various evaluation, and examination related activities for students. Following are the records of the graduating batch for the academic year 2016-17.



Examination results for the B.Tech. programs

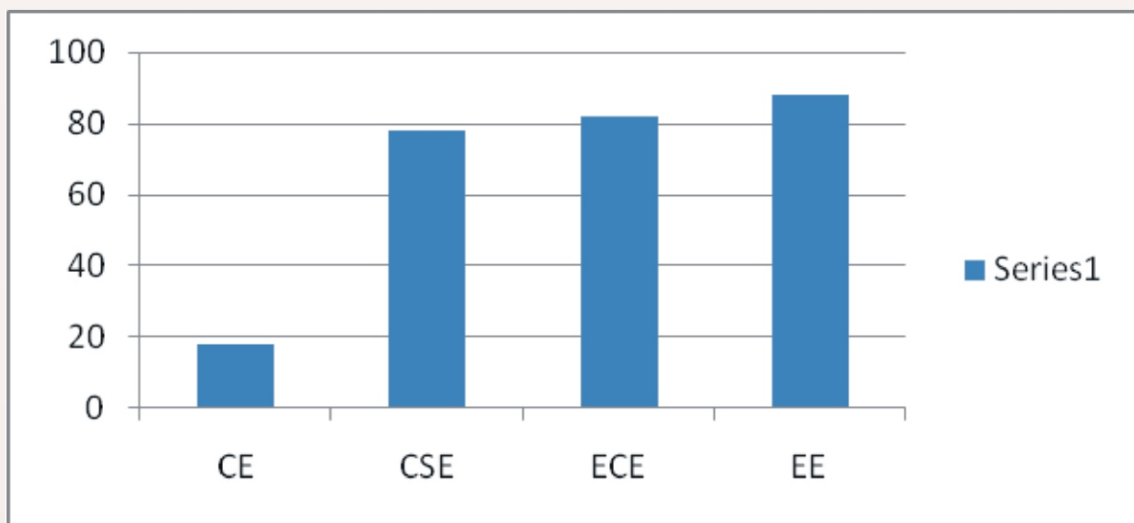
Sl. No.	Branch	No of students appeared	First Division	Second Division	Total	Percentage of Pass
1	Civil Engineering	18	18	0	18	100
2	Computer Science and Engineering	18	17	1	18	100
3	Electronics and Communication Engineering	12	11	1	12	100
4	Electrical and Electronics Engineering	11	10	1	11	100

Examination results for the M.Tech.

Sl. No.	Branch	No of students appeared	First Division	Second Division	Total	Percentage of Pass
1	Computer Science and Engineering	6	6	0	6	100

Degree awarded (B.Tech)

Sl. No.	Branch	Total
1	Civil Engineering	18
2	Computer Science and Engineering	78
3	Electronics and Communication Engineering	82
4	Electrical and Electronics Engineering	88
Total Degree awarded		266



Degree awarded up to 31.03.2018 (M. Tech)

Sl. No.	Branch	Total
1	Computer Science and Engineering	6

10. Medical Facilities :

NIT Sikkim has a small medical unit in the Institute's premises that is open from 08:00 A.M. to 06:00 P.M. on a daily basis; however, it is functional round the clock in emergency.

Student and staff members of institute can avail free OPD treatment and medicines in the medical unit. Four visiting medical consultants (two general physicians, one orthopedic and one ENT specialist) are available in the medical unit in altered visiting hours. A dedicated nursing team is also present to provide first aid, dressing, intravenous fluid infusion and blood pressure-pulse rate-weight measurement services.

One Ambulance with first aid kit is available for student and staff members of institute. Medical insurance facilities are available to the students for IPD treatment.



11. Innovation Cell :

The innovation cell encourages and supports students to explore their technical creativity. The following institute programs have given platform for students to showcase their talent:

- Annual Technical Exhibition during Abhiyantran 2017.
- Research and Innovation Summit during Abhiyantran 2017.

Students were engaged in work including prototyping of a solar bulb, 3D modeling of the campus. Mr. Pritam Kumar, a 2nd year student from the department of EEE participated in a national level innovation project competition at NIT Uttarakhand with his project on solar bulb.

Dr. Anjan Kumar Ray (Chairperson of the Innovation Cell) and Mr. Pritam Kumar (2nd year EEE student) were invited to the Rashtrapati Bhavan during the Festival of Innovation and Entrepreneurship (FINE 2018) in March 2018. Mr. Pritam Kumar's work (mentored by Dr.



Kuntal Mandal, Department of EEE) on Solar Bulb was selected for display at the FINE 2018.



Figure: Innovation representation by NIT Sikkim at the Rashtrapati Bhavan, India

12. Academic Departments

Computer Science and Engineering

The Department of Computer Science and Engineering (CSE) is one of the departments that started operating from the initiation of National Institute of Technology Sikkim in the year 2010. The department aims to provide an outstanding research environment complemented by excellence in teaching.

The CSE department offers four years B.Tech. degree, two years M.Tech. degree and PhD programs. The department has a comprehensive curriculum on topics related to all aspects of Computer Science with an emphasis on applicability that is provided using latest techniques of engineering. The course structure is up-to-date and includes courses on state-of-the-art to equip the students and teachers with the latest developments in the field. It is also proposed to develop interdisciplinary and multidisciplinary projects based on the expertise of faculty members.

The areas of research are Cryptography, Network Security, Parallel-Distributed and High-Performance Computing, Algorithms, Bioinformatics, Computer Animation, System Software, Software Engineering, Cloud Computing and Wireless and Sensor Networks to build research groups and leverage the research activities in Sikkim in particular, and North-East region in general using a coordinated effort of various other organization working in the field of community development using science and technology. The Department has state-of-the-art infrastructure supported by high speed Ethernet and wireless network.

The department enjoys a rich research culture through various projects under schemes such as Visvesharya scheme, DIT and DST project grants, National Mission on Himalayan Studies, specific developmental projects for north-eastern region, etc. The department also contributes towards community developments through Unnat Bharat Plan and Scientific lifestyle development of local community (as per scheme of Department of Atomic Energy). At present department have limited laboratories due to non-availability of laboratory space in the temporary campus. However, the institute is trying to create more space by construction industrial sheds to establish necessary laboratories.

Admission Statistics :

2017-18	Student Intake	Student Admitted
B.Tech.	45	44
M.Tech.	15	04
Ph.D.	12	

Programs/Courses offered by the department

- B.Tech in Computer Science and Engineering
- M.Tech in Computer science and Engineering with specialization in Information Security
- PhD in Computer Science and Engineering

Faculty Details :

Sl. No.	Name, Designation and Research Interest(s)
1	Prof. Mahesh Chandra Govil, (director@nitsikkim.ac.in) Director, M.Tech. (IIT Roorkee), Ph.D. (IIT Roorkee) Real Time Systems, Parallel & Distributed Systems, Fault Tolerant Systems, Cloud Computing.
2	Dr. Sangram Ray, (sray.cse@nitsikkim.ac.in) Assistant Professor & HOD (I/c), Ph.D. (IIT (ISM) Dhanbad) M.Tech. (IIT (ISM) Dhanbad) Cryptography and Information Security, Public Key Infrastructure, Elliptic Curve Cryptography, Content Centric Networking, Internet-of-Things.
3	Dr. Pratyay Kuila, (pratyay_kuila@nitsikkim.ac.in) Assistant Professor, Ph.D. (IIT Dhanbad (ISM), M.Tech. (NITTTR Kolkata) Algorithm Design, Compiler Design, Automata Theory, Wireless Sensor Networks, Soft Computing.
4	Mr. Md. Sarfaraj Alam Ansari, (sarfaraj@nitsikkim.ac.in) Assistant Professor, M.Tech. (NIT Durgapur), Ph.D. pursuing from NIT Sikkim Network Technology, Information Security & Risk Management.
5	Mr. Pankaj Kumar Keserwani, (Pankajkeserwani.cse@nitsikkim.ac.in) Assistant Professor, MS (IIIT, Allahabad) Ph.D. pursuing from NIT Sikkim Information Security.
6	Ms. Gopa Bhaumik, (gopa.bhaumik09@nitsikkim.ac.in) Assistant Professor, M.Tech (NIT Durgapur), Ph.D. pursuing from NIT Sikkim Image Processing, Programming Languages.
7	Mr. Tarun Biswas, (tarun.cse@nitsikkim.ac.in) Assistant Professor, M.Tech. (NIT Durgapur), Ph.D. pursuing from NIT Sikkim Nature-Inspired Optimization Algorithms, Edge Computing, Big Data.
8	Mr. Banavath Balaji Naik, (balajinaik07@nitsikkim.ac.in) Assistant Professor, M.Tech. (NIT Trichy), Ph.D. pursuing from NIT Sikkim Cloud Computing, Internet of Things, Computer Network.



