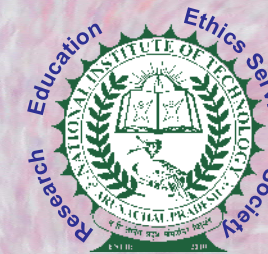


# NATIONAL INSTITUTE OF TECHNOLOGY- ARUNACHAL PRADESH

(YUPIA, ARUNACHAL PRADESH)

ANNUAL REPORT [2015 – 16]



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*(Established by the Ministry of Human Resources Development,  
Government of India)*



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**NATIONAL INSTITUTE OF TECHNOLOGY-  
ARUNACHAL PRADESH**  
**(An Institute of National Importance)**  
**(YUPIA, ARUNACHAL PRADESH)**

**ANNUAL REPORT (2015-16)**



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*(Established by the Ministry of Human Resource  
Development, Government of India)*





## **Preface:**

### **From the Desk of the Director:**



**Prof. C.T. Bhunia**

### **"Goodness is the investment that never fails"**

I am pleased to write this message for Annual Report 2015-16 in respect of National Institute of Technology-Arunachal Pradesh. The Institute that started its journey in 2010 and subsequently got the status of Institute of National Importance by an Act of Parliament is progressing and prospering both academically and in all other areas in leaps and bounds. From about 89 students and no faculty scenario of 2010, today it has in its credit more than 600 students and 51 faculty members on roll. Research, teaching and innovations are made integral and inclusive part of growth and investment, the result of which it has got NAAC Accreditation at "B' Grade just within 5 years of its establishment.

The Institute has a basket full of achievements with credible and productive Research with high citation undertaken by the members of faculty and students getting best paper awards in research conferences, faculty members receiving a number of sponsored Research Projects from various sponsoring agencies, students ensuring a high success rate at on and off campus recruitment, outgoing students getting opportunities for higher studies in leading universities, Institute becoming a leader to reckon with in the NCC/NSS/ Yoga activities and most importantly practicing greenovation (Green + Innovation) and goodness in its work culture as a rule. E-Office is in operation with Installed ERP solution and solar power system is operating in full.

The Institute is running as of now in its temporary campus at Yupia, and parts of various departments are running classes in permanent campus at Jote. Every attempt, most sincerely and vigorously has been undertaken for shifting the whole of the Institute to the permanent campus within a short time.

All these achievements are being made possible due to collective, cohesive and co-ordinated exercise by entire fraternity of NIT-Arunachal Pradesh. We have created a culture that has resulted in accepting deep and true devotion to "Karma is Dharma." The result oriented data of our stated exercise are portrayed in the report.

**(Prof. C. T. Bhunia)**  
Director, NIT, AP

"Work is Worship"



## **VISITOR**

**Dr. Pranab Mukherjee  
Hon'ble President of India**



## **Chairperson**

**Board of Governors  
Dr. Gangan Prathap**



## **Director**

**Prof. (Dr.) Chandan Tilak Bhunia**





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**ANNUAL REPPORT  
PART - I**





**SECTION - A**

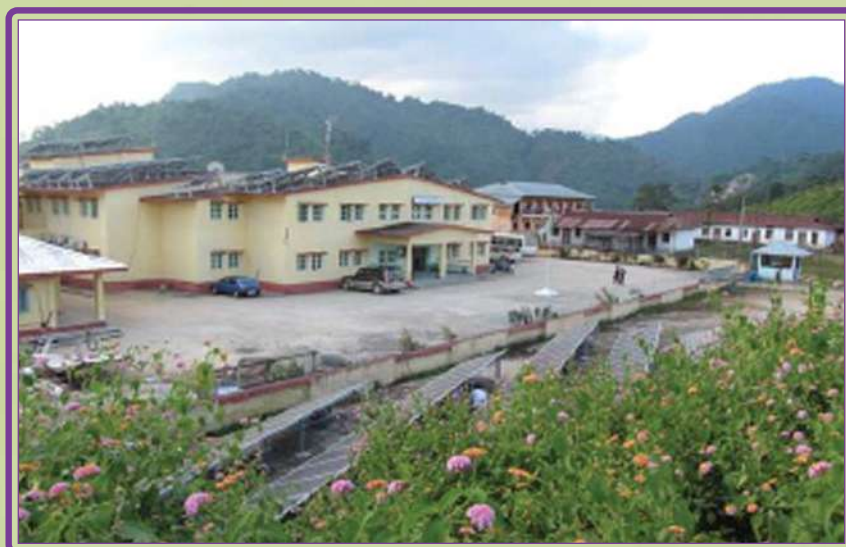




## 1. OVERVIEW

### 1. Introduction

National Institute of Technology (NIT)-Arunachal Pradesh was inaugurated on 18th August 2010 as a member of a group of ten new NITs. These new NITs were established as centres of excellence in technical education to combat the growing needs of technological professionals at the National and International level as well. The Institute has been through many trials since its establishment in 2010; but ultimately it has triumphed over all the challenges and is thriving today more than 600 students on roll and about 50 distinguished members of faculty as well as a good many numbers of competent administrative personnel.



A view of the present campus at Yupia, Arunachal Pradesh

### 1.1. Location (Temporary Campus)

The campus of the Institute is temporarily housed in Yupia, the headquarters of the Papum Pare district of Arunachal Pradesh. The land, buildings and structures were made available to the Institute by the Government of Arunachal Pradesh. Yupia is about 18 km from Itanagar (the capital of Arunachal Pradesh) and is about 11 km from Naharlagun town, which is the twin capital town. The place has a healthy climate with moderate temperature ranging from 13 °C to 33 °C with an average annual rainfall of 365 mm. The nearest railway station is Naharlagun, which is about 3 kilometres from Yupia. The nearest air-port is Lilabari, Assam which is about 50 km away from Yupia.

## 1.2. Travel Guide to Campus at Yupia

**Rail Link:** The nearest railway station is Naharlagun, which is about 3 km from Yupia. Overnight train services have started between Guwahati and Naharlagun. Weekly train service has also started between New Delhi and Naharlagun. Taxi services for Yupia are available at Naharlagun Railway station.

**Air Link:** The nearest Airport is Lilabari (North Lakhimpur) in Assam, which is about 50 km and the nearest helipad is at Naharlagun. Daily helicopter services are available between Guwahati and Naharlagun except on Sundays.

**Road Link:** Guwahati is at a distance of 370 km from Naharlagun. Day and Night bus services are available from Guwahati to Naharlagun from where taxi service can be availed to reach Yupia.

## 1.3. Permanent Campus

The Government of Arunachal Pradesh has also provided free of cost a land of 302 acres (After surveying it is found to be about 133 acres of usable land only) in Jote (District: Papum Pare, Arunachal Pradesh). The hilly areas and the undulating terrain therein have been levelled so as to bring out a vast plot of land fit for a series of robust structural constructions for the Institution. During the year under report, the construction works for boundary wall, approach roads, water supply system, power supply system, shopping complex are in good progress and are likely to be completed shortly. The construction works for Administrative Building, Academic Block, and Director's residence have progressed toward completion. The construction works are underway through Government agencies only. The Institute had already started their academic classes for Mechanical Engineering Department at the permanent site Jote since January 2016. The classes for three more departments: Civil Engineering, Bio-Technology and Chemical Engineering are likely to start at the permanent campus from July, 2016.

## 1.4. Human Resources

The Institute has since received sanction for faculty and non-faculty posts as per its students' strength. However, the entire process of recruitment could not be completed due to non-availability of qualified candidates willing to serve in this remote area of the country. In fact, this particular problem is now being faced by most of the Centrally-funded Technical

Institutes in the North-Eastern Region. This aspect needs immediate attention at an appropriate level. The Institute has however, started its colourful journey with the available human resources, infrastructural facilities etc. In academic session 2015-16 good numbers of faculty members were recruited to enhance the academic and research quality of this premiere Institute.



Mechanical Engineering Classes (2nd year & 3rd year)  
being held at permanent campus site, Jote

#### 1.4. NAAC Accreditation Report:

Entire family of NIT, Arunachal Pradesh is privileged and honoured that:

- i. As per recommendation of the Kakotkar Committee and subsequently direction of NIT Council, NIT- Arunachal Pradesh undertook external review by a committee headed by Prof. Sukumar Nandi, former Dy. Director, IIT, Guwahati twice. In the first review the institute was academically graded as **“good”** and the second review as **“good and improving.”**
- ii. To get accreditation of the institute thereafter, bold initiatives were taken to approach Govt. Institutions namely National Assessment and Accreditation Council (NAAC) and National Board of Accreditation

- (NBA) for the same. NAAC accreditation is over, we are delighted that the Institute has been ranked at grade **'B' out of the existing A, B, C, grade of accreditation.**
- iii. The NAAC peer review team headed by **Prof. H. P. Khincha, Indian Institute of Science, Bagalore** visited the Institute from **15th March, 2016 to 17th March, 2016.** The peer review committee evaluated the Institute on various parameters which are important to any Academic Institute. The other team members are given in table below:
- iv. Full **report of the NAAC evaluation** of this baby institute is appended below.
- v. From survey it is revealed that no Central Funded Institute (CFI) in its very first five years of existence has ever made accredited. We feel proud of being accredited in group 'B' out of A, B, C grade within just five years of establishment.

NAAC Peer Review Team Members	
Prof. H. P. Khincha, IISc Bagalore	Chairman
Prof. R. G. Sonkawade, Dept. Physics, Shivaji University, Kolhapur	Member Coordinator
Prof. P. Jayakumar, Bangalore, Karanataka	Member
Prof. Vilas Kharat, HoD, Computer Science Dept., Pune University	Member
Prof. Ashis K Mukherrjee, Bio-technology Dept., Tezpur University	Member
Prof. Samendra Nath Saha, HoD, Chemical Engineering Dept., Guru Ghasidas Vishwavidyalaya, Bilaspur	Member
Prof. Dharmendra S Sharma, HoD, Mechanical Engineering Dept., The Maharaja Sayajirao University, Baroda	Member
Dr. B. S. Madhukar	NAAC Coordinantor (Adviser)

**PEER TEAM REPORT**

**On**

**Institutional Accreditation  
Of**

**National Institute of Technology  
Yupia, Doimukh – 791 112, Arunachal Pradesh**

**March 15-17, 2016**









**National Assessment & Accreditation Council  
Jnana Bharthi, P.O. Box No. 1075, Nagar Bhavi  
Bangalore – 560 072**

PEER TEAM REPORT ON INSTITUTIONAL ACCREDITATION OF  
**NATIONAL INSTITUTE OF TECHNOLOGY**  
**YUPIA, DOIMUKH, ARUNACHAL PRADESH**

<b>SECTION I: GENERAL INFORMATION</b>	
1.1 Name & address of the Institution	National Institute of Technology, P.O. –Yupia, P.S.– Doimukh, Dist.- Papum Pare, Arunachal Pradesh, Pin - 791 112
1.2 Year of Establishment	2010
1.3 Current Academic Activities at the Institution (Numbers)	
• Faculties/Schools	Arts - 1, Science - 2, Engineering-7, Total=10
• Departments/Centres	9 departments
• Programmes/Courses offered	UG - 7, PG - 9, Ph.D. - 08, Total=24
• Permanent Faculty Members	46
• Temporary Teachers	05
• Permanent Support Staff	52
• Students	609
1.3 Three major features in the institutional Context (As perceived by the Peer Team)	<ul style="list-style-type: none"> <li>• Institution in a geographically remote area</li> <li>• Operating from a temporary campus and Facilities/permanent campus is coming up shortly</li> <li>• Institution aspiring to fulfil needs of national &amp; regional development</li> </ul>
1.4 Dates of visit of the Peer Team (A detailed visit schedule may be included as Annexure)	March 15, 16 and 17, 2016
1.5 Composition of the Peer Team which undertook the on-site visit	
Chairman	<b>Prof. H. P. Khincha</b> (Ex- VC, VTU, Belgaum) Dept. Of Electrical Engineering Indian Institute of Science, Bangalore –560012, Karnataka
Member Coordinator	<b>Prof. R. G. Sonkawade</b> Department of Physics, Shivaji University, Kolhapur-416 004, Maharashtra

NAAC for Quality and Excellence in Higher Education





Member(s)	<b>Prof. P. Jayakumar</b> #21, First Main, 8 <sup>th</sup> Cross, ISRO Layout, Bangalore-560078, Karnataka
	<b>Prof. Vilas Kharat</b> Professor and Head Dept. of Computer Science S.P. Pune University, Pune- 411007, Maharashtra
	<b>Prof. Ashis K Mukherjee</b> Professor, Department of Molecular Biology & Bio Technology, Tezpur University, Napaam , Tezpur – 784028, Assam
	<b>Prof. Samarendra Nath Saha</b> Head, Dept. of Chemical Engineering, Guru Ghasidas Vishwavidyalaya (Central University), Bilaspur – 495009, Chhattisgarh
	<b>Prof. Dharmendra S Sharma</b> Head, Dept. of Mechanical Engineering The Maharaja Sayajirao University of Baroda, Kalabhavan, Baroda - 390 001, Gujarat
NAAC Coordinator	<b>Dr. B. S. Madhukar</b> Adviser, NAAC, Bangalore

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National Institute of Technology, Arunachal Pradesh

Section II: CRITERION WISE ANALYSIS	Observations (Strengths and/or Weakness) on key-aspects (Please limit to three major ones for each and use telegraphic language.) (It is not necessary to indicate all the three bullets each time; write only the relevant ones.)
<b>2.1 Curricular Aspects</b>	
2.1.1 Curricular Planning and Implementation	<ul style="list-style-type: none"> <li>• Curricula updated regularly</li> <li>• Academic calendar prepared and followed</li> <li>• Curricula needs updating and restructuring in newly opened departments</li> </ul>
2.1.2 Academic flexibility	<ul style="list-style-type: none"> <li>• Additional add on courses such as entrepreneurship, yoga etc. conducted</li> <li>• Elective courses offered at 3<sup>rd</sup> or 4<sup>th</sup> year level</li> <li>• CBCS yet to be implemented</li> </ul>
2.1.3 Curriculum Enrichment	<ul style="list-style-type: none"> <li>• Conducting visiting faculty/Professors lecture</li> <li>• One course per semester conducted by Industrial experts</li> <li>• Foreign language courses offered</li> </ul>
2.1.4 Feedback System	<ul style="list-style-type: none"> <li>• Online feedback collected from all students and analysed</li> <li>• Feedback obtained from the stakeholders like parents, Industry personnel</li> <li>• Online feedback from academicians</li> </ul>
<b>2.2 Teaching Learning and Evaluation</b>	
2.2.1 Student Enrolment and Profile	<ul style="list-style-type: none"> <li>• Admission process through centralized counselling agency on all India basis</li> <li>• SC/ST/OBC representation as per Govt. norms</li> <li>• Gender ratio is relatively low</li> </ul>

	<ul style="list-style-type: none"> <li>• Few full time research scholars in the Institution</li> </ul>
2.2.2 Catering to Student Diversity	<ul style="list-style-type: none"> <li>• Institution offers induction programme for newly admitted students</li> <li>• Special tutorial classes for slow learners</li> <li>• Advance learners provided opportunities and support for attending conferences/workshop</li> </ul>
2.2.3 Teaching- Learning Process	<ul style="list-style-type: none"> <li>• Course hand outs prepared and distributed in some of the departments</li> <li>• Limited use of ICT resources in teaching-learning</li> <li>• Course files preparation need strengthening</li> </ul>
2.2.4 Teacher Quality	<ul style="list-style-type: none"> <li>• About 60% faculty with PhD. degree</li> <li>• Faculty members encouraged for a month long industry training</li> <li>• Participation in FDP and Conferences need strengthening</li> <li>• Most of the departments lack experienced senior faculty to guide the younger faculty</li> <li>• Awards / recognition to faculty inadequate</li> </ul>
2.2.5 Evaluation Process and Reforms	<ul style="list-style-type: none"> <li>• Internal online evaluation system practiced in some departments</li> <li>• Grades and results declared in time and on website</li> <li>• Continuous evaluation process needs strengthening</li> <li>• Examination results processing system computerized</li> </ul>
2.2.6 Student Performance and learning Outcomes	<ul style="list-style-type: none"> <li>• Overall students' performance satisfactory</li> <li>• Learning outcome assessment is not visible</li> </ul>

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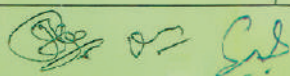


	<ul style="list-style-type: none"> <li>• Progression from UG to PG and PG to PhD. poor</li> </ul>
<b>2.3 Research, Consultancy &amp; Extension</b>	
2.3.1 Promotion of Research	<ul style="list-style-type: none"> <li>• Research Board with external members exists</li> <li>• Provision of 5 Lakhs per department startup grant for innovative projects</li> <li>• Research culture of the Institute needs improvement</li> </ul>
2.3.2 Resource Mobilization for Research	<ul style="list-style-type: none"> <li>• Financial support of hardware based projects at UG/PG level</li> <li>• Few externally funded research projects</li> <li>• Industry collaboration for research negligible</li> <li>• Seed money to faculty for initialization of research not provided</li> </ul>
2.3.3 Research Facilities	<ul style="list-style-type: none"> <li>• Major research facilities for teachers and students need strengthening</li> <li>• Software resources for research may be upgraded</li> <li>• E-journals and resources available</li> <li>• Research labs under development</li> </ul>
2.3.4 Research Publications and Awards	<ul style="list-style-type: none"> <li>• Quality and quantity of publications need significant improvement</li> <li>• Institute publishes biannual research journal</li> <li>• No awards and recognition to the faculty</li> </ul>
2.3.5 Consultancy	<ul style="list-style-type: none"> <li>• Faculty consultancy policy is in place</li> <li>• Consultancy activities is yet to be initiated</li> <li>• Patent filing initiated</li> </ul>

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2.3.6 Extension Activities and Institutional Social Responsibility	<ul style="list-style-type: none"> <li>• Good extension activities through NCC and NSS</li> <li>• Strong neighbourhood networking through adoption of villages around</li> <li>• Solar power utilized for meeting Institute's energy requirement</li> </ul>
2.3.7 Collaborations	<ul style="list-style-type: none"> <li>• Collaboration with few Institutes such as IIT, Bombay and NIRD, Hyderabad and IIT, Guwahati</li> <li>• Minimal formal collaboration with Industry</li> </ul>
<b>2.4 Infrastructure and Learning Resources</b>	
2.4.1 Physical facilities	<ul style="list-style-type: none"> <li>• Institution operating in temporary premises</li> <li>• New campus under construction</li> <li>• Outside minimal residential facilities for students with Wi-Fi connectivity</li> <li>• Academic infrastructure crowded and limited</li> <li>• Indoor and outdoor sports facilities very limited</li> </ul>
2.4.2 Library as a Learning Resource	<ul style="list-style-type: none"> <li>• Library committee exists</li> <li>• Limited seating capacity in library</li> <li>• E-resources available</li> <li>• Provision for annual library budget sufficient</li> </ul>
2.4.3 IT Infrastructure	<ul style="list-style-type: none"> <li>• Good Computer student ratio</li> <li>• Internet connectivity in hostels exist</li> <li>• NKN connectivity exists</li> <li>• Temporary campus Wi-Fi enabled</li> </ul>
2.4.4 Maintenance of Campus Facilities	<ul style="list-style-type: none"> <li>• Good upkeep and maintenance of temporary campus</li> <li>• Adequate budget for maintenance</li> </ul>

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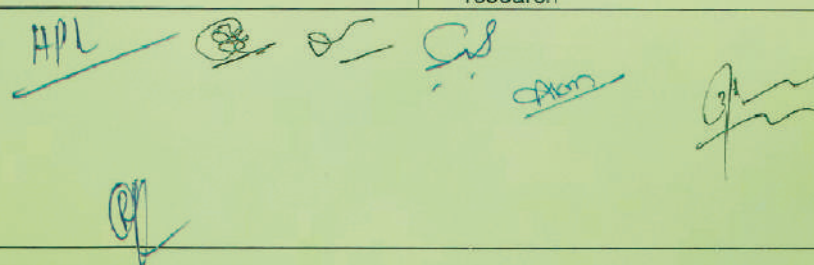
National Institute of Technology, Arunachal Pradesh

	<ul style="list-style-type: none"> <li>Designated Officer to take care of maintenance work</li> </ul>
<b>2.5 Student Support and Progression</b>	
2.5.1 Student Mentoring and Support	<ul style="list-style-type: none"> <li>Mentoring system support for students needs strengthening</li> <li>Psychological counselling by psychiatric experts initiated</li> <li>Financial support and scholarship process for students needs attention</li> <li>Placement brochure prepared and circulated</li> </ul>
2.5.2 Student Progression	<ul style="list-style-type: none"> <li>Students progression semester to semester good</li> <li>Students progression from BE to ME and ME to Ph.D poor</li> <li>Placement profile can be improved</li> </ul>
2.5.3 Student Participation and Activities	<ul style="list-style-type: none"> <li>Students cultural and hobby clubs limited</li> <li>Students encouraged to participate in outside cultural and sports competitions</li> <li>Students representation in students' centric activities to be encouraged</li> </ul>
<b>2.6 Governance, Leadership and Management</b>	
2.6.1 Institutional Vision and Leadership	<ul style="list-style-type: none"> <li>Vision, mission statement exist</li> <li>Positive attitude towards Institutional growth and need</li> <li>Faculty participation in decision making committees to be strengthened</li> <li>Motivated and effective leadership</li> </ul>
2.6.2 Strategy Development and Deployment	<ul style="list-style-type: none"> <li>Strategy and vision documentation to be prepared</li> </ul>

	<ul style="list-style-type: none"> <li>Financial resources mapping for implementation of perspective plan required</li> <li>Learning activities strategically implemented</li> <li>ERP system exists and utilized</li> </ul>
2.6.3 Faculty Empowerment Strategies	<ul style="list-style-type: none"> <li>Mechanism for professional development exists</li> <li>Best Teacher Award in place</li> <li>Casual Welfare fund for staff</li> </ul>
2.6.4 Financial Management and Resource Mobilization	<ul style="list-style-type: none"> <li>ERP system for financial management implemented</li> <li>External funding through projects, consultancy, donations, endowments are meagre</li> <li>Adequate operational budget for all relevant needs</li> </ul>
2.6.5 Internal Quality Assurance System	<ul style="list-style-type: none"> <li>IQAC Cell recently established</li> <li>Academic audits conducted</li> <li>Engineering audits conducted</li> </ul>
<b>2.7 Innovation and Best Practices</b>	
2.7.1 Environment Consciousness	<ul style="list-style-type: none"> <li>Solar Power utilized for meeting energy requirements</li> <li>Solar Power street lighting installed in new campus</li> </ul>
2.7.2 Innovations	<ul style="list-style-type: none"> <li>M.Tech program in Appropriate Technology &amp; Entrepreneurship Practice in collaboration with NIRD, Hyderabad</li> <li>New approach in teaching learning process being initiated</li> </ul>
2.7.3 Best Practices	<ul style="list-style-type: none"> <li>One course every semester taught by Industry experts</li> <li>ERP effectively utilized</li> </ul>

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Section III: OVERALL ANALYSIS	Observations (Please limit to five major ones for each and use telegraphic language) (It is not necessary to denote all the five bullets for each)
3.1 Institutional Strengths	<ul style="list-style-type: none"> <li>• Good and effective leadership</li> <li>• Young motivated faculty</li> <li>• Good NCC/NSS activities</li> <li>• Adequate land and buildings planned in the new campus</li> </ul>
3.2 Institutional Weakness	<ul style="list-style-type: none"> <li>• Lack of research facilities and laboratories</li> <li>• Low consultancy and entrepreneurial activities</li> <li>• Limited industrial exposure</li> <li>• Lack of experienced faculty members</li> </ul>
3.3 Institutional Opportunities	<ul style="list-style-type: none"> <li>• Initiate new academic process in relevant disciplines</li> <li>• Initiate appropriate incubation facilities</li> <li>• Spearhead the economic development of the state/ country</li> <li>• Participation in National and International level joint research programmes</li> <li>• Develop special study/ research centres for interest of the region</li> </ul>
3.3 Institutional Challenges	<ul style="list-style-type: none"> <li>• Geographical locational disadvantage</li> <li>• Recruiting and retaining faculty</li> <li>• Placement opportunities for students</li> <li>• Collaboration with academia and industry</li> <li>• Attracting external funding and support for research</li> </ul>

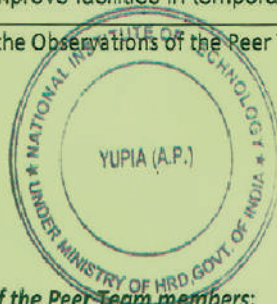


## Section IV Recommendations for Quality Enhancement of the Institution

(Please limit to ten major ones and use telegraphic language)  
(It is not necessary to indicate all the ten bullets)

- To establish relevant research laboratories and facilities
- To enhance and strengthen faculty development initiatives
- To recruit senior faculty in all disciplines
- To improve the quality and quantity of research publications
- To develop long-term strategic plan with well defined goals and objectives merging with regional requirement
- To enhance co-curricular and extra-curricular activities
- To enhance the placement system for better opportunities
- To provide for training to support staff in appropriate skill avenues
- To ensure adequate health and medical facilities for faculty, staff and students including insurance policies
- To improve facilities in temporary hostels

I agree with the Observations of the Peer Team as mentioned in this Report.



Signature of the Head of the Institution

DIRECTOR

National Institute of Technology  
(Established by Ministry of Human  
Resource Development, Govt. of India)  
Yupia, Arunachal Pradesh

## Signatures of the Peer Team members:

Name	Designation	Signature with Date
Prof. H. P. Khincha	Chairperson	H.P. Khincha 17/3/2016
Prof. R. G. Sonkawade	Member Coordinator	R.G. Sonkawade 17/3/2016
Prof. Vilas Kharat	Member	V. Kharat 17/3/16
Prof. P Jaya Kumar	Member	P. Jaya Kumar 17/3/16
Prof. Ashis K Mukherjee	Member	A. K. Mukherjee 17/3/2016
Prof. Samarendra Nath Saha	Member	S. N. Saha 17/3/16
Prof. Dharmendra S Sharma	Member	D. S. Sharma 17/3/16
Dr. B. S. Madhukar	Advisor, NAAC	

Place: Yupia

Date: March 17, 2016



NAAC Peer Team visit to NCC/NSS unit (1)



NAAC Peer Team visit to NCC/NSS unit (2)



Team Members at Sports Section





Cultural Programme for NAAC Pear Team

### 1.5. Journey Ahead

In the aforesaid process, the Institute is trying its level best to take care of the necessary Academic activities, Research work etc. with the existing faculty members, laboratories, libraries, IT facilities etc. It has also provided full-fledged hostel facilities to all of its students located either in the temporary campus or outside it. To provide a congenial ambience to enable the students to continue their studies in proper manner, due care is taken and it is ensured they feel homely.

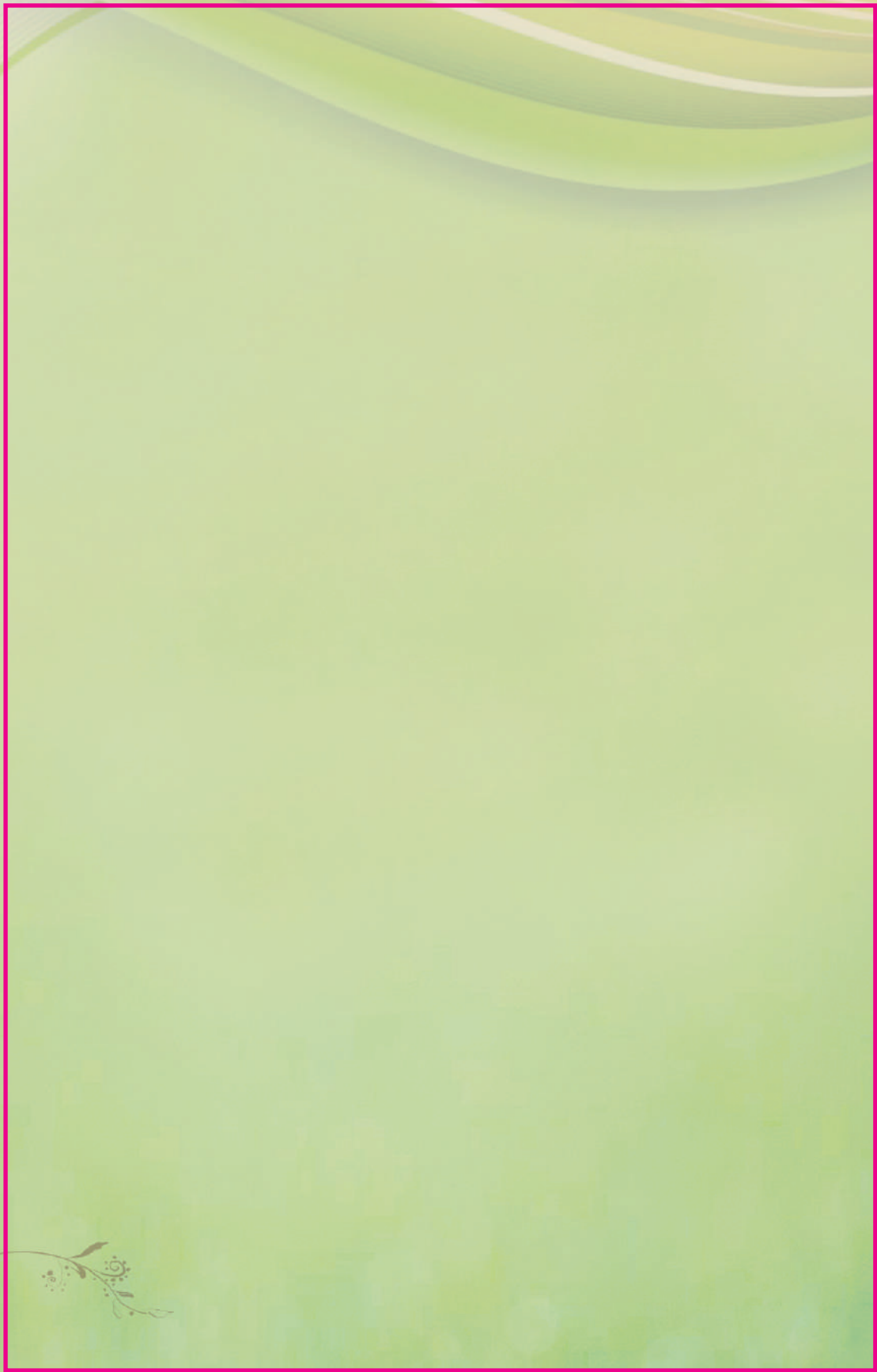
### 1.6. Responsibilities

NIT-Arunachal Pradesh take the responsibility for accomplishing a noble task of catering to the needs of the local people and fulfilling the aspirations of the talented youths belonging to the poorest among the poor residing in the remotest areas of the State. In order to ensure that the students can avail the facilities of Technical Education, the Institute has to play a bigger role while providing suitable training/counselling programme to the students at 10+2 level in the schools of the State. The Institute is also striving hard to provide necessary technological know-how to the local industries so that the overall industrial development of the State can move forward in a faster pace.

### 1.7. Conclusion

The Institute is quite confident to accomplish the tasks bestowed upon it and fulfil its cherished dreams in near future, in this treasure house of nature.

**“Everything that is done in the world is done by hope.” ~ Martin Luther**



## 2. EXECUTIVE SUMMARY

### 2.0. Introduction

National Institute of Technology-Arunachal Pradesh was inaugurated on 18th August, 2010 as an ***Institute of National Importance*** in technical education to combat the growing needs of technical professionals.

### 2.1. Vision and Mission statement

The Institute has passed through many trials since its establishment in 2010; but ultimately has triumphed over all the challenges and is now marching ahead with about 600 students on roll and 51 distinguished members of faculty as well as a good many numbers of competent administrative personnel.

#### Vision statement

Our vision is to impart quality technical education with strong underpinning of sound knowledge in the domain. Our approach is interactive, innovative and quintessentially holistic. Our goal is to produce imaginative entrepreneurs, technology leaders of the millennium and researchers with a profound sense of humanistic and ethical values.

#### Mission statement

Our mission is that of producing such Technical Engineers who will not run after jobs; but for whom jobs will run after them, and such that they will create employment and develop new technologies for a faster, sustainable and inclusive growth.

In order to realize the goals of its Vision and Mission, NIT-Arunachal Pradesh has framed a strategic and progressive academic plan for the next ten (10) years which may be seen at the Institute's website. This speaks of the determination and sound temperament of the members of the faculty and staff of the Institute. It is planned to make this Institute a global leader so as to earn global accolades.

Culturally and environmentally, this place is so rich that it would facilitate the Institute to become a fusion of scholastic students, academically bright and credible members of the faculty, innovative researchers and visionary leaders in India's "Land of the Rising Sun." By no stretch of imagination, it may, therefore, be said that NIT-Arunachal Pradesh is second to no other institute in its fields of development and momentum built by this time.

## 2.2 Academic information

National Institute of Technology-Arunachal Pradesh started 4-years B. Tech degree programmes in Computer Science & Engineering, Electronics & Communication Engineering and Electrical & Electronics Engineering since its inception in 2010. The second batch of students passed out in June, 2015. The Institute has added two more B. Tech degree programmes in Civil Engineering and Mechanical Engineering and two M. Tech programmes in Mobile Communication & Computing and Appropriate Technology & Entrepreneurship Practices from 2013-14. Besides five B. Tech programmes, The Institute has introduced one new B. Tech. programme in Bio-technology, one M. Tech programme in Electronics Design & Manufacturing and online MBA programme in the academic sessions 2014-15. The department of Electrical & Electronics Engineering has been renamed as department of *Electrical Engineering* in 2014-15. One more B. Tech programme in Chemical Engineering, two M. Tech Programme (M. Tech in Computer Science & Engineering and M. Tech in Renewable Energy & Energy Management) along with Three MS programmes (Mathematics & Computing, Mathematical Research and Mathematical Physics) started in the year 2015-16. The Institute has also started Research programme leading to Ph.D. in Computer Science & Engineering, Electronics & Communication Engineering, Mechanical Engineering, Physics, Chemistry, Mathematics and Management Science.

### Enrolment

In the year 2015-16, the Institute admitted 174 new students under U.G. programmes for seven disciplines against the total sanctioned strength of 210 (30 in each discipline) and 61 students under eight P.G. programmes against the total sanctioned strength of 160 (20 in each discipline). 13 faculty members of the Institute are also registered to pursue their research work leading to Ph. D. The total enrolment of the students during the year under report was 607 as against 462 in the previous year 2014-15.

Note: Under the report some students have left the Institute. The final list of total students (both UG and PG category) is 597.

### Faculty Position

During the year under report, three Associate Professors and forty-eight Assistant Professors were on the roll in various departments as against two Associate Professors and thirty-five Assistant Professors in the previous year. Further details are given in the Chapter - 5 of this report.

### 2.3. Academic programmes

National Conferences (NC)/International Conferences (IC)/Seminars (S)/ Workshops (W)/Continuing Education Programmes (CEP) organized during the last five years and the details thereof are as under:

#### Year-wise Details

Name of the Events	No. of Events				TOTAL
	2012	2013	2014	2015	
IC/NC	-	01	02	-	03
W	02	01	01	05	09
CEP	-	04	01	-	05
Total	02	06	04	-	12

#### Department-Wise Data

Sl. No	Department	Total no. of Seminar organized/conducted						TOTAL
		2013		2014		2015		
		NC+IC	W+CEP+S	NC+IC	W+CEP+S	NC+IC	W+CEP+S	
i	ECE, CSE & EEE	04	02	02	02	-	3	13
ii	PCES, MATH & MH	0	0	0	0	0	2	2
<b>Total</b>		<b>04</b>	<b>02</b>	<b>02</b>	<b>02</b>	<b>-</b>	<b>05</b>	<b>15</b>

### 2.4 Library

The excellence of any academic Institute is measured by certain infrastructures and other parameters. The library facility is one of them. The Institute has central library facility for the faculties, students and staff members. The Central Library has large number of collections of books for all branches of science, engineering, literatures, economics and management science including some journals and magazines. All the books are placed perfectly in order and one can easily access his/her required books. Online Public Access Catalogue (OPAC) service through Libsys is available in the Central Library. The Central Library has also reading room facilities for the students, faculties and other staff members of the Institute.

The Central Library of the Institute started with a small number of books in 2010. The collection development activity gathered momentum in subsequent years. At present, the Library has a collection of 27000+

books (1026 titles) and new books are being added to the collection regularly. These include books on all relevant subjects for teaching and are recommended by the distinguished faculty members. The Library also boasts of a select collection of fiction, literature and general interest books such as sports, GK, magazines etc, to take care of the needs of leisure and recreation reading of the users. The Institute also have a Departmental Library. All PG, Ph.D. and faculty members only can access the Departmental Library. The Department library has more than 1400 prints books of different sections.

### Library at a glance :

#### Collection :

Status as on	Books	E-books	E-journals	Print journals	Magazines	News Papers
31st March, 2015	20212	826 (Titles)	IEL Online (One user), Springer Link, ACM Digital Library	30	20	6
31st March, 2016	27042	1026 (Titles)	906 Science Direct (621), IEEE ASSP + IEEE POP (160), Conference proceedings (125)	32	26	6

#### Usage:

Avg. No. of books issued per month	Avg. No. of photocopies per month	Avg. No. of print-outs per month	Avg. reading room usage per month
10000	12000	1500	9000

#### Numbers of Books collection in Departmental Library:

Name of Departments	Titles	Volumes
CSE	105	430
EE	50	352
ECE	126	343
Mathematics	68	249
ATE	33	121
	<b>Total Title = 382</b>	<b>Total Vol. = 1469</b>

### Periodicals and Newspapers (Print Format):

At present, the Library subscribes 26 Magazines and six newspapers regularly.

### Electronic Resources:

In the present world of Information Explosion, access to electronic information resources is essential, particularly in an academic environment. Therefore, the Central Library has developed a collection of Electronic resources which provide access to thousands of journal articles, research papers, books and other resources. These includes Science Direct (621 Journals) and IEEE ASPP + IEEE POP (160 Journals and 125 Conference Proceedings) and Elsevier E-Books (1026 titles) etc.