Temporary Faculty	
1	Dr. Shefalika Ghosh Samaddar, Ph.D. (<i>shefalika99@nitsikkim.ac.in</i>) Information Security.
2	Dr. Biri Arun, Ph.D. Data Mining
3	Mr. Rajat Goel, <i>Computer Networks</i>

Laboratory facilities

- **Computer Laboratory 1**

Programming Language, Data Structure and Algorithm, Web Design etc. are conducted.



- **Computer Laboratory 2**

Laboratories related to Operating System, Computer Network, Data Base Management System etc. are conducted in Computer Lab-2.



- **Computer Laboratory 3**

Computer Graphics, Pattern Recognition, Advanced Computer Network etc. are conducted.



- **Cloud Computing Laboratory**





- **High Performance Computing Laboratory**



Ongoing Projects/Schemes in the Department

Visvesvaraya Ph.D. Scheme in Electronics and IT funded by MEIT, Govt. of India (30 lacs approx.)

Collaboration with other Department/Institutes

- University of Bremen, Germany
- Indian Institute of Technology, Kharagpur
- Indian Institute of Technology, Guwahati
- CDAC, Pune

Special Lecture/ Seminar/Workshop organized

One Week Workshop on Staff Development (to enhance the working capability with MS-office) during February 21-25, 2018 at National Institute of Technology Sikkim (Role – Coordinator) by Dr. Sangram Ray.

Outreach Activities

- Two expert lectures in “*One Week Short Term Training Program on Advanced Computational Techniques in the field of Mining Engineering*” at National Institute of Technology Raipur, Chattisgarh, India, on November 13-17, 2017 delivered by Dr Sangram Ray.
- *Special Talk on “System Programming and Advancement in Compiler Construction” at Zeal College of Engineering & Research, Pune-411041, Maharashtra, on 13th, December 2017 delivered by Dr Pratyay Kuila.*

Publications

International Journals

- Tarun Biswas, Rajat Bhardwaj, Anjan Kumar Ray and Pratyay Kuila, “A Novel Leader Election Algorithm based on Resources in Ring Networks,” *International Journal of Communication Systems* (Wiley), DOI: 10.1002/dac.3583 (2018).
- Tarun Biswas, Pratyay Kuila, Anjan Kumar Ray and Sangram Ray “Resource Factor-Based Leader Election for Ring Networks,” IC4S 2017, AISC (Springer), Vol. 553, pp. 251-257 (2017).

International Conferences

- Dipanwita Sadhukhan and Sangram Ray, “*Cryptanalysis of an elliptic curve cryptography based lightweight authentication scheme for smart grid communication*”, Proc. of 4th International Conference on Recent Advances in Information Technology (RAIT-2018), Indian Institute of Technology (ISM) Dhanbad, Jharkhand, India, March 15-17, 2018, pp: 1-6. (Available online in IEEE Xplore, DOI: [10.1109/RAIT.2018.8389040](https://doi.org/10.1109/RAIT.2018.8389040))
- Prasanta Kumar Roy, Sangram Ray and Mou Dasgupta, “*Energy Efficient Content Dissemination Architecture for Content Centric Network*”, Proc. of International Conference on Innovative Research in Engineering and Science (IRES-2017), Asian Institute of Technology Bangkok, Thailand, June 16-17, 2017, pp: 1-5.
- Mou Dasgupta, G. P. Biswas and Sangram Ray, “*Performance Enhancement by Traffic Re-scheduling of Network Nodes*”, Proc. of International Conference on Innovative Research in Engineering and Science (IRES-2017), Asian Institute of Technology Bangkok, Thailand, June 16-17, 2017, pp: 6-10.
- Suneet K Gupta, Pratyay Kuila and Prasanta K. Jana, “Energy Efficient Routing Algorithm for Wireless Sensor Networks: A Distributed Approach,” *Communication and Computing Systems: Proceedings of the International Conference on Communication and Computing Systems*, CRC Press, Taylor & Francis Group, pp. 207- 213, (2017). (ISBN 978-1-138-02952-1).
- Tarun Biswas, Pratyay Kuila and Anjan Kumar Ray “Multi-Level Queue for Task Scheduling in Heterogeneous Distributed Computing System,” 4th Int. ICACCS 2017, *IEEE Explore*, pp. 1-6, (2017).



- Tarun Biswas, Pratyay Kuila and Anjan Kumar Ray, “Multi-level queue for task scheduling in heterogeneous distributed computing system,” ICACCS 2017, IEEE, pp. 1-6, (2017).

International Book Publication

- Pratyay Kuila and Prasanta K. Jana, “Clustering and Routing Algorithms for Wireless Sensor Networks: Energy Efficient Approaches,” 1st Ed., *CRC Press (Taylor & Francis Group)*, September, 2017, ISBN 9781498753821, ISBN-10: 1498753825, ISBN-13: 978-1498753821.

Involvement in Community Development during 2017-18

- Lectures by Senior Faculty members to local schools.
- Computer exposure to the children in local villages and the students of local schools.
- Department/Laboratory visit by school students.

Department of Electronics and Communication Engineering:

The Department of Electronics and Communication Engineering was established in 2010. The Department aims to provide excellence in teaching and an outstanding research environment to produce future engineers and entrepreneurs of the country. The Department offers four years B. Tech program in Electronics & Communication Engineering, two years M. Tech program in Microelectronics & VLSI Design and PhD program in Engineering. The Department has adequate laboratory facilities with state-of-the-art equipment to encourage the students to acquaint with the latest technologies. At present department have limited laboratories due to non-availability of laboratory space in the temporary campus. However, the institute is trying to create more space by construction industrial sheds to establish necessary laboratories.

Admission Statistics:

2017-18	Student Intake	Student Admitted
B. Tech. Specialization: Electronics and Communication Engineering	40	38
M. Tech. Specialization: Microelectronics and VLSI Design	15	06

Faculty Details:

SN	Name, Designation and Research Interest
1	Dr. Sanjay Kr. Jana (skjiit@gmail.com, skjnit@nitsikkim.ac.in) <i>Assistant Professor & HOD (I/c), Ph. D (IIT Kharagpur), M. Tech (Jadavpur University)</i> High Speed Semiconductor Devices, Analog IC Design
2	Mr. Hemant Kr. Kathania (hemant.ece@nitsikkim.ac.in) <i>Assistant Professor, Ph. D (NIT Sikkim), M. Tech (IIT Guwahati)</i> Signal and Speech Processing
3	Mr. Surajit Kundu (surajit.kundu@nitsikkim.ac.in) <i>Assistant Professor, Ph. D (NIT Sikkim), M. Tech (IIT Kharagpur)</i> Antenna development (Ultra-Wideband, MIMO, 5G etc.), Ground Penetrating Radar, Wireless communication, Digital Communication
4	Ms. Reshmi Dhara (reshmidhara@yahoo.co.in) <i>Assistant Professor, M.Tech. (IIT Kharagpur), Ph. D pursuing from NIT Sikkim</i> Circular Polarized Microstrip Antenna
Temporary Faculty	
1	Dr. Waquar Ahmad, Ph.D. (iitk.waqar@gmail.com) Speaker Recognition/Verification Automatic Speech Recognition Detection and Classification of Acoustic Scenes and Events speech enhancement
2	Dr. Bappaditya Mandal, Ph.D. (bappaditya.kgec@gmail.com) Body wearable antenna, Printed Antenna, Microstrip Antenna
3	Dr. Sukanta Dhar, Ph.D. (sukanto001@gmail.com) Solar Photovoltaic, Light Trapping, Study of Nano-materials
4	Dr. Ayan Chatterjee, Ph.D. (ayanchatterjee@nitsikkim.ac.in) Wideband Planar Antennas, Periodic Bandgap Structures (Frequency Selective Surfaces, Artificial Magnetic Conductors etc.)
5	Dr. Sandeep Mishra, Ph.D. (ssandeep.mmishra@gmail.com) Memory design, Digital Design, Low Power VLSI, Image Processing
6	Ms. Priti Gupta (pritigupta@nitsikkim.ac.in) <i>Project Faculty(SMDP-C2SD), M.E (NITTTR Chandigarh)</i> Analog IC design

Laboratory Facilities

- Analog Circuits Laboratory
- Digital Electronics Laboratory
- Analog Communication Laboratory
- Digital Communication Laboratory
- Electromagnetics and Antenna Laboratory
- Digital Signal Processing Laboratory
- VLSI Design Laboratory
- Microprocessor and Microcontroller Laboratory
- Microwave Engineering and Antenna Laboratory



Membership of Technical Association/Society

SN	Technical Societies	Type of Membership	Name of Faculty
1	IEEE, IEEE Signal Processing Society, International Speech Communication Association (ISCA)	Member	Mr. Hemant Kr. Kathania
2	Forum of Scientists, Engineers & Technologists	Member	Mr. Surajit Kundu
3	IEEE Kolkata Section	Member	Dr. Bappaditya Mandal
4	Forum of Scientists, Engineers & Technologists	Member	Dr. Sukanta Dhar
5	Institution of Engineers (India)	Associate Member	Dr. Ayan Chatterjee
6	IEEE Kolkata Section, FOSET	Member	
7	IEEE	Member	Dr. Sandeep Mishra

Seminar/Workshop/STC/FDP/IEP Conducted

SN	Program	Organizer
1	Faculty Development Program (FDP) on “Core VLSI Design” from 4 th April 2017 to 9 th April 2017	E & ICT Academy, IIT Guwahati and NIT Sikkim
2	Instruction Enhancement Program (IEP) on “Mixed Signal and RFIC Design” from 5 th June 2017 to 9 th June 2017	IIT Kharagpur and NIT Sikkim
3	Invited lecture delivered by Prof. Debatosh Guha, HOD, Inst. of Radio Physics and Electronics, University of Calcutta, on 23.03.2018	Dept. of ECE, NIT Sikkim

Research Project/Scheme

Name of the Project	Sponsoring Agency	PI and Co-PI	Start Year	Close Year
SMDP C2SD: Development of a chip (FPGA based board level digital designs), especially for earthquake prediction and RF testing	MeitY	Prof. Mahesh Chandra Govil (PI) Dr. Sanjay Kumar Jana (Co-PI)	2015	Ongoing
Visvesvaraya Project: Design of high speed semiconductor devices	MeitY	Dr. Sanjay Kumar Jana (PI)	2016	Ongoing

Ph. D. Scholars:

Name of the Student	Thesis Title/Research area	Supervisor
Hemant Kumar Kathania	Role of Prosodic Features and Prosody Modification in Improving Children's Mismatched ASR	Prof. A. B. Samaddar Dr. Sanjay Kumar Jana (Co-supervisor)
Surajit Kundu	Design Development and Performance Evaluation of Ultra-wideband Printed Antennas with Radiation Improvement for Ground Penetrating Radar Applications	Dr. Sanjay Kumar Jana
Reshmi Dhara	Circular Polarized Microstrip Antenna	Dr. Sanjay Kumar Jana
Subhanil Maity	Design of Power and Area Optimized High Speed Frequency Divider	Dr. Sanjay Kumar Jana
Keshab Das	Design and Analysis of Wideband LC Voltage-Controlled Oscillator (VCO) for High Frequency Applications	Dr. Sanjay Kumar Jana
Nigidita Pradhan	Design and Analysis of Phase Frequency Detector with Minimized Dead Zone for High Frequency PLL	Dr. Sanjay Kumar Jana
Priti Gupta	Transconductance – Capacitance Filter Design for the PLL applications	Dr. Sanjay Kumar Jana
Jayati Rauth	Design and Optimization of High Electron Mobility Transistor	Dr. Sanjay Kumar Jana



Publications

Publication in Journals

- Surajit Kundu, and Sanjay Kumar Jana, “Leaf-shaped CPW-fed UWB antenna with triple notch bands for ground penetrating radar applications,” *Microwave and Optical Technology Letters*, vol. 60, no. 4, pp. 930-936, 2018.
- Surajit Kundu, and Sanjay Kumar Jana, "A compact umbrella shaped UWB antenna for ground-coupling GPR applications," *Microwave and Optical Technology Letters*, vol. 60, no. 1, pp. 146-151, 2018.
- Surajit Kundu, and Sanjay Kumar Jana, “A leaf-shaped CPW-fed UWB antenna for GPR applications,” *Microwave and Optical Technology Letters*, vol. 60, no. 4, pp. 941-945, 2018.
- Surajit Kundu, Ayan Chatterjee, Sanjay Kumar Jana, and Susanta Kumar Parui, “A compact umbrella-shaped UWB antenna with gain augmentation using frequency selective surface,” *Radioengineering*, vol. 27, no. 2, pp. 448-454, 2018.
- Surajit Kundu, Ayan Chatterjee, Sanjay Kumar Jana, and Susanta Kumar Parui, “Gain enhancement of a printed leaf shaped UWB antenna using dual FSS layers and experimental study for ground coupling GPR applications,” *Microwave and Optical Technology Letters*, vol. 60, no. 6, pp. 1417-1423, 2018.
- Surajit Kundu, “Balloon-shaped CPW fed printed UWB antenna with dual frequency notch to eliminate WiMAX and WLAN interferences,” *Microwave and Optical Technology Letters*, vol. 60, no. 7, pp. 1744-1750, 2018.
- Surajit Kundu, “Gain augmentation of a CPW fed printed miniature UWB antenna using frequency selective surface,” *Microwave and Optical Technology Letters*, vol. 60, no. 7, pp. 1820-1826, 2018.
- Surajit Kundu, “Experimental study of CPW fed printed UWB antenna with radiation improvement for ground coupling GPR application,” *Microwave and Optical Technology Letters*, vol. 60, pp. 2462-2467, 2018.
- Hemant Kumar Kathania, Waquar Ahmed, S Shahnawazuddin, and A B Samaddar, “Explicit Pitch Mapping for Improved Children’s Speech Recognition,” *Circuit System and Signal Processing Springer*, vol. 37, no. 5, pp. 2021-2044, 2017.
- S Shahnawazuddin, Nagaraj Adiga and Hemant Kumar Kathania, “Effect of Prosody Modification on Children’s ASR,” *IEEE Signal Processing Letters*, vol. 24, no. 11, pp. 1749-1753, 2017.
- S Shahnawazuddin, Hemant Kumar Kathania, Abhisek Dey, and Rohit Sinha, “Improving Childrens Mismatched ASR using Structured Low-Rank Feature Projection,” *Speech Communication, Elsevier*, vol. 105, pp. 103-113, 2018.
- S Shahnawazuddin, Chaman Singh, Hemant Kumar Kathania, Waquar Ahmad and Gayadhar Pradhan, “An Experimental Study on the Significance of Variable Frame-

Length and Overlap in the Context of Children's Speech Recognition," *Circuit System and Signal Processing*, Springer, vol. 37, no. 12, pp. 5540-5553, 2018.

- Syed Shahnawazuddin, Nagaraj Adiga, Hemant Kumar Kathania, Gaydhar Pradhan, and RohitSinha, "Studying the Role of Pitch-Adaptive Spectral Estimation in Automatic Speech Recognition," *Digital Signal Processing*, Elsevier, vol. 79, pp. 142-151, 2018.
- Surajit Kundu, and Sanjay Kumar Jana, "A compact umbrella shaped UWB antenna for ground-coupling GPR applications," *Microwave and Optical Technology Letters*, vol. 60, no. 1, pp. 146-151, 2018.
- Ayan Chatterjee and Susanta Kumar Parui, "Beamwidth Control of Omnidirectional Antenna Using Conformal Frequency Selective Surface of Different Curvatures," *IEEE Transactions on Antennas and Propagation*, vol. 66, no. 6, pp. 3225-3230, 2018.
- Ayan Chatterjee and Susanta Kumar Parui, "Frequency-Dependent Directive Radiation of Monopole-Dielectric Resonator Antenna Using a Conformal Frequency Selective Surface," *IEEE Transactions on Antennas and Propagation*, vol. 65, no. 5, pp. 2233-2239, 2017.
- Saptarsi Ghosh, Subhashis Das, Syed Mukulika Dinara, Ankush Bag, Apurba Chakraborty, Partha Mukhopadhyay, Sanjay Kumar Jana, and Dhruves Biswas, "OFF-State Leakage and Current Collapse in AlGa_N/Ga_N HEMTs: A Virtual Gate Induced by Dislocations," *IEEE Transactions on Electron Devices*, Vol. 65, No. 4, pp. 1333-1339, 2018.
- Palash Das, Sanjay Kumar Jana, Nripendra N. Halder, S. Mallik, S. S. Mahato, A. K. Panda, Peter P. Chow, Dhruves Biswas, "An Alternative X-ray Diffraction Analysis for Comprehensive Determination of Structural Properties in Compositionally Graded Strained AlGa_NEpilayers," *Electronic Materials Letters*, vol. 14, no. 6, pp. 784-792, 2018.
- A Nandi, S Mandal, S Ghosh, S Dhar, S Majumdar, H Saha, SM Hossain, "Application of Hybrid rGO-ITO Bilayer TCO on a-Si Solar Cell for Performance Enhancement," *IEEE Journal of Photovoltaics*, vol. 9, no. 1, pp. 12-17, 2018.

Publication in Conferences

- Surajit Kundu, and Sanjay Kumar Jana, "A new compact leaf shaped CPW fed UWB antenna," In Proc. 2017 IEEE International Conference on Antenna Innovations & Modern Technologies for Ground, Aircraft and Satellite Applications (iAIM), Bangalore, India, 2017.
- Surajit Kundu, and Sanjay Kumar Jana, "A compact planar CPW fed monopole antenna for Ultra Wideband applications," In Proc. 2017 14th IEEE India Council International Conference (INDICON 2017), IIT Roorkee, Uttarakhand, India, 2017, pp.1-4.
- Hemant Kumar Kathania, S. Shahnawazuddin, Nagaraj Adiga and Waquar Ahmad, "Role of Prosodic Features on Childrens Speech Recognition," in Proc. IEEE ICASSP, 2018.
- Hemant Kumar Kathania, S. Shahnawazuddin, Waquar Ahmad Nagaraj Adiga, S. K. Jana and A. B. Samadar, "Improving Childrens Speech Recognition through Time Scale Modification based Speaking Rate Adaptation," in Proc. IEEE SPCOM, 2018.