### The Services:

At present, the Library offers services as enumerated below:

- ◆ **Lending facility:** Undergraduate students can borrow 8 books for the period of 15 days, whereas Ph. D. students can borrow up to 10 books for one month. Faculty members can borrow up to 15 books for a semester.
- ◆ **Renewals:** Books can be renewed only if there are no claims.
- ◆ **Reading Room:** The Library provides Wi-Fi enabled reading room with a seating capacity of nearly 35 students and 7 faculty members. Two PCs are reserved for students/faculties for the purpose of accessing E-resources, checking Web OPAC, etc.
- ◆ **Photocopying/printing:** Users are provided photocopying and printing facility (for limited pages), and they have to pay for that.

### The Central Library Team

Sri. Mohit Kumar De	:	Assistant Librarian
Sri Tapobrata Adhikari	:	Junior Assistant
Srimati Saswati Das	:	Junior Assistant
Srimati Moti Tayeng	:	Contingent staff

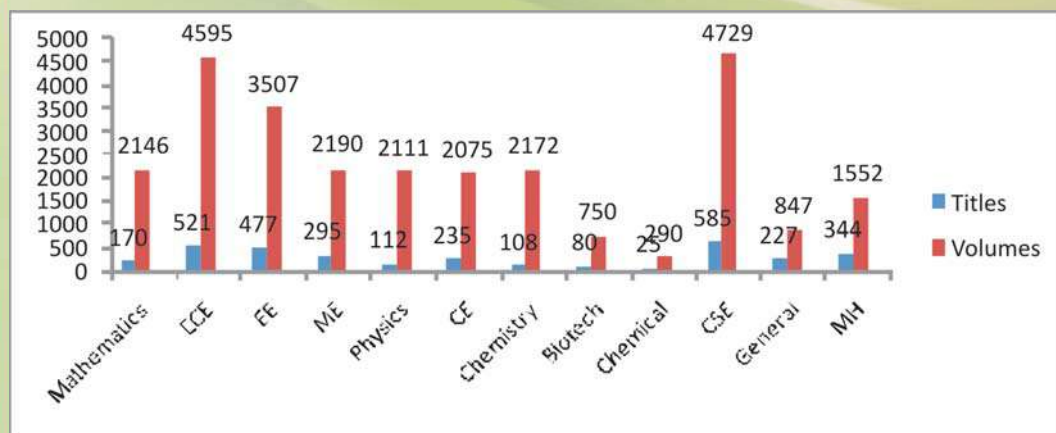
### The Departmental Library Team

Sri Nich Heri	:	Junior Assistant
Srimati Nabam Neme	:	Contingent staff

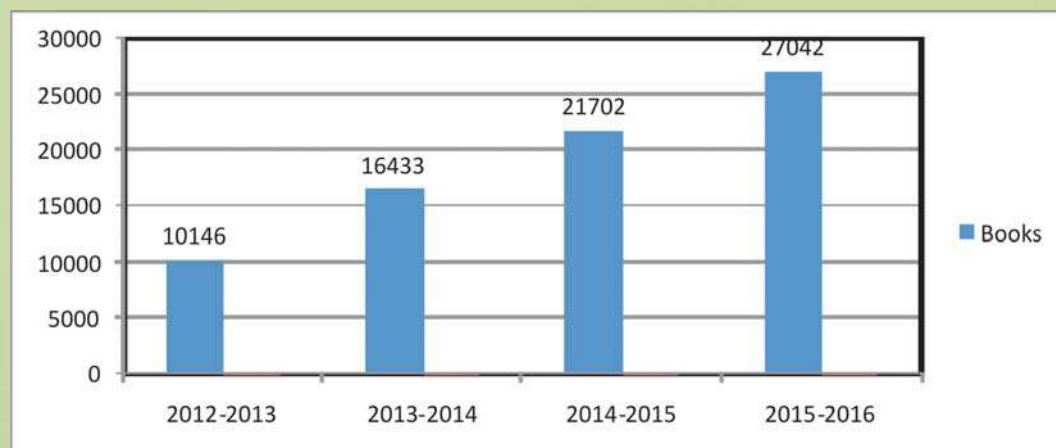


Central Library

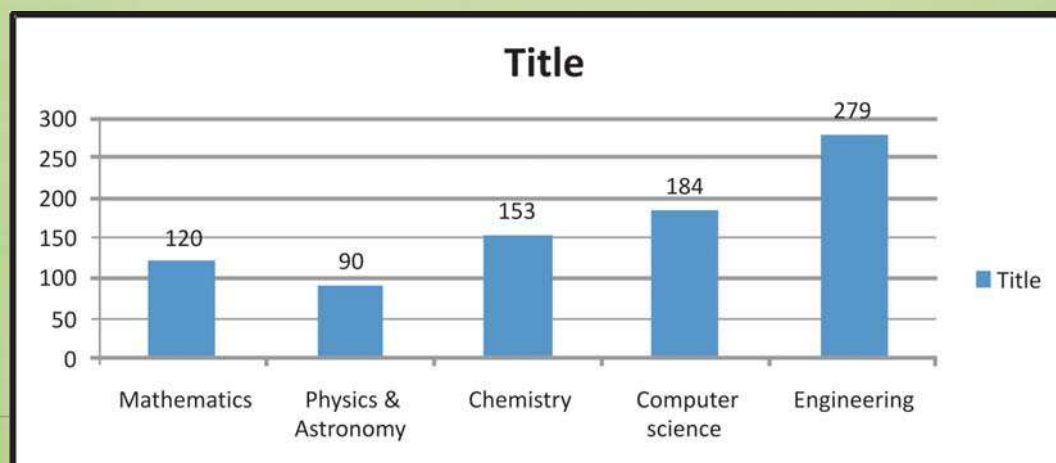
**Library Growth Chart:**



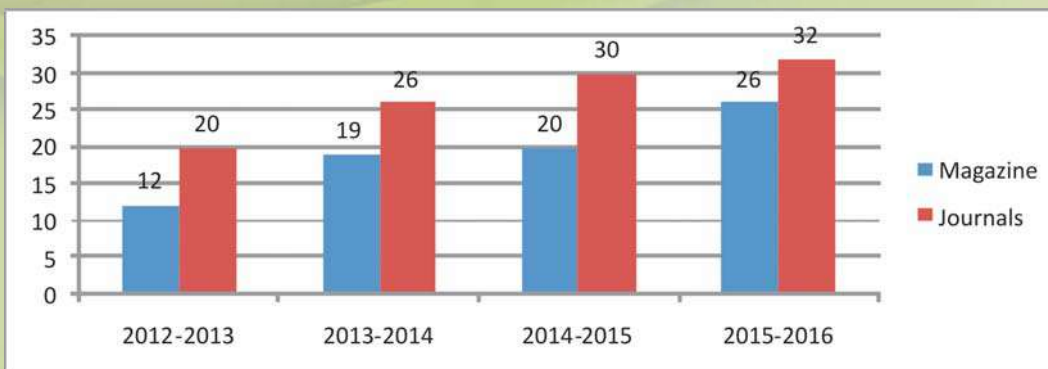
**Department Wise Stock Status**



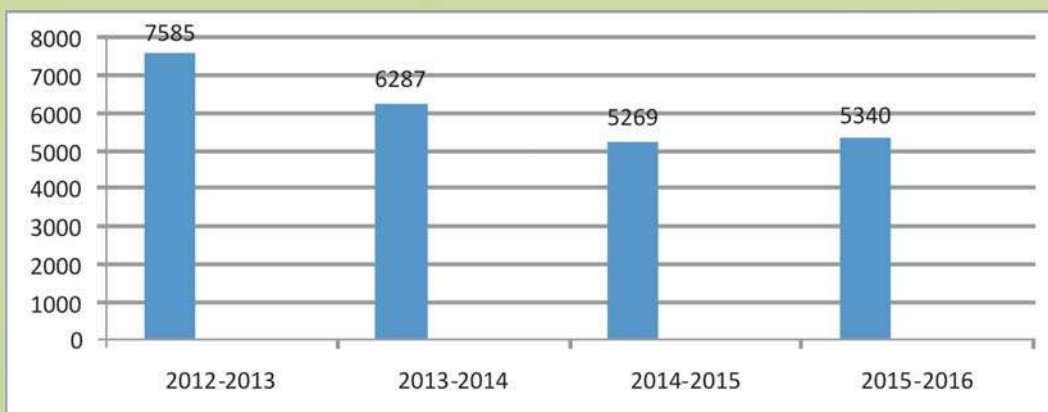
**Year Wise Growth Chart of Print Books**



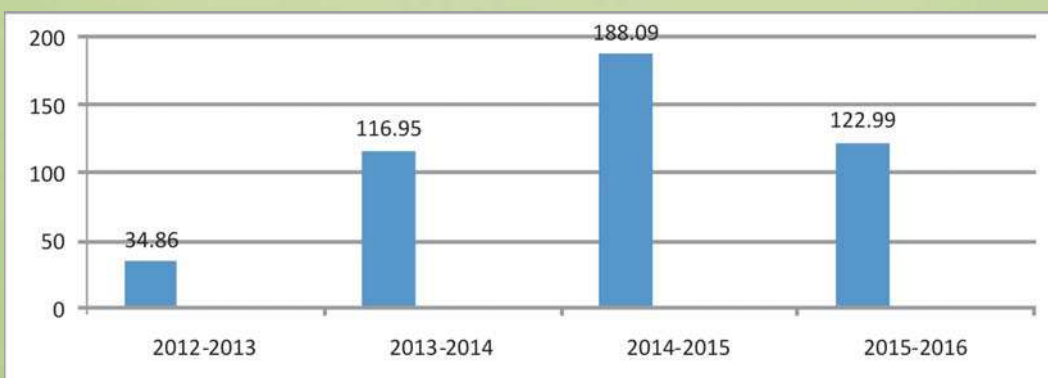
**Subject Wise Stock in Central Library (E- Books)**



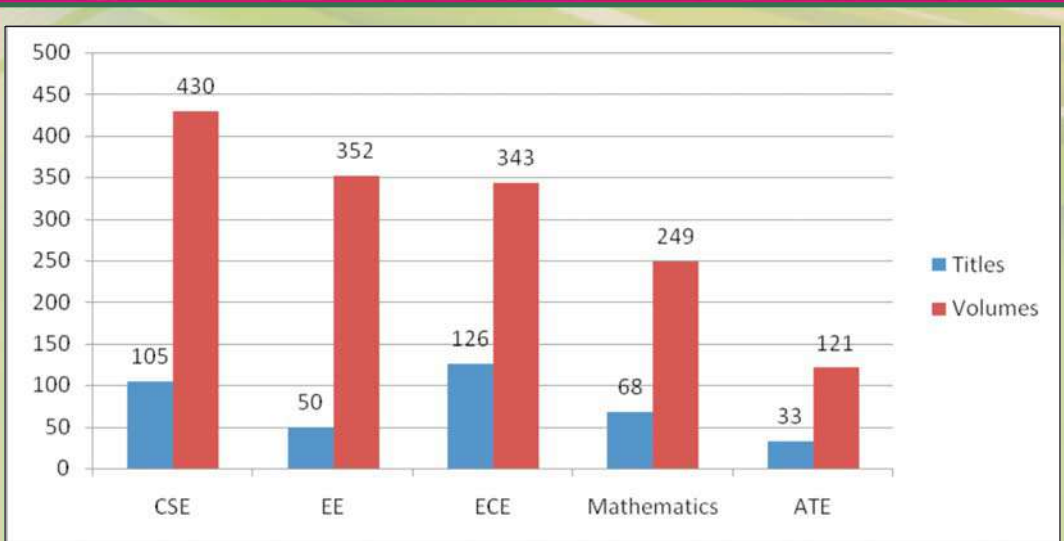
Year Wise Growth Chart of Print Journals and Magazine



Year Wise Purchase of Print Books



Year wise expenditure in lakh



Departmental Library Collections



Departmental Library

### 2.5. Language Laboratory

The language laboratory has revolutionized the way the faculties teach and the students are enabled to learn a language just within the term of using it. The language laboratory is envisaged to cater to the growing demands of a large pool of fluent English



speaking youths in areas like multinational IT companies in particular and in all walks of life in general. It has conceptualized customized training programme based on the latest technological tools and the most advanced training methodology to impart simplified and effortless learning of English.

The Institute has this Station-e language laboratory with seating capacity of 32 numbers which makes language learning a whole new experience, while helping students to improve their English speaking powers with ease and in the simplest way.

### 2.6. Internal Quality Assurance Cell

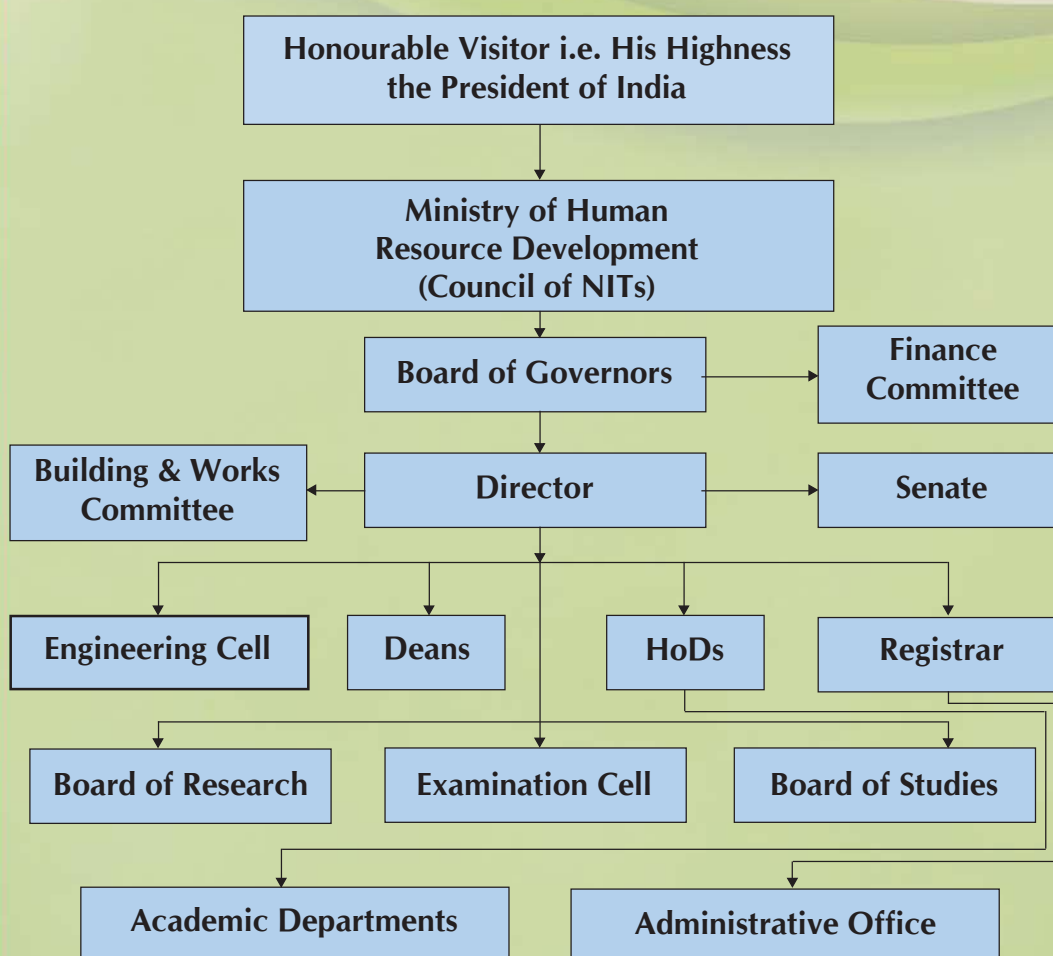
The Institute has its own internal quality assurance programme on the basis of regular evaluation process and students' feedback. After each semester before ending, students give their feedback on different parameters in respect of the faculty members. All the parameters are summarized and then, the best teacher is awarded on the basis of the feedback and other performances. Similarly based on the continuous evaluation process, the Institute also award best employee and best student of the year. The best teacher, the best student and the best employee for the academic session 2014-15 are:

Best Teacher : Dr. Pratap Kumar Swain, Asst. Professor, Physics

Best Student : Sri Kailash Prashad, ECE (Roll No: ECE/14/13)

Best Employee : Srimati Momi Das, Junior Assistant (F & A)

## 2.7. Organizational Structure



### Details of the structure (as on 31.3.2016)

#### DEANS (In Charge) OF THE INSTITUTE

Convenor of Academic Cell	: Prof. P. D. Kashyap,
Academic & Examination	: Dr. Utpal Kumar Saha
Research and Development	: Dr. Pinaki Chakraborty
Students Affairs	: Dr. A. Vanav Kumar
Finance	: Dr. Naba Kumar Pramanik
Planning & Development	: Dr. Ananta Kumar Atta

**HEADs OF DEPARTMENTS**

- ❖ **Department of Computer Science & Engineering**  
Dr. Swarnendu Kr. Chakraborty
- ❖ **Department of Electronics & Communication Engineering**  
Dr. Sanjeev Kumar Metya
- ❖ **Department of Electrical Engineering**  
Sri. Rajen Pudur
- ❖ **Department of Civil Engineering**  
Dr. Mainak Mallik
- ❖ **Department of Mechanical Engineering**  
Sri. Sandip Kumar Mandal
- ❖ **Department of Bio-technology and Chemical Engineering**  
Dr. Kimjolly Lhouvum
- ❖ **Department of Management and Humanities**  
Dr. Mihir Kumar Shome
- ❖ **Department of Physics, Chemistry and Electronic Science**  
Dr. Pratap Kumar Swain
- ❖ **Department of Mathematics**  
Dr. Susanta Maity

**ADMINISTRATIVE OFFICERS****DIRECTOR'S SECRETARIAT**

P.A. to Director (Junior Assistant)	: Sri Pralay Kumar Samanta
Confidential Assistant (Stenographer)	: Ms. Abi Tayeng
Junior Assistant	: Sri Sugriv Kumar

**OFFICE OF THE REGISTRAR**

Deputy Registrar	: Air Cmde (Retd.) Ajaya Kumar
Junior Assistant	: Sri Shibo Chetry
Multitasking Staff	: Sri Dipak Jana
Multitasking staff	: Sri Biplab Sasmal

**OFFICE OF THE FINANCE OFFICER**

Accountant : Sri S. P. Kar  
 Junior Assistant : Srimati Momi Das

**OFFICE OF THE DEAN EXAMINATION**

Junior Assistant : Sri Taw Talo  
 Sri Pinku Sharma  
 Sri Ujjal Samanta

**OFFICE OF THE PUBLIC RELATION & RTI**

CPIO (Legal Advisor) : Sri Taba Tadhe Goyang  
 Assistant Public Relation Officer : Sri Nabam Talar  
 (Addl. charge)

**VIGILANCE MATTER**

Chief Vigilance Officer : Dr. Rajat Subhra Goswami

**CENTRAL LIBRARY**

Assistant Librarian : Sri Mohit Kumar De

**ENGINEERING WING**

Junior Engineer (Electrical) : Sri Gomar Bam  
 Junior Engineer (Civil) : Sri Camdir Shina Tok  
 Junior Assistant (Contract) : Sri Mon Bholu Modak  
 Junior Assistant (Contingent) : Sri Pradip Kumar Roy