- S. Shahnawazuddin, Hemant Kumar Kathania, Chaman Singh, Waquar Ahmad and Gayadhar Pradhan, “Exploring the Role of Speaking-Rate Adaptation on Children’s Speech Recognition,” in Proc. IEEE SPCOM, 2018.
- Waquar Ahmad, S. Shahnawazuddin, Hemant Kumar Kathania, Gayadhar Pradhan and A B Samaddar, “Improving Children’s Speech Recognition through Explicit Pitch Scaling based on Iterative Spectrogram Inversion,” in Proc. INTERSPEECH, 2017.
- Hemant Kumar Kathania, S. Shahnawazuddin and Rohit Sinha, “Improving Children Speech Recognition in Acoustically Mismatched Condition using Eigen voices and Feature Projections,” in Proc. IEEE NCC, 2017.
- Ayan Chatterjee and Susanta Kumar Parui, “A Dual-Layer Frequency Selective Surface for Radiation Diversity of a Monopole Antenna,” Proc. of International Conference on Antenna Innovations & Modern Technologies for Ground, Aircraft and Satellite Application (iAIM), Bangalore, November 2017.
- Priti Gupta, Nigidita Pradhan, Sanjay Kumar Jana, “CMOS Based Class-A Power Amplifier for C Band Applications,” IEEE International Symposium on Devices, Circuits and Systems 2018, IIST Shibpur, Kolkata, March 2018.
- Reshmi Dhara and S. K. Jana, “A single microstrip feed C shaped dual circularly polarized slotted Monopole antenna,” In Proc. IEEE Applied Electromagnetics Conference (AEMC), 2017.
- Reshmi Dhara, M. Midya, M. Mitra, and S. K. Jana, “CPW-fed tetra band circular polarized antenna for wireless communication applications,” In Proc. IEEE Applied Electromagnetics Conference (AEMC), 2017.
- Reshmi Dhara, M. Sarkar, and T. K. Dey, “A Dual Band Circularly Polarized Y-Shaped Patch Antenna for Wireless Communication Application,” In Proc. 3rd Edition Research Scholars’ Day’17, National Institute of Technology Delhi, December, 2017.
- Reshmi Dhara, M. Sarkar, and T. K. Dey, “A Dual Band Circularly Polarized Y-Shaped Patch Antenna for Wireless Communication Application,” In Proc. 3rd International Conference for Convergence in Technology (I2CT), 2018.
- Reshmi Dhara, Madhurima Sarkar, Tarun Kumar Dey, Sanjay Kumar Jana, “A Tri-Band Circularly Polarized G- Shaped Patch Antenna for Wireless Communication Application,” IEEE International Conference GUCON, 2018.
- Reshmi Dhara, Monojit Mitra, Sanjay Kumar Jana, Ayan Chatterjee, “A Circularly Polarized T- Shaped Patch Antenna for Wireless Communication Application,” In Proc. IEEE International Conference INCAP, 2018.

Awards/ Achievements

- Vishwapriya Gautam and Antra Pramanik got selected for MITACS Summer Internship at Canada.
- Yatish Pachigolla got selected for Summer Research Fellowship Program at IIT Bombay.
- Antra Pramanik got selected for Summer Research Fellowship Program at Deen Dayal Upadhyaya College, University of Delhi.
- Shivani Spriha got selected for Summer Internship at C-DAC SCADA.



- Ankur Roy got selected for Summer Internship at International Semiconductor Ltd., Taiwan.
- Sanghmitra Maurya got selected for Summer Internship at IIT Gandhinagar.
- Nitu Kumari got selected for Summer Internship at ISRO, Jodhpur.
- Mrs. Reshmi Dhara, received Best Paper Award in 3rd Edition of Research Scholars' Day' 17 at National Institute of Technology Delhi for paper titled "A Dual Band Circularly Polarized Y-Shaped Patch Antenna for Wireless Communication Application," on 9th December, 2017.

Department of Electrical and Electronics Engineering (EEE)

The Department of EEE had started its operation since inception of the Institute in 2010. The department is presently offering both B.Tech. and M.Tech. degree as well as PhD program. It maintains a high quality of teaching and research activities through collective engagements of its students, scholars and faculty members. At present department has limited laboratories due to non-availability of laboratory space in the temporary campus. However, the institute is trying to create more space by construction industrial sheds to establish necessary laboratories.

Programs/courses offered by the Department:

- B.Tech. in Electrical and Electronics Engineering
- M.Tech. in Electrical Engineering (Control, Power and Electric Drives)
(The department started M. Tech. program from the current academic session)
- Ph.D.

Faculty details:

SN	Name, Designation and Research Interest
1	Dr. Anjan Kumar Ray <i>Assistant Professor & HOD (I/c), Ph. D (IIT Kanpur)</i> Control Systems, Robotics and Intelligent Systems, Machine Learning, Sensor Fusion and Smart Home/Environment
2	Dr. Sourav Mallick <i>Assistant Professor, Ph. D (NIT Durgapur)</i> Power Systems, Power State Estimation, Power System Transmission and Distribution, Power System Stability and Control
3	Dr. Pradeep Kumar <i>Assistant Professor, Ph. D (NIT Jamshedpur)</i> Power Quality, Control Systems, Renewable Energy Systems, Power Electronics
4	Dr. Molay Roy <i>Assistant Professor, Ph. D (IEST Shibpur)</i> Power Electronics Converter and Controller



5	Dr. Aurobinda Panda <i>Assistant Professor, Ph. D (IIT Roorkee)</i> Application of Power Electronics in Renewable Energy Sources
Temporary Faculty	
1	Dr. Amit Kumar Yadav, Ph.D. (NIT Hamirpur) Power Systems, Soft Computing, Renewable Energy, Photovoltaic Condition Monitoring
2	Dr. Kuntal Mandal, Ph.D. (IIT Kharagpur) Control of Power Electronics Circuit, Nonlinear Control and Dynamics, Circuits and Systems
3	Dr. Abhishek Rajan, Ph.D. (NIT Shilchar) Power System Optimization, Operation and Control, Soft Computing Methods of Optimization, Power System Planning
4	Mr. Jogi Paul Perovskite Solar Cells

Laboratory Facilities

- Basic Electrical Engineering Laboratory
- Control Systems Laboratory
- Electrical Machines Laboratory
- Measurements Laboratory

PhD Scholars:

Sl. No.	Scholar	Guide(s)	Full time/ part time	Fellowship	Areas of research
1.	Mr. Arindam Singha	Dr. Anjan Kumar Ray and Prof. Arun Baran Samaddar	Full time (Visvesvaraya Scholar)	Project	Intelligent networked robotic systems
2.	Mr. Arabinda Ghosh	Dr. Anjan Kumar Ray and Dr. Md. Nurujjaman	Full time	Institute	Dynamics and stability of complex network
3.	Mr. Sudhansu Sekhar Das	Dr. Aurobinda Panda	Full time	Institute	Application of multilevel inverter to renewable energy systems
4.	Mr. Amit Kumar	Dr. Pradeep Kumar	Full time	Institute	Power quality improvement using custom power devices
5.	Mr. Debanjan	Dr. Sourav	Full time	Institute	Power line

	Mukherjee	Mallick			harmonic reduction using FACTS
6.	Mr. Subhajit Roy	Dr. Sourav Mallick and Dr. Aurobinda Panda	Part time	N. A.	Application of FACT controller
7.	Ms. Shrabani Pal	Dr. Sourav Mallick and Dr. Anjan Kumar Ray	Part time	N. A.	Power system stability and control
8.	Mr. Roshan Pradhan	Dr. Aurobinda Panda	Part time	N. A.	Distributed PV generation system
9.	Mr. Saikat Chatterjee	Dr. Anjan Kumar Ray	Part time	N. A.	Biomedical instrumentation
10.	Mr. Pralay Roy	Dr. Sourav Mallick and Dr. Pradeep Kumar	Part time	N. A.	Application of FACT controller

Ongoing Projects/schemes in the Department:

Dr. Anjan Kumar Ray of EEE received Visvesvaraya PhD project “Intelligent Networked Robotic Systems” along with Prof. Arun Baran Samaddar. One full time Ph.D. scholar is working in the Department under this project.

Research publications by faculty members in 2017-18

International Journals:

1. A. K. Yadav, V. Sharma, H. Malik, S. S. Chandel, *Daily Array Yield Prediction of Grid-interactive Photovoltaic Plant using Relief Attribute Evaluator Based Radial Basis Function Neural Network*. Renewable and Sustainable Energy Reviews (Elsevier), Vol. 81, pp 2115–2127, 2018.
2. T. Biswas, R. Bharadwaj, A. K. Ray, P. Kuila, *A Novel Leader Election Algorithm based on Resources in Ring Networks*. International Journal of Communication Systems, Accepted, March 2018.
3. A. K. Yadav et al. *Formulation of New Correlations In Terms of Extraterrestrial Radiation by Optimization of Tilt Angle for Installation of Solar Photovoltaic Systems for Maximum Power Generation - Case Study of 26 Cities in India*, Sadhana, Accepted, 2018.
4. P. Kumar, *Comparative Power Quality analysis of Conventional and Modified DSTATCOM Topology*. International Journal on Electrical Engineering and Informatics, Vol. 9, No. 4, PP. 786-799, December 2017.
5. A. Abusorrah, K. Mandal, et al., *Avoiding Instabilities in Power Electronic Systems: Toward an On-Chip Implementation*, IEE IET Power Electronic, vol. 10, no. 13, pp. 1778-1787, October, 2017.
6. Y. Al-Turki, A. El Aroudi, K. Mandal, et al., *Non-averaged Control-Oriented Modeling and Relative Stability Analysis of DC-DC Switching Converters*,



International Journal of Circuit Theory and Applications, vol. 46, no. 3, pp. 565-580, March 2018.

7. P. Kumar and N. Kumar, *Performance assessment of UPQC topologies on a three phase power distribution system*. Journal of Engineering Technology, Vol. 6, Issue 2, PP. 424-439, July, 2017.
8. M. Roy and M. Sengupta, *Design, Real Time Modeling, Simulation and Digital Implementation of Phase-locked Loop Based Auto-synchronising Current Sourced Converter for an Induction Heating Prototype*, Sadhana - Academy Proceedings in Engineering Science, May, 2017.

International Conference:

9. A. K. Yadav and H. Malik, *10-min Ahead Forecasting of Wind Speed for Power Generation using Nonlinear Autoregressive Neural Network*, SIGMA 2018, February 23-25, 2018, NSIT Delhi, India.
10. A. K. Yadav and H. Malik, *Short term wind speed forecasting for power generation in Hamirpur, Himachal Pradesh, India, using artificial neural networks*. SIGMA-2018, February 23-25, 2018, NSIT Delhi, India.
11. A. Kumar and P. Kumar, *Modelling and Simulation of STATCOM for Enhancement of Transient Stability*, IEEE International Conference on Electrical, Electronics, Computers, Communication, Mechanical and Computing (EECCMC 2018), Tamilnadu, January, 2018.
12. A. Singha, A. K. Ray, and A. B. Samaddar, *Navigation of Mobile Robot in a Grid-based Environment using Local and Target Weighted Neural Networks*, IEEE 8th ICCCNT, IIT Delhi, India, PP 1-6, July 3 - 5, 2017.
13. K. Mandal et al., *Control-Oriented Design Guidelines to Extend the Stability Margin of Switching Converters*, IEEE International Symposium on Circuits and Systems (ISCAS2017), pp. 1258-1261, Baltimore, MD, USA, May 28-31, 2017.
14. A. El Aroudi, K. Mandal, A. Abusorrah, M. M. Al-Hindawi, Y. Al-Turki, D. Giaouris, and S. Banerjee, *A Novel Nonlinear Modulation Technique for Stabilizing DC-DC Switching Converters*, IEEE International Symposium on Circuits and Systems (ISCAS2017), pp. 1294-129, Baltimore, MD, USA, May 28-31, 2017.

Special lecture/seminar workshop organized/attended in 2017-18

- Department had organized a workshop on PLC overview and applications in April, 2017.
- Department had organized a workshop related to training on SCADA Labkits in October, 2017
- Departmental faculty members were involved in organizing all institutional lecture/seminar/workshops e.g. lecture series during Annual Technical Festival Abhyantran.

- Dr. Anjan Kumar Ray visited Central Institute of Technology, Kokrajhar to deliver lectures on robotics.
- Dr. Sourav Mallick visited CCCT, Sikkim as an external expert for their project evaluations.
- Dr. Aurobinda Panda attended workshop on professional development training at IIM Indore in December, 2017.
- Dr. Anjan Kumar Ray attended workshop on Innovation and Startup at IIT Guwahati in December, 2017.
- Dr. Anjan Kumar Ray attended a workshop on ‘Start-up & Innovations’ organised by State Project Implementation Unit, North Eastern Region (SPIU-NE) in Guwahati in March, 2018.
- Mr. Pritam Kumar (2nd year student of EEE) participated in the Innovation Competition at NIT Uttarakhand in February, 2018.
- EEE faculty and students participated in survey conducted by NPIU in collaboration with the Stanford University.
- Dr. Amit Kumar Yadav served as the session chair during SIGMA 2018 conference in February 2018 at NSIT Delhi.
- Dr. Anjan Kumar Ray (as Chairperson of the Innovation Cell) and Mr. Pritam Kumar (2nd year EEE student) were invited at the Rashtrapati Bhavan during the Festival of Innovation & Entrepreneurship (FINE 2018) in March 2018.
- Mr. Pritam Kumar's work (mentored by Dr. Kuntal Mandal, Department of EEE) on Solar Bulb was selected for display at the Rashtrapati Bhavan, India during FINE 2018.



Figure: Innovation representation by Mr. Pritam Kumar at the Rashtrapati Bhavan, India

Mechanical Engineering Department

Mechanical Engineering Department started its journey in the academic year 2014-15. The inception of the department is to produce globally competent Mechanical Engineers capable of contributing the society through innovation and working in multidisciplinary fields. At



present department have limited laboratories due to non-availability of laboratory space in the temporary campus. However, the institute is trying to create more space by construction industrial sheds to establish necessary laboratories. The students are sent to various IIT/NIT to perform practical as the required labs are not available.

Courses Offered:

- B.Tech. in Mechanical Engineering
- Ph.D. in Mechanical Engineering

SN	Name, Designation and Research Interest
1	Dr. Shambhunath Barman, Ph.D. <i>Assistant Professor & HOD (I/c)</i> Experimental and Numerical Heat Transfer and CFD
2	Dr. Ranjan Basak, Ph. D. <i>Assistant Professor</i> Fluid Mechanics and Machine Design
3	Dr. Pranab Kumar Kundu, Ph.D. <i>Assistant Professor</i> Microfluidics, Non-traditional Machining
Temporary Faculty	
1	Dr. Debajit Saha Fluid Mechanics, Turbulence, CFD
2	Dr. Anindya Malas Machine Design, Vibrational Analysis
3	Dr. Piyush Sharma Thermal Energy Conversion, HVAC
4	Mr. Susanta Kumar Pradhan Production Technology, Tribology
5	Mr. Pratik Kumar Shaw Production and Industrial Engineering
6	Mr. Manohar Kumar Design, Dynamics, Mechatronics

Laboratory Facilities:

- Mechanical Workshop
- Fluid Mechanics Laboratory
- Strength of Materials Laboratory
- Production Engineering Laboratory
- CAD/CAM Laboratory

Research Scholars

Name	Broad area of Research
Mr. Lakshman R	Simulation of Atmospheric Boundary Layer
Mr. Manish Mukhopadhyay	Grinding of Titanium Alloy
Mr. Anwesh Virkunwar	Material Characterization
Mr. Prasan Dewan	Non-traditional Machining (EDM)
Mr. Saddam Hussain Mallick	Natural Convection in Enclosure
Mr. Aditya Kumar Singh	Thermo-Fluidics

Collaboration with other Institute:

To conduct various laboratory classes in different semesters the department has collaborated with the following institutes;

- Indian Institute of technology, Guwahati (IIT Guwahati).
- Indian Institute of technology, Kharagpur (IIT Kharagpur).
- Indian Institute of Engineering Science and Technology (IEST), Shibpur

In the academic year 2017-18, the B.Tech. 3rd year students went to IIT Guwahati and IIT Kharagpur to carry out Laboratory classes. The details are as follows:

- The students went to Indian Institute of technology, Guwahati to carry out Heat Transfer Laboratory of 5th semester curriculum from 3rd November, 2017 to 13th November 2017.
- The students went to Indian Institute of technology, Kharagpur to carry out Production Engineering Laboratory of 6th semester curriculum from 17th April, 2018 to 28th April 2018.

Research Activities:

Publications

In the academic year 2017-18 the following journal papers, conference papers, book chapters have been published by the research scholars and faculty members of Mechanical Engineering Department.

Journals:

1. P. K. Mondal, H. Gaikwad, P. K. Kundu, S. Wongwises, Effect of thermal asymmetries on the entropy generation analysis of a variable viscosity Couette Poiseuille flow, Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering, 2017, Volume 231, Issue 5, pp 1011-1024, <https://doi.org/10.1177/0954408916688234>.
2. M. Mukhopadhyay, P. K. Kundu, Development of a simple and efficient delivery technique for grinding Ti-6Al- 4V. International Journal of Machining and Machinability of Materials 2018, DOI: 10.1504/IJMMM.2018.10013115.