**HEALTH CENTRE**

Medical Officer (Part-time) : Dr. P. K. Deb  
 Nurse : Ms. Likha Yatup

**INSTITUTE's HOSTELS**

Hostel Provost : Sri Mohit Kumar De

**TRAINING AND PLACEMENT CELL**

Training and Placement Officer : Sri Manash Pritam Dutta

**ENTREPRENEURSHIP CELL**

Professor In-Charge : Dr. Pinaki Chakraborty

## NSS/NCC

NSS Programme Officer	: Dr. Karam Ratan Singh
NCC CTO (Care Taker Officer)	: Lt. Achyuth Sarkar
SAS Assistant (Superintendent)	: Sri Jorjo Jomoh

**2.8. New Appointments**

Group - A	: As given in Table-1
Group - B	: Nil
Group - C	: As given in Table-2 and Table-3

Table -1

Sl. No.	Name	Designation	Date of joining
i.	Dr. Tushar Dhabal Das	Asstt. Prof.	20/04/2015
ii.	Dr. Pallabi Kalita Hui	Asstt. Prof.	24/06/2015
iii.	Sri Anuran Bhattacharjee	Asstt. Prof. (Temperary)	15/07/2015
iv.	Dr. Saikat Kumar Jana	Asstt. Prof.	21/07/2015
v.	Sri Likha Arun	Asstt. Prof. (Temperary)	03/09/2015
vi.	Dr. Kunal Das	Asstt. Prof.	28/09/2015
vii.	Dr. M. Berlin	Asstt. Prof.	07/12/2015
viii.	Dr. Mainak Mallik	Assoc. Prof. (Ad-hoc)	22/12/2015
ix.	Dr. Abhik Banerjee	Asstt. Prof.	22/12/2015
x.	Dr. Anup Paul	Asstt. Prof.	30/12/2015
xi.	Dr. Shakti Prasad	Asstt. Prof.	05/01/2016
xii.	Sri Rajib Jana	Asstt. Prof.	21/01/2016
xiii.	Dr. Subhadeep Mukhopadhyay	Asstt. Prof.	22/01/2016
xiv.	Dr. Moirangthem Momocha Singh	Asstt. Prof.	08/02/2016
xv.	Dr. Deepak Gupta	Asstt. Prof.	12/02/2016
xvi.	Dr. K. Vijaya Kumar	Asstt. Prof.	27/02/2016

Table-2

Sl. No.	Name	Designation	Date of joining
i.	Shri Shina Camdir Tok	Technician	05.02.2016
ii.	Shri Yangfo Karling	Technician	05.02.2016
iii.	Shri Taba Eta	Technician	05.02.2016
iv.	Shri Sujit Das	Technician	09.02.2016
v.	Shri Taba Changring	Technician	09.02.2016
vi.	Shri Sunderlal Sangchoju Miji	Technician	25.02.2016

Table-3

Sl. No.	Name	Designation	Date of joining
i.	Mrs Radha Kumari Pandey	Junior Assistant	01.04.2015
ii.	Shri Manbhola Modak	Junior Assistant	01.04.2015
iii.	Shri Raja Ghosh	Multitasking staff	01.04.2015
iv.	Shri Biplab Sasmal	Multitasking staff	01.04.2015
v.	Mrs Gambom Ngomdir	Multitasking staff	01.04.2015
vi.	Mrs. Tana Yako	Multitasking staff	05.02.2016
vii.	Sri Pradeep K. Roy	Multitasking staff	05.02.2016
viii.	Sri Nabam Nanu	Multitasking staff	05.02.2016
ix.	Miss Nabam Yape	Multitasking staff	05.02.2016
x.	Sri Pinku Sarmah	Multitasking staff	05.02.2016
xi.	Sri Tanmoy Ghosh	Multitasking staff	08.02.2016
xii.	Sri Neelam Tekhi	Multitasking staff	08.02.2016
xiii.	Shri Riju Sharma	Junior Assistant	08/02/2016
xiv.	Shri Gollo Sera	Multitasking staff	09.02.2016

### 2.9. Meeting of Authorities of the Institute

The meeting of the Board of Governors, Finance Committee, Building and Works Committee, Senate and Board of Studies and Board of Research

were held regularly during the period under report, in accordance with the stipulations provided in the NIT Act, 2007, and the NIT (Amendment) Act, 2012 and the First Statutes of the NITs. The details of the meetings held during the period under report are as follows:

Board of Governors	: 11th November, 2015; 21st March, 2016
Finance Committee	: 11th November, 2015; 21st March, 2016
Senate	: 29th September, 2015; 20th March, 2016
Building and Works Committee	: 1st August, 2015; 27th September, 2015 and 20th March, 2016.
Board of Studies	: Nil
Board of Research	: 28th September, 2015; 19th March, 2016

## 2.10. Memorandum of Understanding

### Memorandum of Understanding with prestigious Organizations

- (i) In order to encourage Entrepreneurship Practices at national level, the Institute has started a new M. Tech Programme, first of its kind in the country, on 'Appropriate Technology and Entrepreneurial Practices' in collaboration with the National Institute of Rural Development, Government of India, Hyderabad. A MoU in this respect was signed between the Director, NIT-Arunachal Pradesh and the Director General, NIRD, Hyderabad on 11th May, 2013.

## 2.11. Power back-up

Besides having electric supply from the State Power Department, the Institute has installed its own 100 kW Solar Power System, which is operational since 28.10.2012 and in this way, the Institute has been able to minimize expenditure on utilisation of grid power. Throughout the year under report, the solar power system has functioned very satisfactorily. The specifications of the Solar Power System are as follows:

### Specification of Solar panels

Voc = 37.08 V  
 Isc = 8.45 A  
 Diode Rating = 15 A  
 Total number of Solar Panels: 410

### Battery Specification

Each Battery Back-up: 600 Ah  
 Voltage: 2V  
 Total number of Batteries: 240



**Solar panels of NIT- Arunachal Pradesh (This is reportedly the first of its kind among the thirty NITs)**



**Solar Power Control Room**



**Solar panels on top of the building of NIT- Arunachal Pradesh**

### 3. ACADEMIC ACTIVITIES

#### 3.0. Introduction

During the year under report, the Institute offered Undergraduate and Postgraduate programmes in the following disciplines apart from the Ph.D. programmes:

#### U. G. Programme:

- Computer Science & Engineering
- Electronics & Communication Engineering
- Electrical Engineering
- Civil Engineering
- Mechanical Engineering
- Bio-technology
- Chemical Engineering

#### P. G. Programme:

- M.Tech course in Mobile Communication & Computing
- M.Tech course in Appropriate Technology & Entrepreneurship Practices
- M.Tech course in Electronics Design & Manufacturing
- M. Tech course in Computer Science & Engineering
- M. Tech course in Renewable Energy & Energy Management
- MS course in Mathematical Physics
- MS course in Mathematics & Computing
- Online MBA Programme

#### Ph. D. Programme:

- Ph.D. Programme in Computer Science & Engineering
- Ph.D. Programme in Electronics & Communication Engineering
- Ph.D. Programme in Physics & Chemistry
- Ph.D. Programme in Mathematics
- Ph.D. Programme in Management & Humanities
- Ph.D. Programme in Mechanical Engineering

The Institute also facilitated the faculty members to pursue their higher studies leading to Ph.D. on part-time basis without affecting the academic schedule of the Institute.

### 3.1. Second Convocation Report

The second Annual Convocation of the National Institute of Technology-Arunachal Pradesh was held on 23<sup>rd</sup> November, 2015 for its second batch of degree recipients. Mr. Kiren Rijiju, the Hon'ble Union Minister of State for Home Affairs of India was the Chief Guest, and he delivered the convocation address. In his address, he stressed and advised the students to lend their hands and innovation ideas for better implementation of various schemes of present union government of India, such as Make in India, Clean India etc. The other honourable guests were Prof. D. K. Sinha, former Vice-Chancellor, Visva Bharati University, Santiniketan and Mr. Swami Vishweshananda, Secretary, Ramakrinsha Mission, Hospital, Itanagar. Mr. Swami talked about moral character and spiritual aspects of education whereas, Prof. Sinha gave the objective of science and Engineering. The Institute awarded two doctorate degree in this convocation. The total 23 no. of PG graduates (M. Tech in ATEP (9) and M. Tech in MCC (14)) and total 80 no. of B. Tech graduates in the branch of Computer Science & Engineering, Electrical & Communication Engineering and Electrical & Electronics Engineering also received their graduate degree. The Institute also offered seven gold medals to the toppers in various categories among the degree recipients.





Memories of the Second Convocation

### 3.2. Admission of students

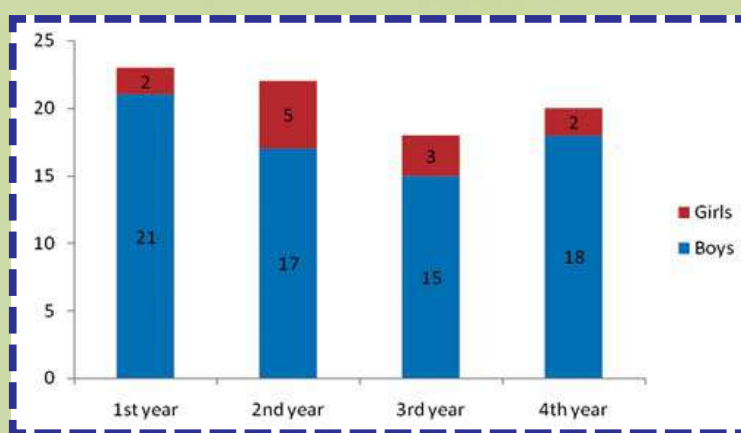
Students, after qualifying the Joint Entrance Engineering Examination (JEE) Main, report to the counselling centres and opt for the Institute and branch of study of their liking/choice and as per availability of the seats, admission is allowed to them. In case, there is no seat available in the Institute of their choice, they are allowed to opt other Institute or branch. Admissions to all NITs are conducted by the CSAB and NIT Patana was in-charge of this for the academic year 2015-16.

**Students Registered/Admitted during the academic year 2015-16-- at a glance**

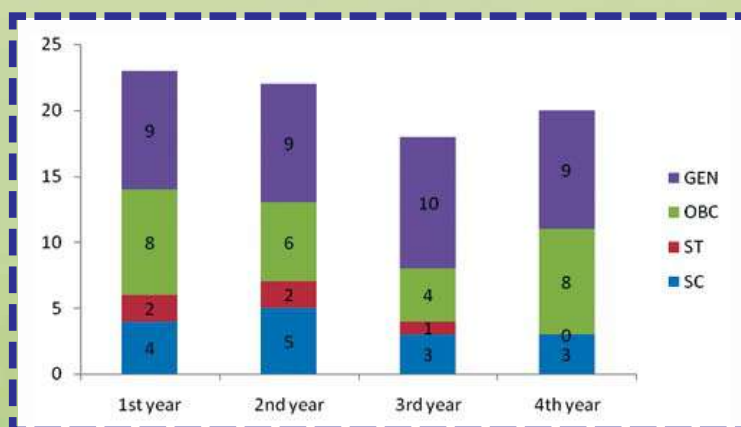
**Table 3.1  
(B.Tech. -Computer Science & Engineering)**

Year	Details of students enrolled													
	Total no. of students admitted		SC		ST		OBC		GEN		MINORITY		PH	
	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls
<b>1<sup>st</sup> year</b>	23	2	4	0	2	0	8	1	9	1	0	0	2	0
<b>2<sup>nd</sup> year</b>	22	5	5	2	2	1	6	0	9	2	1	0	0	0
<b>3<sup>rd</sup> year</b>	18	3	3	0	1	0	4	1	10	2	0	0	0	0
<b>4<sup>th</sup> year</b>	20	2	3	0	0	0	8	0	9	2	1	0	1	0
<b>Total</b>	83	12	15	2	5	1	26	2	37	7	2	0	3	0

(\*Minority & PH students are included in GEN/SC/ST/OBC category)



[No. of students registered (gender- wise) in Computer Science & Engineering]



[No. of students registered (category-wise) in Computer Science & Engineering]

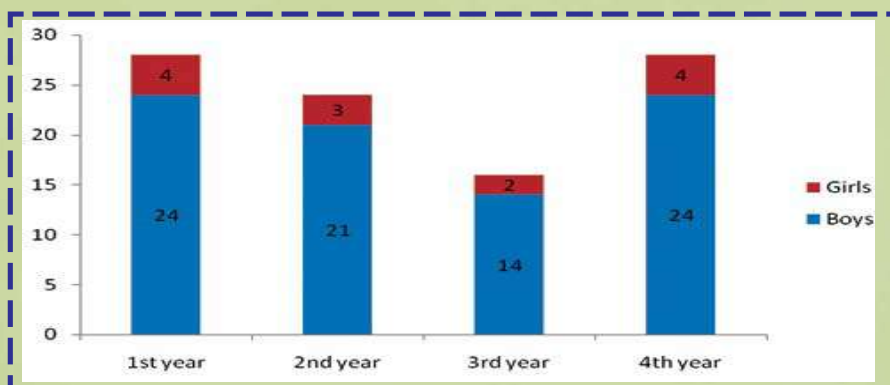
Table 3.2

**B.Tech. – Electronics & Communication Engineering**

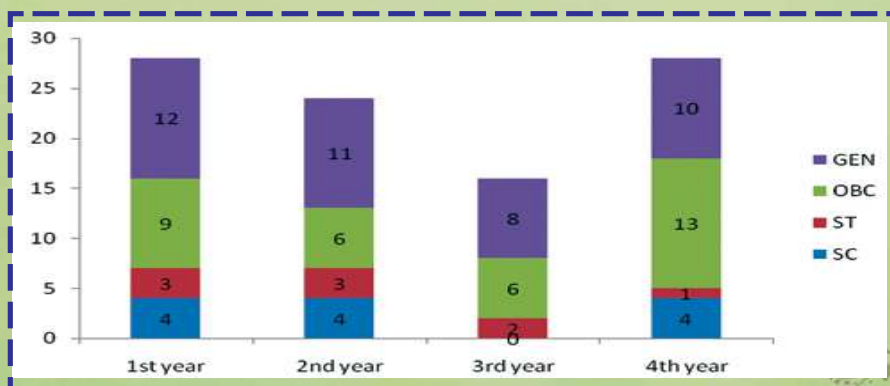
Year	Details of students enrolled													
	Total no. of students admitted		SC		ST		OBC		GEN		MINORITY		PH	
	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls
1 <sup>st</sup> year	28	4	4	0	3	1	9	0	12	3	1	0	1	0
2 <sup>nd</sup> year	24	3	4	1	3	0	6	1	11	1	0	0	1	0
3 <sup>rd</sup> year	16	2	0	0	2	0	6	0	8	2	0	0	0	0
4 <sup>th</sup> year	28	4	4	1	1	0	13	2	10	1	0	0	0	0
<b>Total</b>	<b>96</b>	<b>13</b>	<b>12</b>	<b>2</b>	<b>9</b>	<b>1</b>	<b>34</b>	<b>3</b>	<b>41</b>	<b>7</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>

(\* Minority & PH students are included in GEN/SC/ST/OBC category)

(B.Tech - Electronics & Communication Engineering)



[No. of students registered (gender-wise) in Electronics & Communication Engineering]



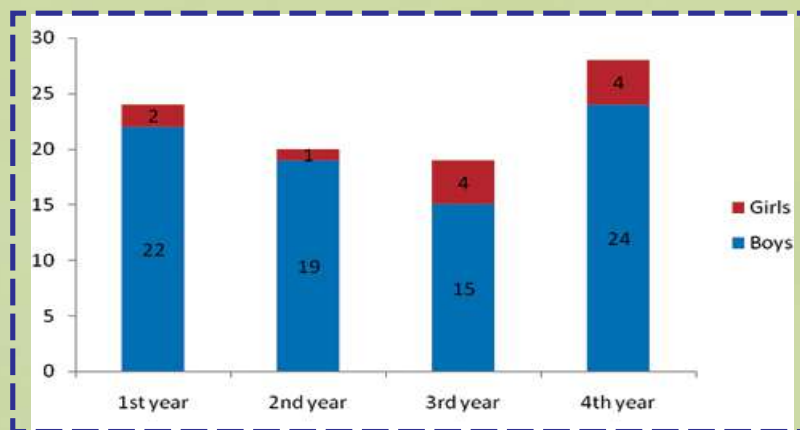
[No. of students registered (category-wise) in Electronics & Communication Engineering]

Table 3.3

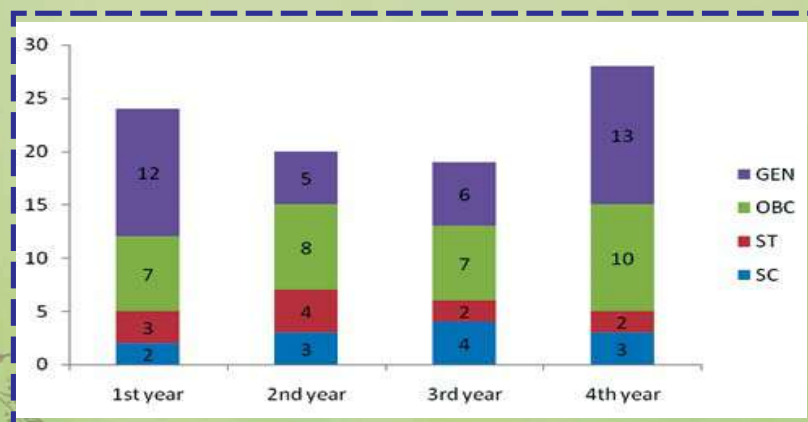
(B.Tech -Electrical Engineering)

Year	Details of students enrolled													
	Total no. of students admitted		SC		ST		OBC		GEN		MINORITY		PH	
	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls
1 <sup>st</sup> year	24	2	2	0	3	0	7	2	12	0	1	0	1	0
2 <sup>nd</sup> year	20	1	3	0	4	1	8	0	5	0	0	0	1	0
3 <sup>rd</sup> year	19	4	4	1	2	1	7	1	6	1	0	0	0	0
4 <sup>th</sup> year	28	4	3	0	2	0	10	3	13	1	0	0	0	0
<b>Total</b>	<b>91</b>	<b>11</b>	<b>12</b>	<b>1</b>	<b>11</b>	<b>2</b>	<b>32</b>	<b>6</b>	<b>36</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>

(\* PH students are included in GEN/SC/ST/OBC category)



[No. of students registered (gender-wise) in Electrical & Electronics Eng.]



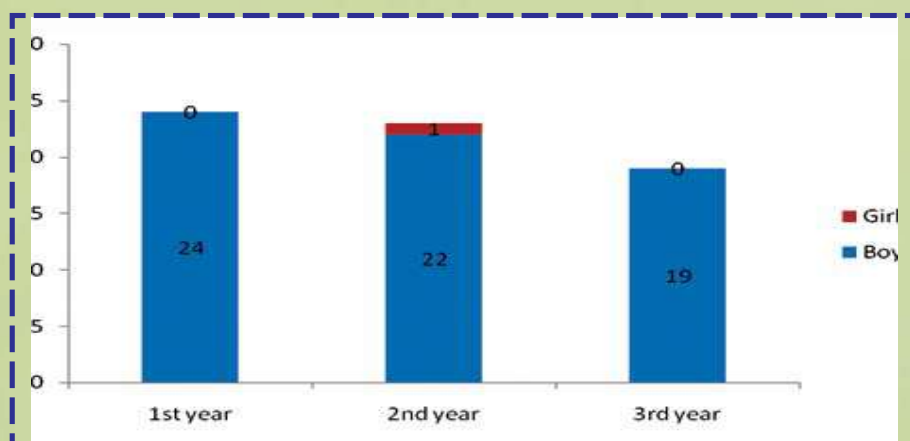
[No. of students registered (category-wise) in Electrical & Electronics Eng.]