3. M. Mukhopadhyay, P. K. Kundu, Laser dressing of grinding wheels, a review. *International Journal of Mechatronics and Manufacturing Systems* 2018, Volume 11, Nos. 2/3, pp 167-181. DOI: 10.1504/IJMMS.2018.10013117.
4. M. Mukhopadhyay, P. K. Kundu, Optimization of Dressing Infeed of Alumina Wheel for Grinding Ti-6Al-4V. *Materials and Manufacturing Processes* 2018, Volume 33, Issue 13, pp 1453-1458. DOI: 10.1080/10426914.2018.1453164.
5. M. Mukhopadhyay, P. K. Kundu and S. Das, Experimental investigation on enhancing grindability using alkaline based fluid for grinding Ti-6Al-4V. *Materials and Manufacturing Processes* 2018. DOI: 10.1080/10426914.2018.1476759.
6. Lakshman, R. and R. Basak, Analysis of transformed fifth order polynomial curve for the construction of wind tunnel by using OpenFoam, *IOP Conference Series, Material Science and Engineering*, Volume: 377, No. 1, P 012048, IOP publishing, 2018.

Conferences:

1. M. Mukhopadhyay, P. K. Kundu, Performance Evaluation of Conventional Abrasive Wheels for Grinding Ti-6Al-4V, *Proc. International Conference on Mechanical Materials and Renewable Energy*, Dec. 8-10, 2017, SMIT Majhitar, Accepted for publication. Received Best Paper Award.
2. D. Saha and S. Majumder, CFD analysis of Swirling Fluid Flow in a Circular Duct with Co-axial Confined Jet at Inlet, 1st International Conference on Mechanical Engineering (INCOM 2018), January 4-6, 2018, Jadavpur University, Kolkata

Book Chapter:

1. Lakshman, R. and R. Basak, Comparative study of profiles design for the construction of wind tunnel by using OpenFoam, *Book Chapter: Advances in Technology, Engineering and Technology*, DOI: 10.3850/978-981-11-0744-3-17-46-cd; ISBN: 13:978-981-11-0744-3; PP: 156-167, 2018.

Achievements/Awards

Dr. Pranab Kumar Kundu has been nominated for Vivesvaraya Young Faculty Research Fellow from NIT Sikkim during the academic year 2017-2018.

Special Lecture/ Seminar organized:

- Prof. Himadri Chattopadhyay of Mechanical Engineering Department, Jadavpur University has delivered a lecture on Thermo-Fluidics Field (Turbulent Fluid Flow) on 23/02/2018 at ME Dept.

Department of Civil Engineering

The Department of Civil Engineering of NIT Sikkim was established in the year 2013. The department offers 4 year B.Tech. program in Civil Engineering with a current intake of 30 students. The pass out students of the department are working in various government and reputed private sectors. Along with that significant number of students are also pursuing

higher education in various fields of civil engineering. Faculty members of the Civil Engineering Department are actively associated with the construction and maintenance activities of NIT Sikkim Campus. The department also contributes in the landscaping, gardening and environmental protection of the institute campus at Ravangla. At present department have limited laboratories due to non-availability of laboratory space in the temporary campus. However, the institute is trying to create more space by construction industrial sheds to establish necessary laboratories.

Faculty Details:

SN	Name, Designation and Research Interest
1	Dr. Amit Kumar Das, Ph.D. (IIT Kharagpur) <i>Assistant Professor & HOD (I/c)</i> Geotechnical Engineering, Ground Improvement
Temporary Faculty	
2	Mr. Neelanjan Datta Water Treatment, Solid Waste Management
3	Dr. Alok Kumar Patra Structural Analysis, Structural Design, Structural Dynamics
4	Mr. Debashish Roy Transportation Engineering, Traffic Flow Fundamentals, Highway Engineering and Level of Service
5	Dr. Sangita Deb Barman Flood Modeling, Water Resources Management, Soil Erosion, GIS Techniques
6	Mr. Pretam Dahal Structural Analysis, Structural Design, Seismic Analysis
7	Mr. Susanta Kumar Pradhan Production Technology, Tribology
5	Dr. Sanjit Biswas Pile Dynamics, Soil Dynamic, Machine Foundation, Finite Element Analysis, Soil Mechanics and Foundation Engineering

Laboratory Facilities

- Surveying Laboratory
- Material Testing Laboratory
- Geotechnical Engineering Laboratory

Ongoing Projects/Schemes in the Department

- Appraisal report on DPR of seven areas (Singtam, Rangpo, Namchi, Geyzing, Mangan, Jorethang, Shipsu) for Solid Waste Management. (Mr. Neelanjan Datta)



Special Lecture/ Seminar/Workshop Attended

- Mr. Neelanjana Datta attended the conference on “Solid and Hazardous Waste Management”, 26th June - 3rd July, 2017, IIT Kharagpur.

Publications

1. Barman, S. D. and Choudhury, P. (2017) Application of optimization technique for flood damage modeling in river system. International Conference on Electrical, Electronics, Materials and Applied Science, Swami Vivekananda Institute of Technology, Secunderabad, India. 22-23 Dec 2017.
2. Deb Barman, S. and Choudhury, P. (2018) Application of Optimization Technique for Flood Damage Modeling in River System. AIP Conference Proceedings, 020112-1-020112-7. <https://doi.org/10.1063/1.5032074>.
3. Datta, N. Debnath, B. Ghosh, A. and Ghosh, S.K. (2017) Climate Change in Hilly Regions of India: Issues and Challenges in Waste Management. ICWNSWM, December.

Department of Bio-Technology

Faculty details:

SN	Name, Designation and Research Interest
Temporary Faculty	
1	Dr. Sancharini Das Ph.D. (IIT Kharagpur) Microbe based nanotechnology
2	Dr. Swarnendu Bag, Ph.D. Cancer Theranostics, Proteomics, Metabolomics
3	Dr. Amlan Das, Ph.D. Cancer stem cells, Oxidative stress, Antioxidant therapeutics

Research Publications:

1. Spectroscopy-corroborated multimodal quantitative imaging biomarkers for neuroretinal degeneration in diabetic retinopathy. Guha Mazumder A, Chatterjee S, Chatterjee S, Gonzalez JJ, Bag S, Ghosh S, Mukherjee A, Chatterjee J. Clin Ophthalmol. 2017 Nov 22;11:2073-2089.
2. Deficiency of CCN5/WISP-2-Driven Program in breast cancer Promotes Cancer Epithelial cells to mesenchymal stem cells and Breast Cancer growth. Das A, Dhar K, Maity G, Sarkar S, Ghosh A, Haque I, Dhar G, Banerjee S, Banerjee SK. Scientific Reports (Nature) 2017 ;7(1):1220.

Department of Mathematics

Mathematics Department is an integral part of the Institute since its inception. Faculties of the department are engaged in cutting-edge research. The department offers PhD program in Numerical Linear Algebra, Operation Research and Spectral Graph Theory.

Faculty details:

SN	Name, Designation and Research Interest
1	Dr. Ravi Srivastava, Ph.D. (IIT Guwahati) Assistant Professor & HoD (I/C) Numerical Linear Algebra, Spectral Graph Theory
2	Dr. Om Prakash, Ph.D. Production Planning and Inventory Control (Operation Research)
Temporary faculty	
1	Dr. Suresh Kumar Choubey, Ph.D. Theory of Rings and Modules

Research Publications:

1. *Suresh K.Choubey, Manoj K.Patel and Varun Kumar, Maejo International Journal of Science and Technology, 2017, Vol. 11(3), 264-274.*

Research Presentations:

1. *Om Prakash, Manufacturing inventory model with discrete random demand and finite production rate under two level of trade credit financing, National Conference of Engineering Mathematics (TOPAS-2017), Department of Mathematics, IIT Kharagpur.*

Research Scholars

S.No.	Scholars	Guide(s)	Area of Research
1	Ms. Aparajita Borah	Dr. Ravi Srivastava	Spectra Graph Theory

Department of Physics

The Department of Physics has been a part of the National Institute of Technology Sikkim since its establishment in the year 2010. Departmental Faculty members are actively engaged in teaching and research. Presently the Department offers Physics, Electromagnetic field theory, Solid state device and Basic Electrical Sciences courses to different engineering branches of B. Tech. The faculty members are presently engaged in research in the broad areas of effect of Noise on nonlinear system, low temperature physics, non-linear dynamics, quantum information and its interface with many-body physics, time series analysis of stock market. At present department has limited laboratories due to non-availability of laboratory



space in the temporary campus. However, the institute is trying to create more space by construction industrial sheds to establish necessary laboratories.