Table 3.4

(B. Tech –Mechanical Engineering)

Year	Details of students enrolled													
	Total no. of students admitted		SC		ST		OBC		GEN		MINORITY		PH	
	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls
1 <sup>st</sup> year	24	0	5	0	4	0	9	0	6	0	2	0	1	0
2 <sup>nd</sup> year	23	1	4	0	2	0	10	1	7	0	0	0	0	0
3 <sup>rd</sup> year	19	0	3	0	1	0	9	0	6	0	2	0	0	0
<b>Total</b>	<b>66</b>	<b>1</b>	<b>12</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>28</b>	<b>1</b>	<b>19</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>1</b>	<b>0</b>

(\* Minority & PH students are included in GEN/SC/ST/OBC category)



[No. of students registered (gender-wise) in Mechanical Engineering]



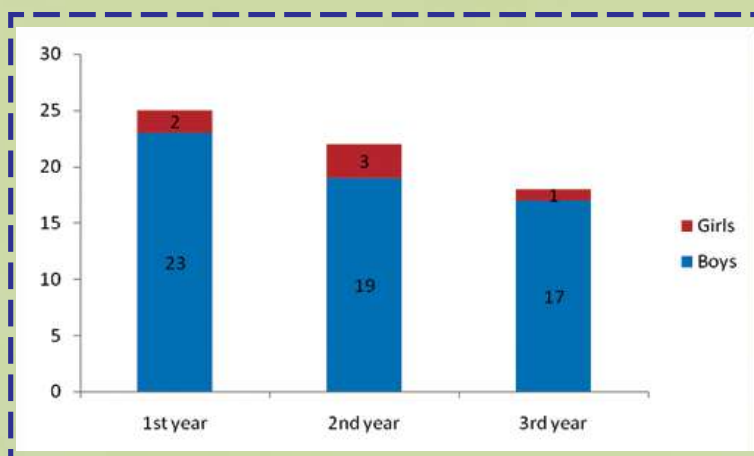
[No. of students registered (category-wise) in Mechanical Engineering]

Table 3.5

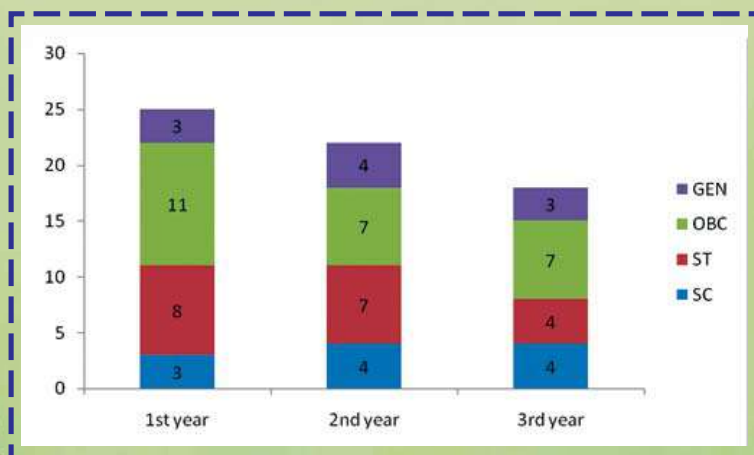
(B. Tech –Civil Engineering)

Year	Details of students enrolled													
	Total no. of students admitted		SC		ST		OBC		GEN		MINORITY		PH	
	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls
1 <sup>st</sup> year	25	2	3	0	8	2	11	0	3	0	0	0	3	0
2 <sup>nd</sup> year	22	3	4	0	7	2	7	0	4	1	0	0	1	0
3 <sup>rd</sup> year	18	1	4	0	4	1	7	0	3	0	0	0	0	0
<b>Total</b>	<b>65</b>	<b>6</b>	<b>11</b>	<b>0</b>	<b>19</b>	<b>5</b>	<b>25</b>	<b>0</b>	<b>10</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>

(\* Minority & PH students are included in GEN/SC/ST/OBC category)



[No. of students registered (gender-wise) in Civil Engineering]



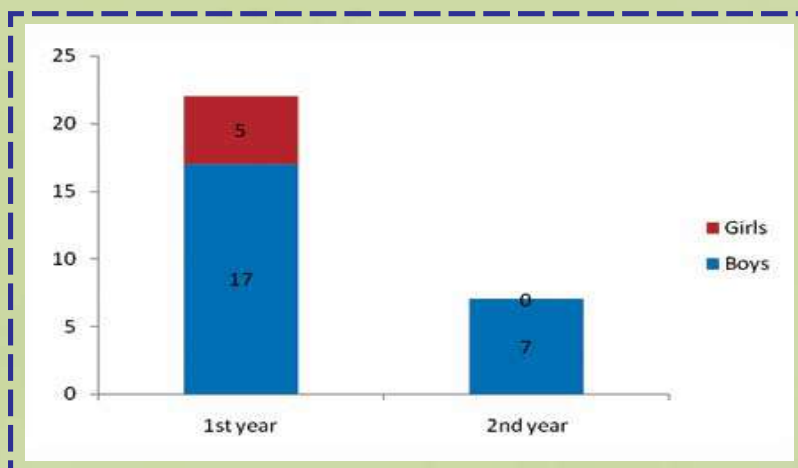
[No. of students registered (category-wise) in Civil Engineering]

Table 3.6

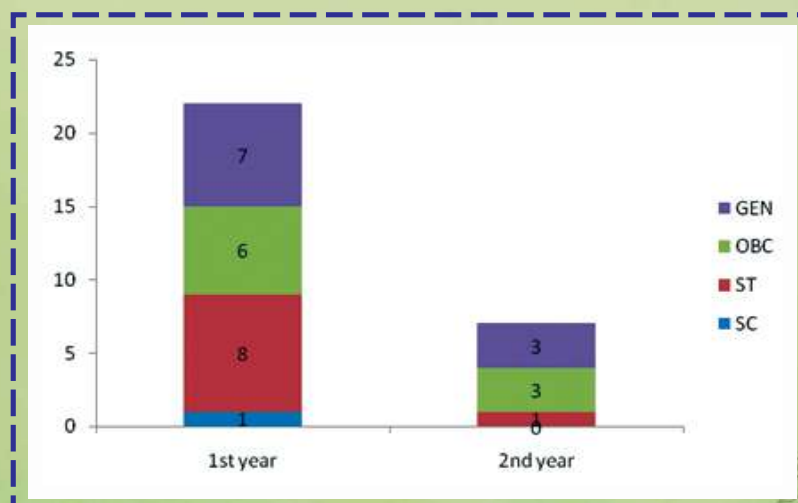
(B. Tech –Bio-technology)

Year	Details of students enrolled													
	Total no. of students admitted		SC		ST		OBC		GEN		MINORITY		PH	
	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls
1 <sup>st</sup> year	22	5	1	0	8	2	6	1	7	2	2	0	0	0
2 <sup>nd</sup> year	7	0	0	0	1	0	3	0	3	0	2	0	0	0
<b>Total</b>	<b>29</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>9</b>	<b>2</b>	<b>9</b>	<b>1</b>	<b>10</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>

(\* Minority & PH students are included in GEN/SC/ST/OBC category)



[No. of students registered (gender-wise) in Bio-technology]



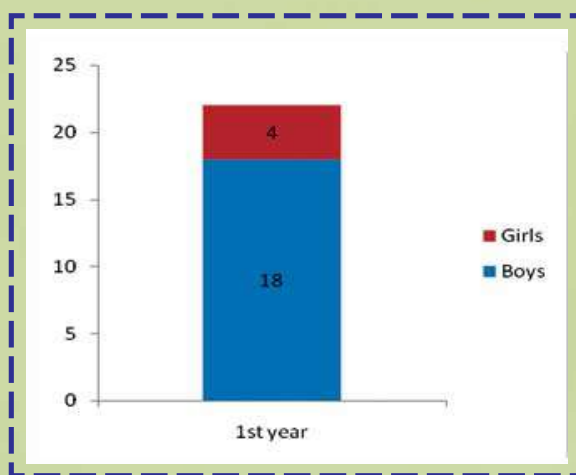
[No. of students registered (category-wise) in Bio-technology]

Table 3.7

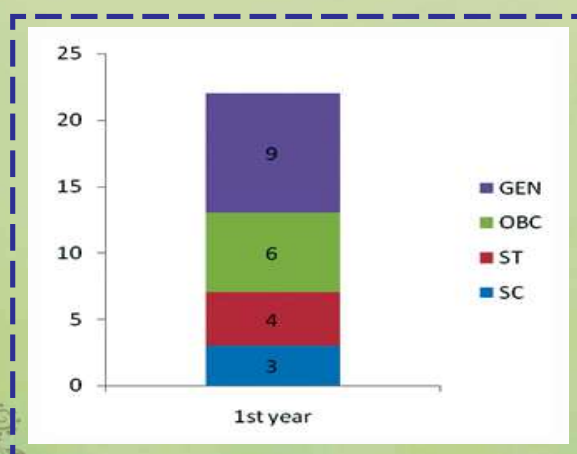
## (B. Tech -Chemical Engineering)

Year	Details of students enrolled													
	Total no. of students admitted		SC		ST		OBC		GEN		MINORITY		PH	
	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls
1 <sup>st</sup> year	22	4	3	0	4	0	6	3	9	1	1	0	1	0
<b>Total</b>	22	4	3	0	4	0	6	3	9	1	1	0	1	0

(\* Minority & PH students are included in GEN/SC/ST/OBC category)



[No. of students registered (gender-wise) in Chemical Engineering]



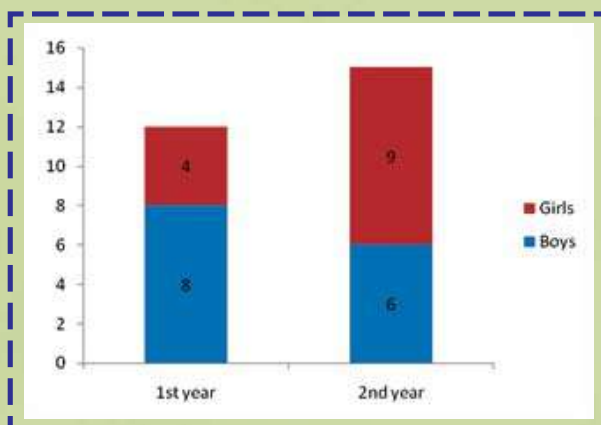
[No. of students registered (category-wise) in Chemical Engineering]

Table 3.8

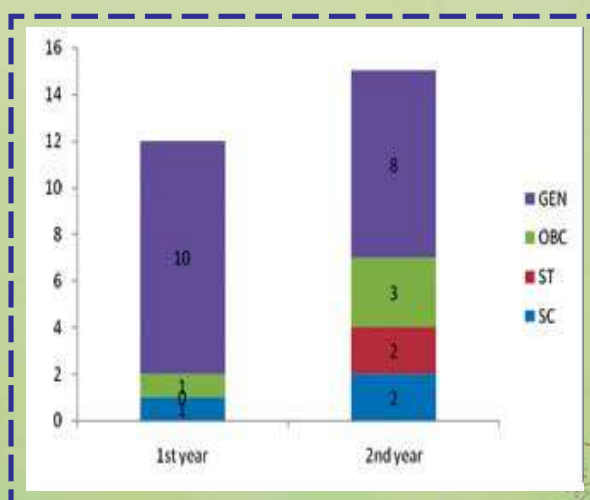
(M. Tech-Mobile Communication & Computing)

Year	Details of students enrolled													
	Total no. of students admitted		SC		ST		OBC		GEN		MINORITY		PH	
	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls
1 <sup>st</sup> year	12	4	1	1	0	0	1	1	10	2	0	0	0	0
2 <sup>nd</sup> year	15	9	2	1	2	2	3	1	8	5	1	0	1	0
<b>Total</b>	<b>27</b>	<b>13</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>4</b>	<b>2</b>	<b>18</b>	<b>7</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>

(\* Minority & PH students are included in GEN/SC/ST/OBC category)



[No. of students registered (gender-wise) in M. Tech-Mobile Communication & Computing]



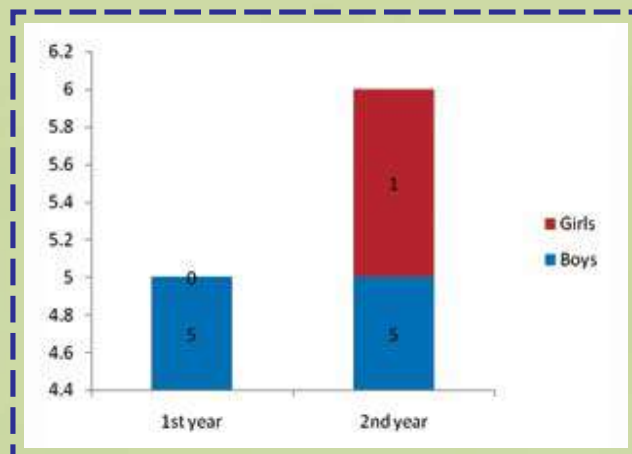
[No. of students registered (category-wise) in M. Tech-Mobile Communication & Computing]

Table 3.9

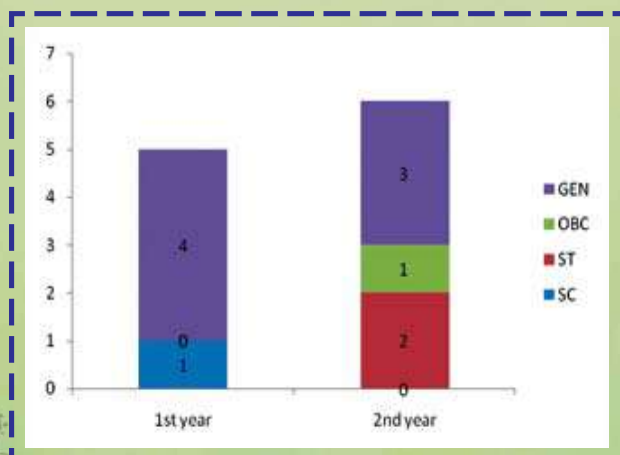
(M. Tech-Appropriate Technology & Entrepreneurship Practices)

Year	Details of students enrolled													
	Total no. of students admitted		SC		ST		OBC		GEN		MINORITY		PH	
	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls
1 <sup>st</sup> year	5	0	1	0	0	0	0	0	4	0	0	0	0	0
2 <sup>nd</sup> year	6	1	0	0	2	1	1	0	3	0	0	0	0	0
<b>Total</b>	<b>11</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

(\* Minority & PH students are included in GEN/SC/ST/OBC category)



[No. of students registered (gender-wise) in M. Tech-Appropriate Technology & Entrepreneurship Practices]



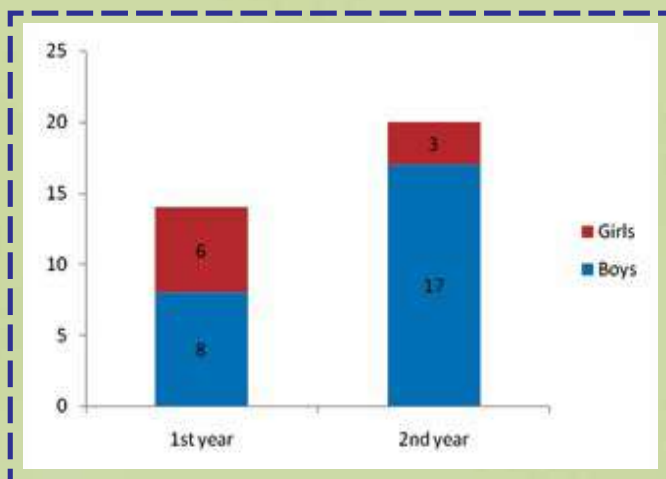
[No. of students registered (category-wise) in M. Tech-Appropriate Technology & Entrepreneurship Practices]

Table 3.10

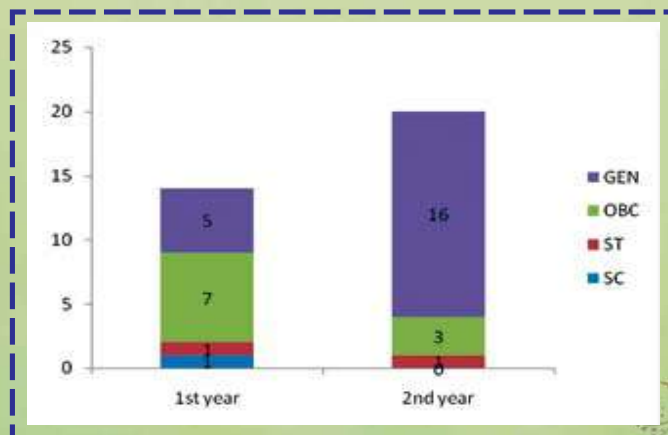
(M. Tech-Electronics Design & Manufacturing)

Year	Details of students enrolled													
	Total no. of students admitted		SC		ST		OBC		GEN		MINORITY		PH	
	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls
1 <sup>st</sup> year	14	6	1	0	1	1	7	4	5	1	2	1	0	0
2 <sup>nd</sup> year	20	3	0	0	1	0	3	0	16	3	0	0	0	0
<b>Total</b>	<b>34</b>	<b>9</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>10</b>	<b>4</b>	<b>21</b>	<b>4</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>

(\* Minority & PH students are included in GEN/SC/ST/OBC category)



[No. of students registered (gender-wise) in M. Tech-Electronics Design & Manufacturing]



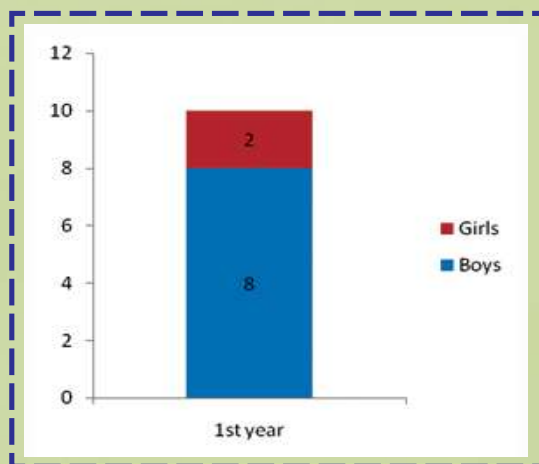
[No. of students registered (category-wise) in M. Tech-Electronics Device & Manufacturing]

Table 3.11

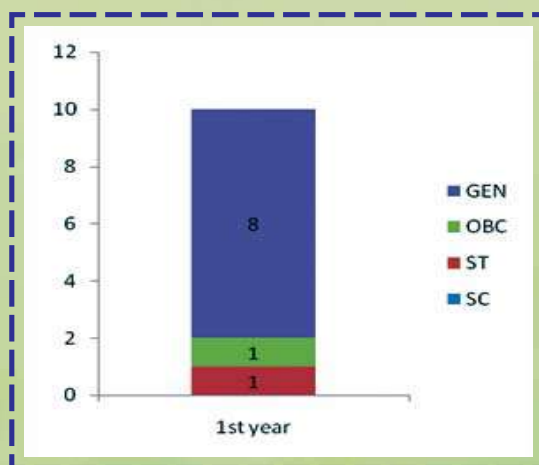
(M. Tech-Computer Science & Engineering)

Year	Details of students enrolled													
	Total no. of students admitted		SC		ST		OBC		GEN		MINORITY		PH	
	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls
1 <sup>st</sup> year	10	2	0	0	1	1	1	0	8	1	0	0	0	0
<b>Total</b>	10	2	0	0	1	1	1	0	8	1	0	0	0	0

(\*Minority & PH students are included in GEN/SC/ST/OBC category)



[No. of students registered (gender-wise) in M. Tech-Computer Science & Engineering]



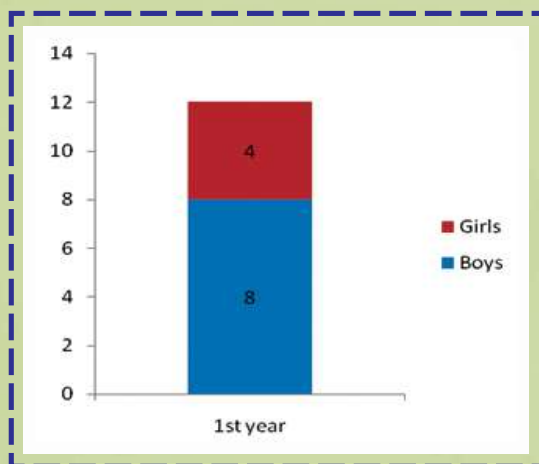
[No. of students registered (category-wise) in M. Tech-Computer Science & Engineering]

Table 3.12

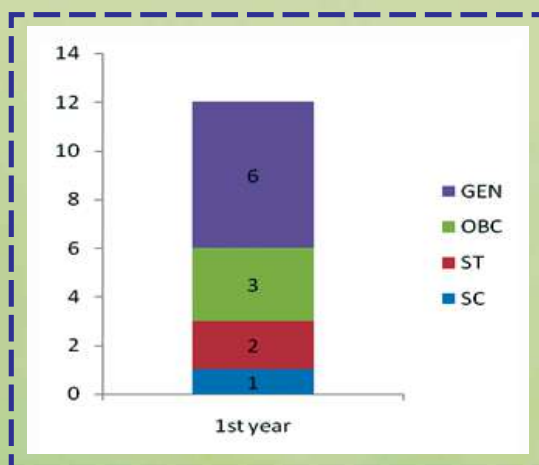
(M. Tech-Renewable Energy & Energy Management)

Year	Details of students enrolled													
	Total no. of students admitted		SC		ST		OBC		GEN		MINORITY		PH	
	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls
1 <sup>st</sup> year	12	4	1	0	2	2	3	1	6	1	3	0	0	0
<b>Total</b>	12	4	1	0	2	2	3	1	6	1	3	0	0	0

(\*Minority & PH students are included in GEN/SC/ST/OBC category)



[No. of students registered (gender-wise) in M. Tech-Renewable Energy & Energy Management]

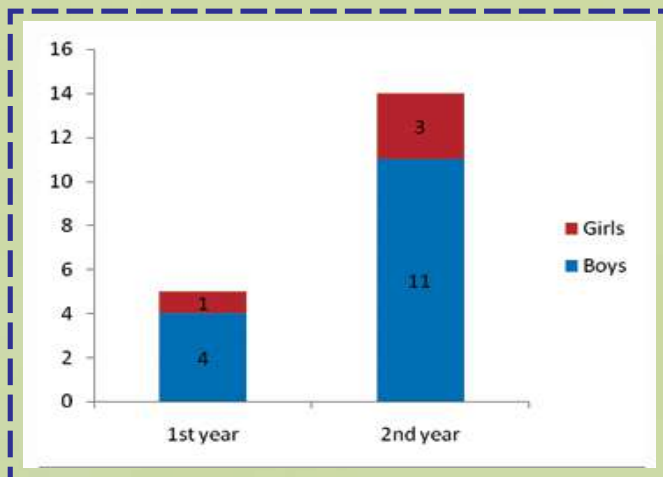


[No. of students registered (category-wise) in M. Tech-Renewable Energy & Energy Management]

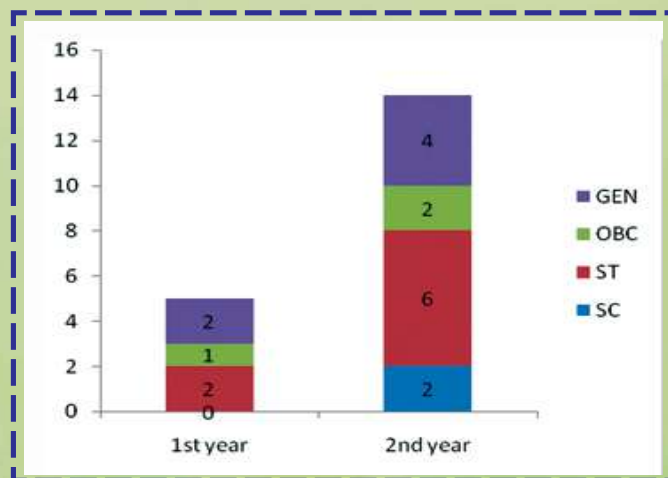
**Table 3.13**  
**[MBA (Online)]**

Year	Details of students enrolled													
	Total no. of students admitted		SC		ST		OBC		GEN		MINORITY		PH	
	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls
<b>1<sup>st</sup> year</b>	5	1	0	0	2	1	1	0	2	0	0	0	0	0
<b>2<sup>nd</sup> year</b>	14	3	2	1	6	0	2	0	4	2	0	0	0	0
<b>Total</b>	19	4	2	1	8	1	3	0	6	2	0	0	0	0

(\* Minority & PH students are included in GEN/SC/ST/OBC category)



[No. of students registered (gender-wise) in MBA (Online)]

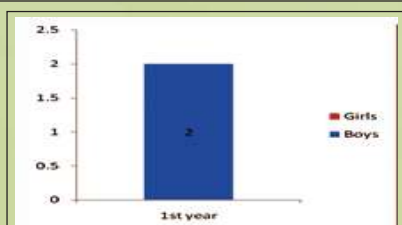


[No. of students registered (category-wise) in MBA (Online)]

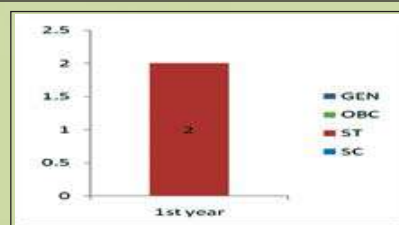
**Table 3.14**  
**(MS-Mathematical Physics)**

Year	Details of students enrolled													
	Total no. of students admitted		SC		ST		OBC		GEN		MINORITY		PH	
	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls
<b>1<sup>st</sup> year</b>	2	0	0	0	2	0	0	0	0	0	0	0	0	0
<b>Total</b>	2	0	0	0	2	0	0	0	0	0	0	0	0	0

(\*Minority & PH students are included in GEN/SC/ST/OBC category)



No. of students registered (gender-wise) in MS - Mathematical Physics



No. of students registered (gender-wise) in MS - Mathematical Physics

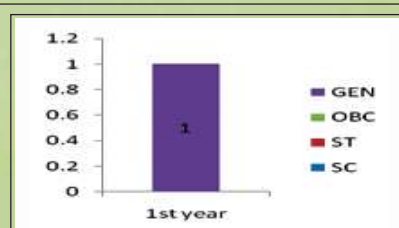
**Table 3.15**  
**(MS-Mathematics & Computing)**

Year	Details of students enrolled													
	Total no. of students admitted		SC		ST		OBC		GEN		MINORITY		PH	
	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls
<b>1<sup>st</sup> year</b>	1	0	0	0	0	0	0	0	1	0	0	0	0	0
<b>Total</b>	1	0	0	0	0	0	0	0	1	0	0	0	0	0

(\*Minority & PH students are included in GEN/SC/ST/OBC category)



No. of students registered (gender-wise) in MS - Mathematics & Computing



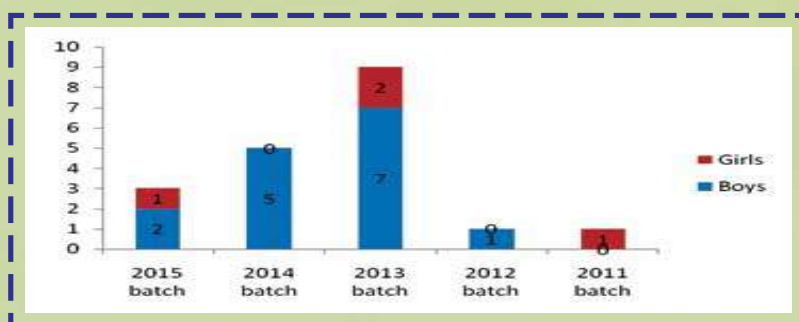
No. of students registered (gender-wise) in MS - Mathematics & Computing

Table 3.16

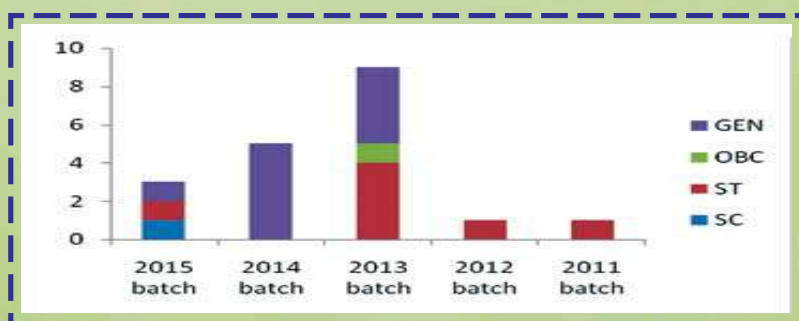
Faculty Members pursuing Higher Studies leading to Ph.D.

Year	Details of students enrolled											
	Total no. of students admitted		SC		ST		OBC		GEN		PH	
	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls
2010-2011	1	1	0	0	1	1	0	0	0	0	0	0
2011-2012	1	1	0	0	1	1	0	0	0	0	0	0
2012-2013	3	0	0	0	1	0	0	0	2	0	0	0
2013-2014	9	2	0	0	4	2	1	0	4	0	0	0
2014-2015	5	0	0	0	0	0	0	0	5	0	0	0
2015-16	3	1	1	0	1	1	0	0	1	0	0	0
<b>Total</b>	<b>21</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>8</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>

(\*PH students are included in GEN/SC/ST/OBC category)



[No. of faculty members registered (gender-wise) in Research Programme leading to Ph.D.]



[No. of faculty members registered (category-wise) in Research Programme leading to Ph.D.]

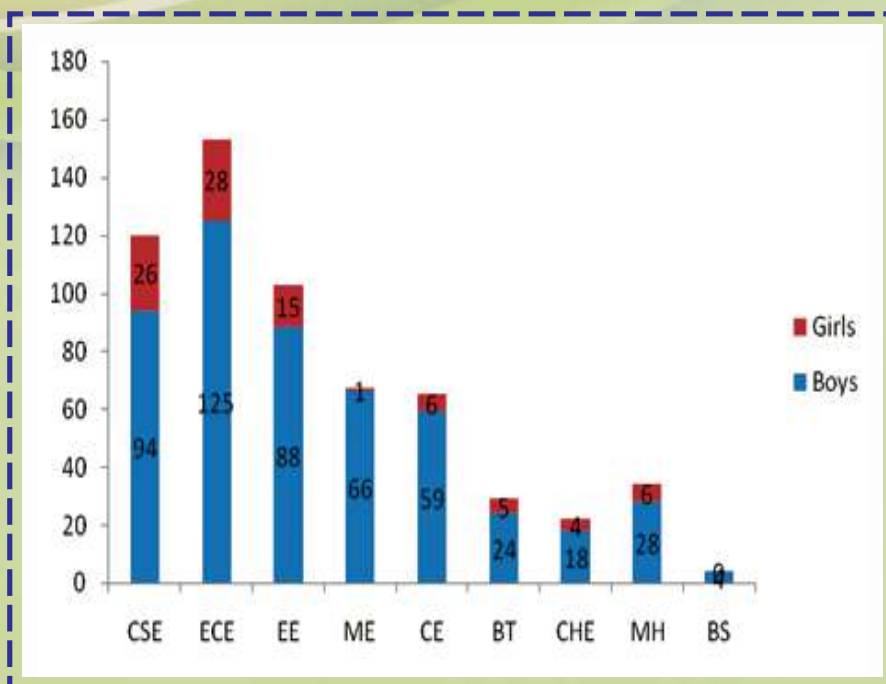
**List of Faculty Members pursuing Higher Studies leading to Ph. D.**

SI No.	Name	Designation	Category	Dept.	Date of Joining the		Pursuing PhD at
					Institute	Ph.D.	
1	Mrs Nabam Rich	Asstt. Prof.	ST	CE	02/01/2015	July 2010	NERIST
2	Ms. Jumrik Taipodia	Asstt. Prof.	ST	CE	09/12/2013	July 2011	IIT, Guwahati
3	Shri Rajen Pudur	Asstt. Prof.	ST	EE	01/02/2012	July 2012	NERIST
4	Shri Koj Sambyo	Asstt. Prof.	ST	CSE	07/08/2012	July 2013	NIT-Arunachal Pradesh
5	Miss Yaka Bulu	Asstt. Prof.	ST	ECE	07/08/2012	July 2013	NIT-Arunachal Pradesh
6	Shri Sahadev Roy	Asstt. Prof.	GEN	ECE	13/08/2012	July 2013	NIT-Arunachal Pradesh
7	Shri Anish Kumar Saha	Asstt. Prof.	GEN	CSE	03/10/2012	July 2013	NIT-Arunachal Pradesh
8	Shri Subhasish Banerjee	Asstt. Prof.	GEN	CSE	27/02/2013	Jan. 2014	NIT-Arunachal Pradesh
9	Ms. Yang Saring	Asstt. Prof.	ST	ECE	11/04/2013	Jan. 2014	NIT-Arunachal Pradesh
10	Shri Ralli Sangno	Asstt. Prof.	ST	EE	06/09/2013	Jan. 2014	NERIST
11	Shri Manash Pratim Dutta	Asstt. Prof.	OBC	CSE	23/09/2013	Jan. 2014	NIT-Arunachal Pradesh
12	Shri Brajagopal Datta	Asstt. Prof.	GEN	EE	10/12/2013	Jan. 2014	NERIST
13	Shri Santanu Maity	Asstt. Prof.	GEN	ECE	27/02/2013	July 2014	NIT-Arunachal Pradesh
14	Shri Alak Majumdar	Asstt. Prof.	GEN	ECE	06/09/2013	July 2014	NIT-Arunachal Pradesh
15	Shri Abir Jyoti Mandal	Asstt. Prof.	GEN	ECE	13/09/13	July 2014	NIT-Arunachal Pradesh
16	Shri Sandip Kumar Mandal	Asstt. Prof.	GEN	ME	19/09/2013	July 2014	NIT-Arunachal Pradesh
17	Shri Santanu Chatterjee	Asstt. Prof.	GEN	EE	14/09/2013	July 2014	NERIST
18	Shri Shubhajit Das	Asstt. Prof.	SC	ME	28/08/2014	July 2015	NERIST
19	Ms. Narang Rija	Asstt. Prof.	ST	MH	28/03/2012	July 2015	NIT-Arunachal Pradesh
20	Lt Achyut Sarkar	Asstt. Prof.	GEN	CSE	02/09/2014	July 2015	NIT-Arunachal Pradesh

Table 3.17

Total number of students on roll (gender-wise) from 2012 to 2015

Course		CSE		ECE		EE		ME		CE		BT		CHE		MH		BS		Total
		B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G	
B.TECH	1 <sup>st</sup>	21	2	24	4	22	2	24	0	23	2	17	5	18	4	-	-	-	-	168
	2 <sup>nd</sup>	17	5	21	3	19	1	22	1	19	3	7	0	-	-	-	-	-	-	120
	3 <sup>rd</sup>	15	3	14	2	15	4	19	0	17	1	-	-	-	-	-	-	-	-	90
	4 <sup>th</sup>	18	2	24	4	24	4	-	-	-	-	-	-	-	-	-	-	-	-	76
M.TECH	MCC	1 <sup>st</sup>	-	-	8	4	-	-	-	-	-	-	-	-	-	-	-	-	-	12
		2 <sup>nd</sup>	6	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15
	EDM	1 <sup>st</sup>	-	-	8	6	-	-	-	-	-	-	-	-	-	-	-	-	-	14
		2 <sup>nd</sup>	-	-	17	3	-	-	-	-	-	-	-	-	-	-	-	-	-	20
	CSE	1 <sup>st</sup>	8	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
		2 <sup>nd</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	REEM	1 <sup>st</sup>	-	-	-	-	8	4	-	-	-	-	-	-	-	-	-	-	-	12
		2 <sup>nd</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	ATEP	1 <sup>st</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	5	0	-	-	5
		2 <sup>nd</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	5	1	-	-	6
MBA	1 <sup>st</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	4	1	-	-	5	
	2 <sup>nd</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	11	3	-	-	14	
MS	MAP	1 <sup>st</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0	2
		2 <sup>nd</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	MAC	1 <sup>st</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	1
		2 <sup>nd</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PhD		9	3	9	2	-	-	1	0	-	-	-	-	-	3	1	1	0	29	
Grand Total		94	26	125	28	88	15	66	1	59	6	24	5	18	4	28	6	4	0	597



[Total No. of students registered (gender-wise) from 2012 to 2015]

Statistical Representation (AIJEE-Rank wise) of No. of Students admitted in B. Tech programmes in last two years