Faculty details:

SN	Name, Designation and Research Interest
1	Dr. Md Nurujjaman, Ph.D. (Homi Bhabha National Institute, BARC, India.) Assistant Professor & HoD (I/C) Experimental nonlinear dynamics, stock market analysis
2	Dr. Anindya Biswas, Ph.D. (University of Calcutta) Quantum information and its interface with many-body physics

Research Scholars:

Sl. No	Scholars	Guide(s)	Research Topic
1	Ajit Mahata	Dr. Md. Nurujjaman	Nonlinear time series analysis of stock market
2	George Biswas	Dr. Anindya Biswas	Quantum Information Science

Collaboration with other Department/Institutes

- The Department has active research collaborations with Saha Institute of Nuclear Physics, Kolkata, Jadavpur University, Presidency University and Harish-chandra Research Institute, Allahabad. Currently Radon gas monitoring system, a possible avenue for early earthquake detection, has been installed at NIT Sikkim, in collaboration with Jadavpur University.
- Dr. Anindya Biswas visited the Quantum Information and Computation group at Harish-Chandra Research Institute, Allahabad during July 2016 and December 2016 for collaborative research.

Research Publications

International Journal

1. Identification of pre-seismic anomalies of soil radon-222 signal using Hilbert–Huang transform, S Chowdhury, A Deb, M Nurujjaman, C Barman ,Natural Hazards 87 (3), 1587-1606 (2017).
2. Benford analysis of quantum critical phenomena: First digit provides high _nite-size scaling exponent while _rst two and further are not much better._ Phys. Lett. A 382, 1639 (2018) (arXiv:1711.00758 [quant-ph])

Conferences

1. A study of nonlinear dependence between Oil Price and Stock Returns in India, DP Bal, M Nurujjaman, Conference on Nonlinear Systems & Dynamics IISER Kolkata 16, 18.
2. Modeling and Stability of a Smart Grid as a Coupled Oscillator, A Ghosh, M Nurujjaman, AK Ray, Conference on Nonlinear Systems & Dynamics IISER Kolkata 16, 18

Department of Chemistry

The Department of Chemistry has been an integral part of the National Institute of Technology Sikkim since its establishment in the year 2010. The department has adequate laboratory facilities with instruments rotary evaporator, gas chromatography system, UV-visible Spectrophotometer, FT-IR, Electrochemical Workstation, *etc.* The department of Chemistry started a two years M.Sc. course in Chemistry from academic session 2017-18. At present department have limited laboratories due to non-availability of laboratory space in the temporary campus. However, the institute is trying to create more space by construction of industrial sheds to establish necessary laboratories.

Faculty details:

SN	Name, Designation and Research Interest
1	Dr. Taraknath Kundu, Ph.D. (A. J. C. Bose Institute) Assistant Professor & HOD (I/C) Synthetic organic Chemistry; Medicinal Chemistry
2	Dr. Achintesh Narayan Biswas, Ph.D. (University of North Bengal) Artificial Photosynthesis, Small Molecule Activation, Bio-inspired Catalysis
3	Dr. Sumit Saha, Ph.D. (Indian Association for the Cultivation of Science) Synthetic organic chemistry
Temporary Faculty	
1	Dr. Nidhi Govil, M. Sc. IIT Roorkee, Ph.D. (MNIT Jaipur) Electroanalytical Chemistry
2	Dr. Barun Jana, Ph.D. (WWU Muenster, Germany) Main Group and Transition Metal Organometallic Chemistry and Catalysis, Energetics Materials and Environment, Supramolecular Chemistry and its relevant applications
3	Dr. Sumantra Bhattacharya Ph.D. (NCL Pune) Computational Chemistry
4	Dr. Amlan Das, Ph.D. (University of Calcutta) Cancer biology, Cancer stem cells, Therapeutics

Research Publications

1. Barun Jana, Christian Honaker, Werner Uhl, *Journal of Organometallic Chemistry*, 2018, 856, 78-86.
2. Sourenjit Naskar, **Barun Jana** and Pradyut Ghosh, *Dalton Transaction*, 2018, 47, 5734-5742; DOI: 10.1039/C8DT00683K.



Ph.D. Scholars

Name	Supervisor
Mr. Sachidulal Biswas	Dr. A. N. Biswas
Ms. Srijana Subba	Dr. S. Saha
Mr. Satish Chandra Yadav	Dr. T. Kundu
Mr. Srijan Narayan Chowdhury	Dr. A. N. Biswas
Mr. Panjo Lepcha	Dr. A. N. Biswas

Department of Humanities & Social Sciences

Interdisciplinary in orientation, the Department of Humanities and Social Sciences offers courses in English, Economics, and Management. Specific courses on Communicative skills, phonetics, Linguistics, and certificate course on some of the regional and European languages features in the long-term agenda of the department. The faculty members of the department believe in providing opportunities to its students for discussion, debate and brainstorming. The prime objective of the department is to make them responsible and innovative and to train them to meet the challenges of highly competitive and ever-changing world. We believe in garnering the faculty of creativity and self-confidence in our students and therefore we keep on pushing them towards innovative thinking. The department is thriving hard to promote its students towards the interdisciplinary studies for which we are collaborating with other sister departments in the country.

Faculty details:

Sl No.	Name and Specialization
1	Dr. Dhananjay Tripathi, Ph.D. (University of Allahabad) Assistant Professor & HOD (I/C) Literary Criticism, Myth and its Retelling, Indian English Writing
Temporary Faculty	
1	Dr. Debi Prasad Bal, PhD (IIT Hyderabad) Macroeconomics, Public Economics and Applied Econometrics

On-going Research Project

1. The Occult Tradition of Shamanism: Its Tribal Nature and Core Belief. Sponsor Agency: ICSSR, P.I. Dr. Dhananjay Tripathi.
2. Innovation and Sustainable Decision Support System for Drinking Water Security in Indian Himalayan Region of Sikkim and West Bengal”. Sponsor Agency: National Mission on Himalayan Studies. PIs: Dr. Debi Prasad Bal, Dr. Md. Nurujjaman, Dr. Barun Kumar Thakur and Dr. Kanish Debnath

Research Publications

1. Devi Prasad Dash, Narayan Sethi and Debi Prasad Bal (2018), “Is the Demand for Crude Oil Inelastic for India? Evidence from Structural VAR analysis”, *Vol.118, pp. 552-58, Energy Policy, Published by Elsevier* (ABDC Ranking=A).
2. Debi Prasad Bal and Badri Narayan Rath (2017), “Do macroeconomics channels mater for examining relationship between public debt and economic growth in India?” Accepted in *Journal of Quantitative Economics, Published by Springer*, (ABDC Ranking=B).

Research Scholars

Sl No.	Name	Supervision and Research Broad Area Guide(s)
1	Bhaskar Chettri	Dr. Dhananjay Tripathi, Modern Indian Fiction
2	Ankita Sarmah	Dr. Dhananjay Tripathi, Agri-Industry
3	Laxmi Rai	Dr. Dhananjay Tripathi, Cinematic Adaptations of Shakespeare
4	Lekha Rai	Dr. Dhananjay Tripathi, North-eastern Literature



13. Technical Education Quality Improvement Program (TEQIP-III)

National Institute of Technology Sikkim has become a part of Technical Education Quality Improvement Program (TEQIP-III). The program, funded by the World Bank is being implemented by National Project Implementation Unit (NPIU), Govt. of India. One of the key objectives of the project is to provide support to technical institutions in order to strengthen and improve their policy, academic and management practices.

NIT Sikkim has been chosen as a Mentee Institution (1.1) and allocated a fund of rupees fifteen crores to improve quality and equity. The Institute is being mentored by Indian Institute of Technology, Kharagpur (Mentor Institute, 1.3). The Institute has defined the following activities in the Institutional Development Proposal (IDP):

- Procurement of Goods (equipment, furniture, books LRs, software and minor items) and minor civil works to strengthen the academics and research activities of the Institute. Total fund allocated for this purpose is rupees nine crores.
- Improvement in Teaching, Learning and Research competence. Total fund allocated under this budget head is rupees four crores and fifty lakhs.
- The remaining budget is for miscellaneous/incidental expenditure required for successful implementation of the project.

For successful implementation of the project and to achieve the project goals, a dedicated team comprising of the following members has been formed.