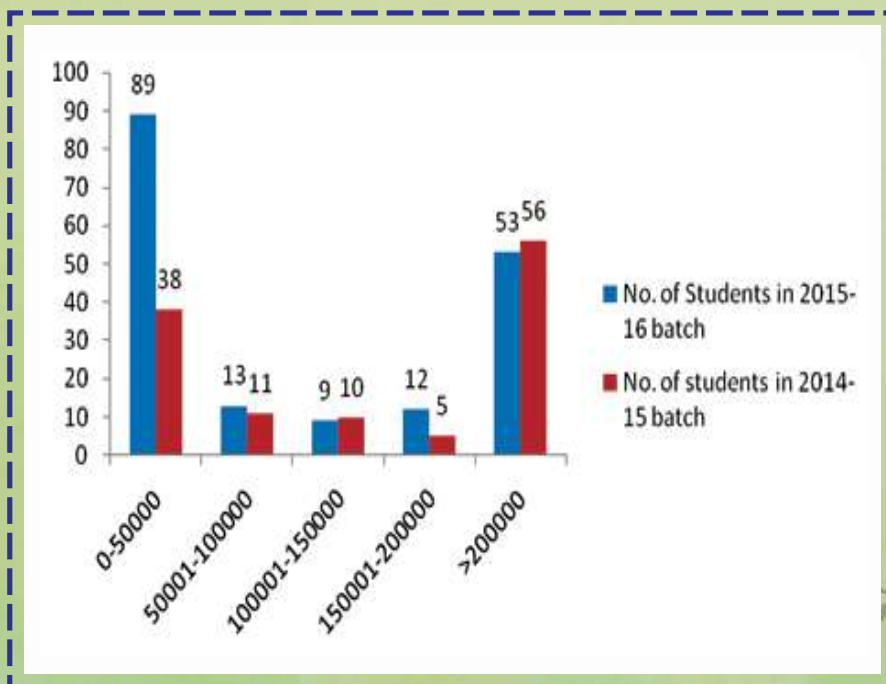
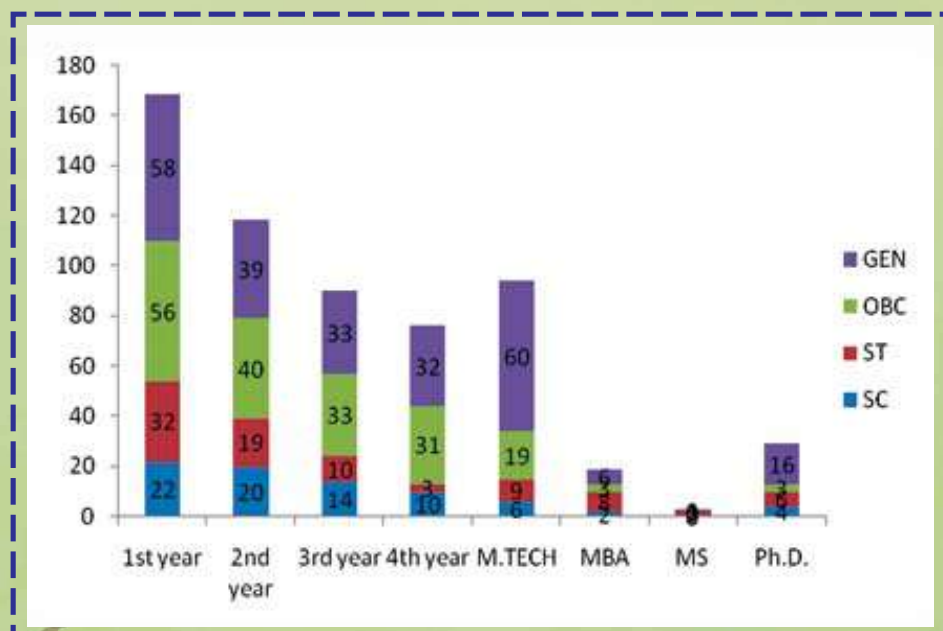


Table 3.18

Total number of students on roll (category-wise) from 2011 to 2014

Year	Details of students enrolled													
	Total no. of students admitted		SC		ST		OBC		GEN		MINORITY		PH	
	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls	Total	Girls
1 <sup>st</sup> year	168	19	22	0	32	5	56	7	58	7	7	0	9	0
2 <sup>nd</sup> year	118	13	20	3	19	4	40	2	39	4	3	0	3	0
3 <sup>rd</sup> year	90	10	14	1	10	2	33	2	33	5	2	0	0	0
4 <sup>th</sup> year	76	10	10	1	3	0	31	5	32	4	1	0	1	0
M. Tech	94	29	6	2	9	7	19	7	60	13	6	1	1	0
MBA	19	4	2	1	8	1	3	0	6	2	0	0	0	0
MS	3	0	0	0	2	0	0	0	1	0	0	0	0	0
Ph.D.	29	7	04	00	06	04	03	01	16	02	0	0	0	0
<b>Total</b>	<b>597</b>	<b>92</b>	<b>78</b>	<b>08</b>	<b>89</b>	<b>23</b>	<b>185</b>	<b>24</b>	<b>245</b>	<b>37</b>	<b>19</b>	<b>01</b>	<b>14</b>	<b>0</b>

(\* Minority & PH students are included in GEN/SC/ST/OBC category)



[Total number of students on roll (category-wise) from 2012 to 2015]

\*\*\*\*

## 4. DEVELOPMENTAL ACTIVITIES

### 4.0. Introduction

The space available in the temporary campus of the Institute is quite limited and with the passage of time, more space is required to accommodate the students, faculty members and staff members as their number are increasing year by year. Need for more space has also arisen as the Institution started new UG and PG courses from 2015-16.

### 4.1. New construction

In order to meet, further requirements of space for laboratories, class rooms, library and offices, it became absolutely necessary to construct additional rooms in the temporary campus and, therefore new class rooms and laboratories were constructed during the last year i.e. 2014-15. During the period under report, the following construction works have been undertaken in the Yupia campus.

1. Construction of Class room for Bio-Technology at NIT, Yupia.
2. Construction of Temporary civil lab at NIT, Yupia.
3. Construction of Computer Laboratory room for CSE Deptt. at NIT, Yupia ( Room no. 1 & 2).
4. Construction of A.C. Sheet ceiling & walling of geotechnical engg. laboratory Deptt. of Civil Engg. at NIT, Yupia.
5. Construction of Drawing class room for Civil & Mechanical at NIT, Yupia.
6. Extension of Bio-Technology lab room for NIT, Yupia.
7. Construction of computer lab for Mechanical Engineering at NIT, Yupia.
8. Providing aluminium frame & fixing glass doors & windows for seven room for NIT Academic Block, Yupia.
9. Renovation Painting of Academic block building at NIT, Yupia.
10. Construction of CC Drain at Rose Hall of Residence for Girls Hostel at Nirjuli under NIT, Yupia.
11. Construction of Septic tank soak pit & others maintenance for security barrack at NIT, Yupia.
12. Construction of Kitchen cum-Cookman quarters at UG Boys Hostel at Lekhi under NIT, Yupia.

13. Construction of MIBT Type Dining shed for Tiger Hostel for NIT, Yupia.
14. Maintenance of Director Banglow at NIT, Yupia.
15. Construction of steel grilling (Cattle trape) on drain at NIT, Yupia.
16. Providing carpet window curtain and finishing floor at EDP Room at NIT, Yupia.
17. Construction of CC Drain at UG Boys Hostel Lekhi village under NIT, Yupia.
18. Construction of MIBT Type Dinning shed for 100 students at tiger Hostel for NIT, Yupia.
19. Construction of Lavatory room for boys at NIT, Yupia.
20. Construction of CC Drain at UG Boys Hostel Lekhi village under NIT, Yupia.
21. Construction of drain, garbage, jungle clearance and maintenance.
22. Painting and scrubbing made at Tiger Hostel block at NIT, Yupia.
23. Jungle, Drain & garbage clearance & maintenance work of Tiger Hostel block at NIT, Yupia.

#### **Extra Construction Planned at Jote:**

The academic, administrative and other infrastructure constructions are going full swing. The following construction works have been undertaken at the permanent site Jote.

1. Up-gradation of Existing Approach Road.
2. Construction of Entrance Gate.
3. Construction of 5 bedded Medical Unit.
4. Construction of Retaining wall (120 m).
5. Construction of Storm Water Drain along the outer side of compounded wall of NIT, Jote.
6. Anti-Erosion Protection work at front and Back side of Boys hostel at NIT, Jote.
7. Construction of Central Workshop.
8. Construction of VIP & Faculty Guest House.
9. Construction of Compound wall around WTP.
10. Construction of Football ground.
11. Relocation of water supply line at Jumi Village.

12. Construction of water testing laboratory for water treatment plant at NIT, Jote.
13. Construction of 2 lakh litres capacity water tank at NIT, Jote.
14. Construction of type-IV Quarter (Sh: RCC Retaining wall).
15. Restoration of Flood Damaged Water supply system at NIT, Jote.

#### **4.2. Laboratory development**

The Institute has equipped the following Laboratories to conduct practice classes as per the academic schedule:

- Computer Centre or Computing Laboratory
- Electrical Machine Laboratory
- Control System Laboratory
- Electrical Measurement/Power System Laboratory
- Digital Electronics
- Organization and Architecture Laboratory
- Basic Electronics Laboratory
- Analog Communication Engineering Laboratory
- Basic Engineering Physics Laboratory
- English Communication Laboratory or Language Laboratory
- Software Engineering Laboratory
- Programming Laboratory
- Computer Networks Laboratory
- Simulation Laboratory
- Embedded System Laboratory
- Engineering Chemistry Laboratory
- Mechanical Workshop (Carpentry Shop, Fitting Shop, Machine Shop, Welding Shop)
- Strength of Material Laboratory.
- Fluid Mechanics Laboratory.
- Basic Mechanical Engineering Laboratory.
- Engineering Drawing Laboratory.
- Material testing Laboratory
- Surveying Laboratory

The Lists of New Laboratories that has been established in 2015-16.



Common Biotechnology Laboratory for Biochemistry, Genetics and Microbiology



Gel Doc instrument



-80o C Refrigerator



Refrigerated Centrifuge



Lyophilizer



pH meter and weighing balance



Thermal Cycler



Geotechnical Laboratory



Fluid Mechanics Laboratory



Structure Laboratory

The following laboratories/ workshops have since been installed and those are functioning in a proper manner:



**Computing Laboratory**



**Networking Laboratory**



**Basic Electronics Laboratory**



**Software Engineering Laboratory**



**Programming Laboratory**



**Simulation Laboratory**



**Engineering Physics-I & II Laboratory**





Engineering Chemistry Laboratory



Language Laboratory



Computer Lab. for M. Tech/Ph. D. students



Electrical Machine Laboratory



Mechanical Workshop



Drawing Laboratory



Fluid Mechanics Laboratory



Strength Material Laboratory

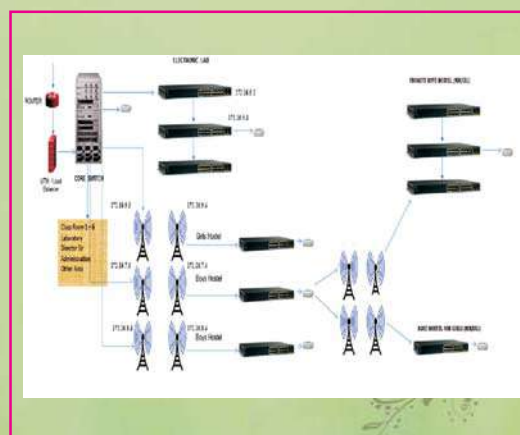
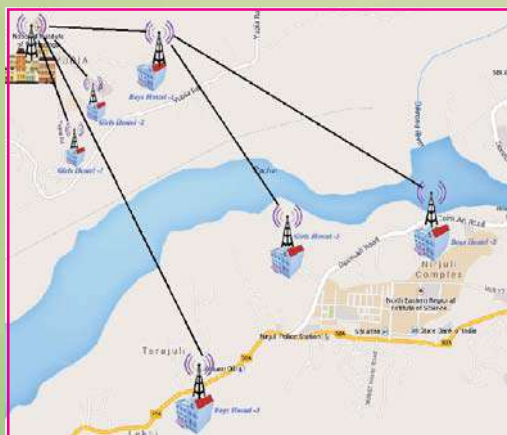


Electrical Measurement Laboratory

#### 4.2.1. : Internet & Wi-Fi Infrastructure existing

The existing Network infrastructure of the Institute connects different hostels with main academic building via wireless radio link. All the boys' hostels and girls' hostels are connected with Radio link (Alvarion: capacity up to 70Mbps). Node to node connectivity was done with Unshielded Twisted Pair Category 6 (UTP) cable through ISI mark casing capping. It Covers 200 points in four computer laboratories and few points in all other parts of the building. Active network devices installation and configuration using IBM Server - Type-3 Linux Server & 1 Windows Server, Operating System (3 Linux Enterprises -64 bit & 1 Windows 2003- 32 bit) with IBM storage, is operative. Wireless indoor & outdoor access points are installed in both floors of the academic building including two numbers of computer laboratories by Access Point D-link DWL-3200AP. At present the NKN connectivity is established by: BSNL 32Mbps through wireless mini link and PGCL 100Mbps through OFC.

NIT Arunachal Pradesh Campus wise Networking and Connectivity is as below:



Network Diagram of NIT, Arunachal Pradesh

Details of infrastructure are given below:

### Active Components

Firewall		
Sl. No.	Item Name	Quantity
1	UTM - Firewall with TPS - Cyberoam 1000ia	01

Server		
Sl. No.	Item Name	Quantity
1	IBM Server - Type-3 Linux Server & 1 Windows Server	01
2	Operating System (3 Linux Enterprises -64 bit & 1 Windows 2005- 32 bit)	01
3	IBM Storage	13 TB

Router & Switches		
Sl. No.	Item Name	Quantity
1	Core L3 Switch 3750G	01
2	L2 Switch - 2960G	13
3	Cisco Router 2911-K-9	01
4	L2 Managed Switch - 2960	03
5	IBM SAN SWITCH	02

Wireless		
Sl. No.	Item Name	Quantity
1	Point to Point Radio- Alvarion-B10	05
2	Access Point D-link DWL-3200AP	37

IBM Blade servers &amp; IBM Storage



Firewall, Router Layered (L3&amp;L2) Switches



### 4.3 Website of the Institute

The website of the Institute has been developed and is maintained by the Web Development Team as under:



#### **Rajat Subhra Goswami**

Assistant Prof. & Web Master NITAP  
(M) : 09436271052  
Email: rajat.nitap@gmail.com



#### **Subhasish Banerjee**

Assistant Prof. & Web Master NITAP  
(M) : 09434985900  
Email: subhasish.cse@nitap.in

#### 4.4. Other facilities

The facilities and services rendered by the Institute to the students, faculty and staff members make it stand among the top level institutes. The splendid amenities provided to the students make the stay in the Institute a wonderful experience. The presence of modern facilities furthers the overall development of all the aspects in the Institute and also assists students and faculty members to work in a co-operative way enhancing the overall academic growth.

The students are provided with a nice set of hostel room with all the basic facilities needed by them. A few of them constitute the 24x7 availability of water and electricity. The whole Institute and the hostels are supplied with a permanent Internet and LAN facility so as to increase the limits of every individual.

#### 4.5. Computer Course

The Computer Centre in the Institute provides the students a unique way to enhance themselves, be it on the Internet or different professional software. Computer Centre provides E-mail, Web, DNS, FTP, Internet access and other services to the campus community round the clock. Computer Centre also provides various advanced and special purpose software for all the campus users against the background of the present tech-savvy global scenario. Following are the features of the Computer Centre present in the Institute:



- i. Total no. of Computers: 151
- ii. Printing facilities are provided for the students.
- iii. High Speed Internet connectivity.
- iv. Technical software available in the computer lab:
  - MATLAB 7.0
  - DEV C++
  - 8085 SIMULATOR
  - Anitivirus Quick heal 2014

#### 4.6. Development of the permanent site of the Institute at Jote, Dist-Papum Pare

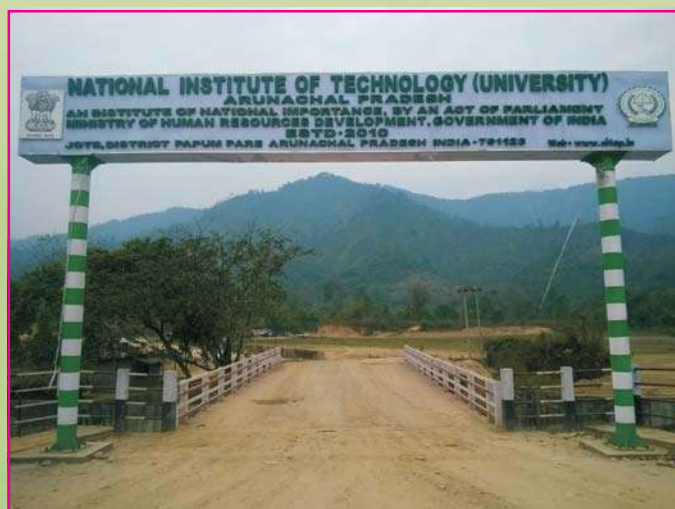
##### Work in Progress

The necessary work of site development at the permanent campus of the Institute (at Jote, District: Papumpare, Arunachal Pradesh) is almost complete. The boundary pillars are constructed and the contracts for construction works have been awarded. The construction has started in a full-fledged manner and the progress of the same is satisfactory. The classes of Mechanical Engineering Department have already started at permanent campus at Jote. Some more Department (Civil Engineering, Chemical Engineering and Bio-technology Dept.) will also start their classes at Jote site from academic session 2016-17.

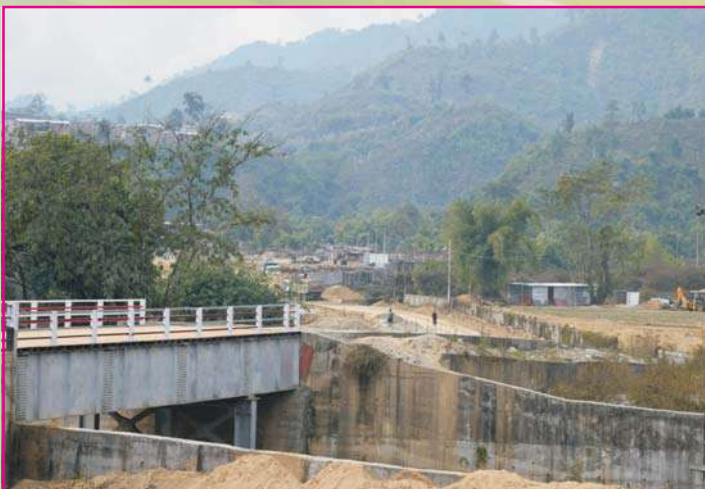


Initial stage at the time of Jungle Clearance

The more pictures of our permanent site is given below.