Sl. No.	Designation	Name of the Faculty Member
1	Institutional Project Director (IPD)	Prof. Mahesh Chandra Govil Director NIT Sikkim
2	TEQIP Coordinator (TC)	Dr. Ranjan Basak
3	TEQIP Nodal Officer, Academic	Dr. Sangram Ray
4	TEQIP Nodal Officer, Finance	Dr. Anindya Biswas
5	TEQIP Nodal Officer, Procurement	Dr. Achintesh Narayan Biswas
6	Coordinator, Startup	Dr. Anjan Kumar Roy
7	Coordinator, NBA Accreditation	Dr. Pranab Kumar Kundu
8	Coordinator, Equity Action Plan	Dr. Sumit Saha
9	Coordinator, Environment	Dr. Molay Roy
10	Coordinator, GATE	Mr. Tarun Biswas

Various academic as well as procurement activities have been planned under the TEQIP-III project. Activities which have already been successfully implemented are as under

➤ **Expenditure Incurred under TEQIP-III**

Sl. No.	Name of the Event	No. of Event	Number of Attendees (Experts/Guest Lecturers/ Faculty)	Total Expenditure (Rs.)	Remarks
1	Workshops	9	10	4,30,478.00	Inside & Outside Institute
2	Conferences	4	4	1,28,989.00	Outside Institute
3	Expert Lecture	3	11	35,000.00	CSE & ME Dept.
4	Meetings	12	27	9,57,945.00	Inside & Outside Institute
5	Paper Presentation	10	10	2,69,539.00	Various Universities
6	Short Term Course	01	01	33,705.00	Mathematical Models in Civil Engineering
7	Trainings	04	06	1,31,669.00	Various IIMs & IITs
8	Start-Up & Innovation	02	02	52,230.00	Solar Bulb Project
9	Procurement	01	-	11,61,000.00	Electrochemical Workstation
10	Recruitment	01	-	10,022.00	TEQIP-III Office Assistants
11	Office Expenses	03	-	53,812.00	Office Consumables
12	Publication	01	-	30,856.00	JEE awareness program
TOTAL		51	72	32,95,245.00	

In words: Rupees Thirty Two Lakhs Ninety Five Thousand Two Hundred and Forty-Five only.



➤ **Workshops conducted under TEQIP-III**

Title	Name of Resource Person (s)	Date	Venue
NBA Workshop	Prof. Rajnish Prakash	March 10-11, 2018	NIT Sikkim
International Mother Tongue Day	Dr. Dhananjay Tripathi	February 28, 2018	NIT Sikkim
Training & Placement Workshop	Mr. Aviral Sinha	February 1, 2018	NIT Sikkim
Staff Development Workshop	Mr. O. P. Sapkota Mr. R. K. Manjhiwal Mr. D. Maheshwari	February 21-25, 2018	NIT Sikkim

➤ **Conference Attended:**

Title	Name	Date	Venue
PTBT-2017	Dr. Md. Nurujjaman	December 7-8, 2018	Gandhinagar
Biotechnology	Dr. Sancharini Das	December 9-11, 2017	IIT Guwahati
4th Int'l Conf. on Management of Intellectual Property Rights and Strategy (MIPS)-2018	Dr. Shefalika Ghosh Samaddar	January 30 – February 3, 2018	IIT Bombay
Hindi Rajya Bhasha Diwas	Dr. Dhananjay Tripathi	February 7-8, 2018	Thiruvananthapuram, Kerala

➤ **Expert Lecture:**

Name of the Dept.	Name of External Expert	Date	Venue
ME	Dr. Himadri Chattopadhyay, JU	February 23, 2018	NIT Sikkim
CSE	Prof. G.P. Biswas, IIT Dhanbad	February 23-24, 2018	NIT Sikkim

➤ **Paper Presentation in Conference/Seminar:**

Title of the Paper/ Name of the Conference	Name of Faculty Member	Date	Venue
Customization of Service Level Agreement for Digital Forensics as a Service, ICCCT-2017	Dr. Shefalika Ghosh Samaddar	November 24-26, 2017	MNNIT Allahabad
9th ICOAC 2017	Mr. Pankaj Kr Keserwani	December 14-16, 2017	ANNA University, Chennai
Climate Change in hilly region of India: Issues & Challenges in Waste Management	Mr. Neelanjan Dutta	December 15-17, 2017	PJTSA University, Hyderabad
IEEE Indicon-2017	Mr. Surajit Kundu	December 15-17, 2017	IIT Rorkee
National Conference on Engineering Mathematics	Dr. Om Prakash	December 16-17, 2017	IIT Kharagpur
CPW-Fed Tetra Band Circular Polarized Antenna for Wireless Communication Application.	Mrs. Reshmi Dhara	December 19-22, 2017	MIT, Aurangbad, Maharashtra
A Single Micro Strip Feed C Shaped Dual Circularly Polarized Slotted Monopole Antenna.	Mrs. Reshmi Dhara	December 19-22, 2017	MIT, Aurangbad, Maharashtra
CFD analysis of Swirling Fluid Flow in a Circular Duct with Coaxial Confined Jet at Inlet	Dr. Debajit Saha	January 4-6, 2018	Jadavpur University, Kolkata
Transcending Boundaries: A Study of Multiculturalism in The Jewel in the Crown and Tailor's Needle	Mr. Bhaskar Chettri	February 8-10, 2018	Osmania Univ. Hyderabad
Registration Fee-International Conference for SIGMA 2018	Dr. Amit Kr. Yadav	February 23-25, 2018	NSIT, New Delhi



➤ **Workshops /Short Term Course / Training Attended:**

Title	Name of the Faculty/Staff	Date	Venue
TEQIP-III Orientation Workshop	Prof. M. C. Govil Dr. Ranjan Basak	July 22, 2017	New Delhi
Training Workshop for Faculty-Mentors on Induction Program for New Students	Dr. Ranjan Basak Dr. Sangram Ray Dr. Dhananjay Tripathi	October 13-15, 2017	IIT Guwahati
Professional Development Training	Dr. Aurobinda Panda	December 11-15, 2017	IIM Indore
Academic Exposure Visit	Mr. Ram Nepal	December 13-18, 2017	MNIT Jaipur
Workshop on Pay Fixation	Mr. Sahil Minda	December 13-15, 2017	NAHRD Jaipur
Professional Development Training	Dr. Md. Nurujjaman	December 14-18, 2017	IIM Raipur
Workshop on public procurement by e-procurement	Ms. Jeeneta Joseph	December 14-16, 2017	NAHRD Jaipur
Start-up Activities & Mini Action Plan	Dr. Anjan Kumar Ray	December 21-23, 2017	IIT Guwahati
Total Station and GIS	Mr. Subho Das	January 01-06, 2018	Sky Fi Labs, Kolkata
AICTE-QIP Mathematical Models in Civil Engineering	Dr. Amit Kumar Das	February 19-23, 2018	IIT Kharagpur

➤ **Start-Up and Innovation Activities:**

Title	Name of Faculty/Student	Date	Venue
Project Work Presentation-Solar Bulb and Stove	Mr. Pritam Kumar (EEE Student)	February 9-11, 2018	NIT Uttarakhand
Project Work Presentation-Solar Bulb and Stove	Mr. Pritam Kumar (EEE Student)	March 19, 2018	Rashtrapati Bhawan, New Delhi
Project Work Presentation-Solar Bulb and Stove-TA/DA	Dr. Anjan Kumar Ray	March 19, 2018	Rashtrapati Bhawan, New Delhi
Project Work Presentation-Solar Bulb and Stove-Travel Cost/Hiring of Vehicles	Dr. Anjan Kumar Ray	March 20-21, 2018	IIT Guwahati

13. Opportunities and Challenges

- Presently, the institute is located in a temporary campus at Ravangla in South Sikkim. It has been almost eight years since the Institute started functioning. Extreme climatic condition at the temporary site of the campus and lack of other facilities is hampering the growth of the institute. Hilly terrain, lack of proper medical facilities etc. are to be overcome. Therefore, allotment of land at a suitable location is the need of the hour. The Institute is in touch with the Ministry of Human Resource and Development (MHRD) and Govt. of Sikkim to expedite the allotment of land.
- Attracting good faculty and students has become a formidable challenge for the authority. Given the general lack of facilities in the temporary campus of the Institute, NIT Sikkim has experienced difficulty in both recruitment and retention of faculty. In particular, recruiting Associate Professors and Professors has been the toughest challenge. Therefore, recruitment of additional faculty members at the entry level is expected to solve the problem of faculty-shortage.
- As per the existing norms laid down by the ministry, CFTIs should maintain a student-faculty ratio of 12:1. As per the present student intake at NIT Sikkim (980 excluding the Ph.D. students), the number of faculty members should be **eighty-four (84)**. At present, only 38 faculty posts have been sanctioned by MHRD. Therefore, in order to meet the growing aspirations of the students from the State of Sikkim as well as rest of India, **40 additional faculty positions are to be created at earliest**. Requests to sanction additional faculty and staff members have been sent to the Ministry.
- To ensure proper functioning of the Institute, the Institute has sent repeated requests to MHRD to sanction at least Forty-nine (49) additional non-teaching positions. The present sanctioned strength is only thirty-seven (37). Special efforts are to be devoted to recruit motivated, well-qualified candidates in various administrative positions of the Institute in the coming years.

In spite of these difficulties, NIT Sikkim is striving to provide world class teaching and learning facilities to the future engineers of the country. Efforts are being made to create additional prefab structures/industrial sheds for laboratories, classrooms etc. The administration is constantly pursuing the State Government for providing a suitable land for the establishment of the permanent campus but the State Government has not yet provided the land for the permanent campus.