Entrance Gate



**Steel Bridge**



**Approach Road to Water Treatment Plant**



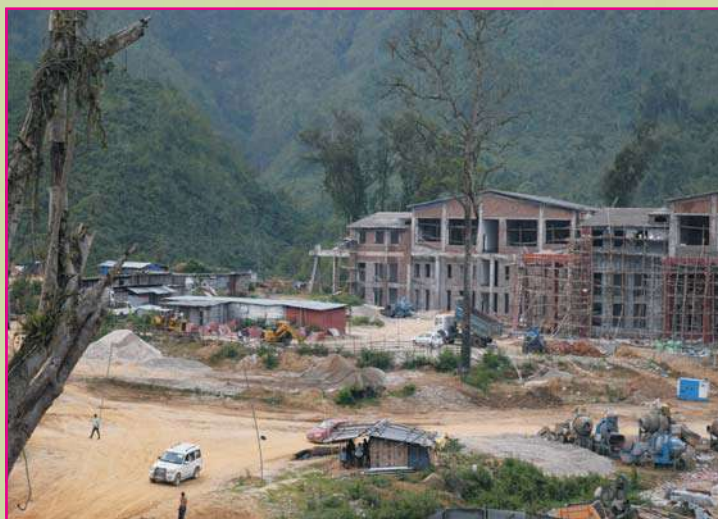
**Feeder Road, main road and Internal Road**



**Administrative Block**



**Bio-technology Block**



**Chemical Engineering Block**



**Civil Engineering Block**



Mechanical Engineering Block



Boys Hostel



Girls Hostel



Director Bungalow



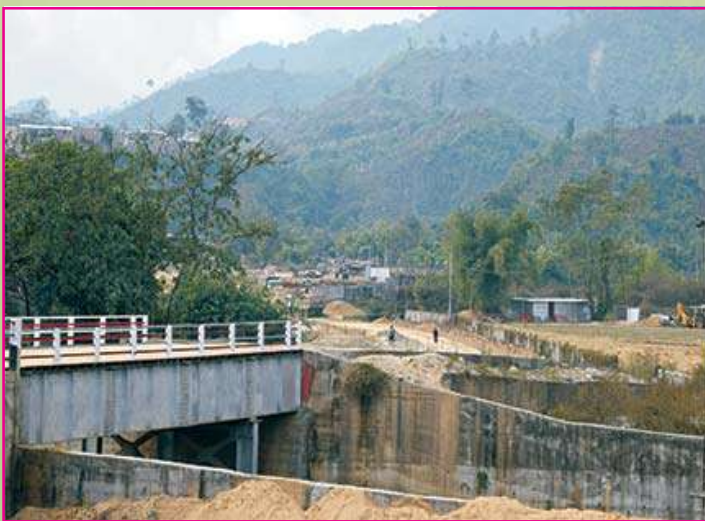
Type-IV Quarter



Type-II Quarter



Water Treatment Plant



Steel Bridge

### Drinking Water Supply

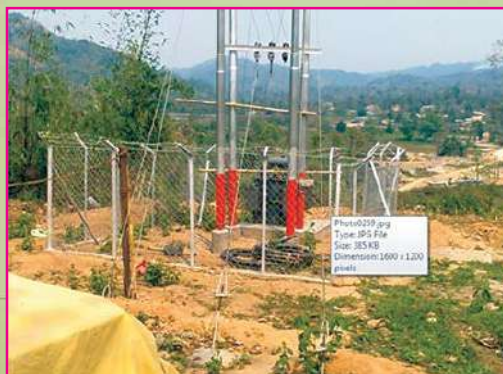
The survey of drinking water was done in conjunction with the PHE & WS Department, Government of Arunachal Pradesh. The level of head for pipeline connection meets the requirements and the water available/found in the source is fresh and clean in nature. The surrounding area of the water source is free from pollution and it lies on the virgin lap of the 'Mother Nature.' The construction of WTP and work for connectivity of water supply being carried out by the PHE & WS Department, Government of Arunachal Pradesh are about to be completed.



Water Supply System

### Power Supply System

Arrangement for required power supply to the Institute is being carried out by the Power Department of the State Government and the outdoor sub-station has since been installed.

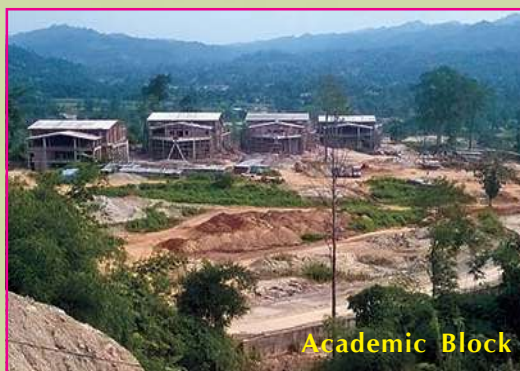


Power Supply System

Other Photographs of Jote Campus



Boys Hostel



Academic Block



Mechanical Block



Quarter-IV





Director Bungalow



Quarter-IV



Academic Block



**Mechanical Engineering Classes Being held at permanent campus site, Jote**





## 5. ACADEMIC DEPARTMENTS

### 5.0 Introduction

National Institute of Technology-Arunachal Pradesh started with 4-years B. Tech degree programmes in Computer Science & Engineering, Electronics & Communication Engineering and Electrical & Electronics Engineering. The Institute added two more 4-years B. Tech degree programmes in 'Civil Engineering' and 'Mechanical Engineering' and two M. Tech Programmes in 'Mobile Communication & Computing' and 'Appropriate Technology & Entrepreneurship Practices' from the year 2013-14. Another B. Tech programme in Bio-Technology and M. Tech programme in Electronics Design & Manufacturing has been added in the academic session 2014-15. Two more programmes [Online MBA and MS Programme in Mathematics and Computing (Holiday Course)] have started from July 2014. Besides B. Tech and M. Tech Programmes, the institute has also started Research programme leading to Ph.D. in Computer Science & Engineering, Electronics & Communication Engineering, Physics, Chemistry, Mathematics and Management & Humanities. Three more MS programmes in: Mathematical Physics; Mathematics & Computing; Mathematical Research in Engineering & Technology; two M. Tech Programmes: Computer Science & Engineering; Renewable Energy & Energy Management along with one B. Tech programme in Chemical Engineering have started from July 2015. One more MS programme in 'Electronic Science' is going to start from the academic session 2016-17.

### 5.1. Faculty Positions as on 31.03.2015

Professor		Associate Professor		Assistant Professor		Total		Grand Total
Male	Female	Male	Female	Male	Female	Male	Female	
0	0	2	0	28	7	30	7	37

### 5.2. Number of Faculty positions filled up in 2015-16

Professor		Associate Professor		Assistant Professor		Total		Grand Total
Male	Female	Male	Female	Male	Female	Male	Female	
0	0	1	0	14	1	15	1	16

**5.3. Faculty status on 31.03.2016**

Sl. No.	No. of faculty as on 31.3.2015	No. of faculty recruited during 2015-16	No. of faculty resigned during 2015-16	No. of faculty as on 31.3.2016
(a)	(b)	(c)	(d)	(e)
	37	16	2	51
	Assoc. Prof (2) + Asst. Prof (35)	Assoc. Prof (1) + Asst. Prof (15)	Assoc. Prof (0) + Asst. Prof (2)	Assoc. Prof (3) + Asst. Prof (48)

**5.4. Strength of the Faculty as on 31.03.2016 (category-wise)**

Professor		Associate Professor		Assistant Professor		Total		Grand Total
Male	Female	Male	Female	Male	Female	Male	Female	
0	0	3	0	40	8	43	8	51

**Category-wise faculty position**

	SC		ST		OBC		GEN		Minority		PH		Total
	M	F	M	F	M	F	M	F	M	F	M	F	
Professor	0	0	0	0		0	0	0	0	0	0	0	0
Associate Professor	0	0	0	0	0	0	3	0	0	0	0	0	3
Assistant Professor	3	0	4	6	5	1	28	1	0	0	0	0	48
<b>Total</b>	<b>3</b>	<b>0</b>	<b>4</b>	<b>6</b>	<b>5</b>	<b>1</b>	<b>31</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>51</b>

**5.5. Appointment of Faculty members during the year 2014-15**

Sl. No.	Name	Designation	Department	Date of Joining	Category
i.	Dr. Tushar Dhabal Das	Asstt. Prof.	PCES	20/04/2015	GEN
ii.	Dr. Pallabi Kalita Hui	Asstt. Prof.	BT	24/06/2015	OBC
iii.	Sri Anuran Bhattacharjee	Asstt. Prof.	CE	15/07/2015	GEN
iv.	Dr. Saikat Kumar Jana	Asstt. Prof.	BT	21/07/2015	GEN
v.	Sri Likha Arun	Asstt. Prof.	CE	03/09/2015	ST
vi.	Dr. Kunal Das	Asstt. Prof.	CSE	28/09/2015	GEN

Sl. No.	Name	Designation	Department	Date of Joining	Category
vii.	Dr. M. Berlin	Asstt. Prof.	CE	07/12/2015	GEN
viii.	Dr. Mainak Mallik	Assoc. Prof.	CE	22/12/2015	GEN
ix.	Dr. Abhik Banerjee	Asstt. Prof.	EE	22/12/2015	GEN
x.	Dr. Anup Paul	Asstt. Prof.	ME	30/12/2015	GEN
xi.	Dr. Shakti Prasad	Asstt. Prof.	MATH	05/01/2016	SC(PwD)
xii.	Sri Rajib Jana	Asstt. Prof.	EE	21/01/2016	GEN
xiii.	Dr. Subhadeep Mukhopadhyay	Asstt. Prof.	ECE	22/01/2016	GEN
xiv.	Dr. Moirangthem Momocha Singh	Asstt. Prof.	MH	08/02/2016	SC
xv.	Dr. Deepak Gupta	Asstt. Prof.	CSE	12/02/2016	OBC
xvi.	Dr. K. Vijaya Kumar	Asstt. Prof.	MH	27/02/2016	OBC

#### 5.6. Faculty retirement and resignation during the year 2015-16

Sl. No.	Name and Department	Department	Event
i	Dr. Siba Prasad Panigrahi	Associate Professor	Resigned
ii	Dr. Kunal Das	Assistant Professor	Resigned

#### 5.7. Visits of Faculty members during the year 2015-16 abroad

Sl. No.	Name	Designation	Department	Place and purpose of visit
i	Prof. C. T. Bhunia	Director	CSE	Russia
ii	Sri Manas Pratim Dutta	Assistant Professor	CSE	Russia

#### 5.8. Foreign visit (Year-wise and Department-wise)

##### Year-wise Details

Academic Session	No. of faculty members	Other reason	Total
2015	01	Academic Purpose	01
2014	3	Academic Purpose	03
2013	05	Academic Purpose	05
2012	02	Academic Purpose	02
Total	10		11

### Department-wise Details

Department	2012	2013	2014	2015	Total
Computer Science & Engineering	01	03	01	01	06
Electrical & Electronics Engineering	01	02	00	00	03
Mathematics	00	00	01	00	01
Electronics & Communication Engineering	00	00	01	00	01
<b>Total</b>	<b>02</b>	<b>05</b>	<b>03</b>	<b>00</b>	<b>11</b>

### 5.9. Percentage of time-sharing by the faculty in the Institute

Average Percentage		
Teaching	Research and consultancy	Administrative assignment
50%	35%	15%

### 5.10. Department of Computer Science & Engineering

Computer Science & Engineering is a multi-disciplinary branch of engineering which integrates several fields. The Department of Computer Science & Engineering was established right from the inception of the Institute in 2010. The Department offers a four-year degree programme in Computer Science & Engineering with an annual intake of 30 students. The Department has also started Ph. D. programme from July–December, 2013 session. The department has started a new 2 year PG course M.Tech in Computer Science & Engineering from July 2015 session. The Department of Computer Science & Engineering (CSE) embodies the Institute's tradition of excellence in engineering and technical education.

#### Faculty Members

Sl. No.	Name of the faculty	Date of joining	Designation	Area of Specialization
i	Swarnendu Kumar Chakraborty	01.11.2011	Assistant Professor	Error Control & Network Security
ii	Dr. Rajat S. Goswami	01.11.2011	Assistant Professor	Multimedia & Information Security
iii	Koj Sambyo	07.08.2012	Assistant Professor	Cloud Computing
iv	Anish Kumar Saha	03.10.2012	Assistant Professor	Green Computing, Software Defined Networking
v	Subhasish Banerjee	27.02.2013	Assistant Professor	Network Security
vi	Manash Pratim Dutta	23.09.2013	Assistant Professor	Computer Networking
vii	Lt. Achyuth Sarkar	02.09.2014	Assistant Professor	E-Governance and Cyber Security
viii	Dr. Deepak Gupta	12.02.2016	Assistant Professor	Support Vector Machine, Extreme Learning Machine

**Students' strength**

	Boys	Girls	Total
B. Tech 1 <sup>st</sup> year	21	2	23
B. Tech 2 <sup>nd</sup> year	17	5	22
B. Tech 3 <sup>rd</sup> year	15	3	18
B. Tech 4 <sup>th</sup> year	18	2	20
M.Tech in CSE (1 <sup>st</sup> Year)	8	2	10
M. Tech in MCC (2 <sup>nd</sup> year)	6	9	15
*Ph. D.	9	3	12
<b>Total</b>	<b>94</b>	<b>26</b>	<b>120</b>

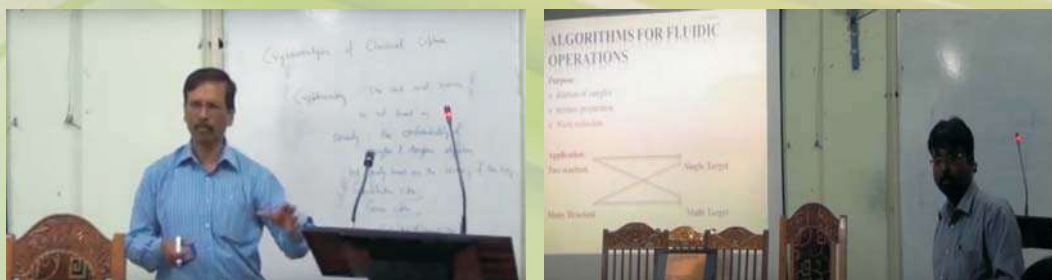
\*The no. of Ph.D students includes the internal faculty members who are pursuing their Ph.D (part-time) at NIT Arunachal Pradesh.

**Expert Faculty from reputed Institutions**

Sl. No.	Name of the Experts
i	Prof. B P Sinha, Dept. of Computer Science & Engg., ISI - Kolkata.
ii	Mr. Saikat Ghosh, Project Manager, Capgemini, Pune.
iii	Prof. Ajit Pal, Dept. of Computer Science & Engg., IIT- Kharagpur.
iv	Prof. M S Gaur, Dept. of Computer Science & Engg., MNIT-Jaipur.
v	Prof. Ashok Nath, Dept. of Computer Science & Engg., St. Xaviers College, Kolkata.
vi	Prof. Paramartha Dutta, Department of Computer & System Sciences, Visva Bharati University, Santiniketan.
vii	Prof. Atal Chowdhury, Department of Computer Science & Engg., Jadavpur University, Kolkata.
viii	Sh. Sufal Das, Department of Information Technology, North Eastern Hill University, Shillong.
ix	Prof. Sukumar Nandi, Department of Computer Science & Engg, IIT Guwahati.
X	Prof. P P Sahu, Department of Electronics and Communications, Tezpur University.

**Workshop/Seminars organized by Computer Science & Engineering Department in 2015-16 session**

- Departmental Research Summit, 2015.
- Departmental Internal Faculty Development programme, Place: NIT Transit House, Guwahati, Speaker: Prof. B P Sinha, Dept. of Computer Science & Engg., ISI – Kolkata, 2015.
- Workshop on “The Guide to the Software Engineering Body of Knowledge (SWEBOK Guide)”, Place: NIT Arunachal Pradesh, Date: 02-02-2016 to 06-02-2016.



Departmental Research Summit, 2015



Workshop On ASP.NET

### Seminars, Symposia and Workshops participated by the faculty members

- Prof. C T Bhunia, 8th International Conference on Security of Information and Networks (SIN-2015), 8-10th September, 2015, Sochi, Russia.
- Subhasish Banerjee, Open Source Software for Scientists and Engineers, NIT Durgapur, December, 2015.
- Faculty members of Computer Science & Engineering participated in internal faculty development programme, Place: NIT Transit House, Guwahati, Speaker: Prof. B P Sinha, Dept. of Computer Science & Engg., ISI – Kolkata.
- Dr. Swarnendu Kumar Chakraborty, "One day Workshop on Research", Date: 22.08.2015, organized by CSI Kolkata.
- Dr. Swarnendu Kumar Chakraborty, "Mentoring Workshop of AICTE-NEQIP ", Date: 29-01-2016, Place: NIT Agartala, Tripura.
- Manash Pratim Dutta, 8th International Conference on Security of Information and Networks (SIN-2015), 8-10th September, 2015, Sochi, Russia.
- Manash Pratim Dutta, ACM International Conference on Advanced Research in Computer Science Engineering & Technology (ICARCSET-2015), Eluru, India.

### Laboratory Development

The Department has equipped the following Laboratories to conduct practice classes as per academic schedule:

- Computer Centre or Computing Laboratory
- Software Engineering Laboratory
- Programming Laboratory
- Computer Networks Laboratory
- M. Tech Model Class Room

### List of Publications by Faculty Members in the last few years

#### International Journal:

- i. Sanjit Ningthoujam, **Swarnendu K Chakraborty, Chandan T Bhunia**, "New Investigations of Aggressive Packet Combining Scheme to Reduce Transmission Delay and Three States Markov Model Using Multiple Routes to Increase Throughput", International Journal of Future Generation Communication and Networking, Volume: 8, Issue: 5, PP 157-166 2015
- ii. **Swarnendu K Chakraborty, Rajat Subhra Goswami, C. T. Bhunia**, "A Study to Examine the Superiority of CSAVK, AVK over Conventional Encryption with a Single Key", International Journal of Security and Its Applications Vol. 10, No. 2 (2016), pp.279-286 <http://dx.doi.org/10.14257/ijasia.2016.10.2.25>.
- iii. **Koj Sambyo, Anish Kumar Saha and C.T. Bhunia**, "An Analysis of Header Compression in Network Node", IUP Journal of Information Technology, Vol 11, Issue: 4(Dec 2015), PP-57-66.
- iv. **Koj Sambyo, Anish Kumar Saha and C.T. Bhunia**, "Node Skipping Routing", International Journal of Advanced Science and Technology, Vol.85 (2015), pp.1-8.
- v. **Koj Sambyo, Anish Kumar Saha and C.T. Bhunia**, "Coding Header Compression", International Journal of Advanced Science and Technology, Vol.84 (2015), pp.55-64.
- vi. **Koj Sambyo, Anish Kumar Saha and C.T. Bhunia**, "Analysis of APC and Code of Practice", The International Journal of Applied Engineering Research (IJAER), Volume 10, Number 17 (2015), ISSN 0973-4562, pp 37935-37938.
- vii. K. C. Baruah, **S. Banerjee, M. P. Dutta, C. T. Bhunia**, "An Improved Biometric-based Multi-server Authentication Scheme Using Smart Card", International Journal of Security and Its Applications , Vol.9, No.1 (2015), pp.397-408.

- viii. **S. Banerjee, M. P Dutta and C. T. Bhunia**, "An Improved Smart Card based Anonymous Multi-Server Remote User Authentication Scheme", International Journal of Smart Home, Volume 9, No 5, 11-22, 2015.
- ix. **M P Dutta, S Banerjee and C. T Bhunia**, "An Approach to Generate 2-Dimensional AVK to Enhance Security of Shared Information", International Journal of Security and Its Applications 9 (10), 147-154, 2015.
- x. K. C. Baruah, **S. Banerjee, M. P. Dutta and C. T. Bhunia**, "A New Remote User Authentication Scheme based on Graphical Password using Smart Card", International Journal of Security and Its Applications , Vol.9, No.12 (2015), pp.237-244.
- xi. **Anish Kumar Saha, Koj Sambyo, And C.T. Bhunia**, "Design And Analysis of N:2N Reversible Decoder", Accepted in IETE, Journal Of Education, ISSN: 0974-7338.
- xii. **\*\*S. Balasundaram, Deepak Gupta**, "Knowledge based extreme learning machines", Neural Network & Application, **Springer** (2015), SCI, (DOI: 10.1007/s00521-015-1961-5)

**\*\* Dr. Deepak Gupta joined on 12/02/2016 at NIT Arunachal Pradesh.**

**National Journal:** nil

**International Conference:**

- i. **Anish Kumar Saha, Koj Sambyo, and C.T. Bhunia**, "Topology Discovery, Loop Finding and Alternative Path Solution in POX Controller", Proceedings of the International MultiConference of Engineers and Computer Scientists 2016 Vol II, IMECS 2016, March 16 - 18, 2016, Hong Kong.
- ii. Soma Dey, **Rajat Subhra Goswami**, " A Morphological Segmentation and Curve-let Features Extraction on Text Region Classification using SVM", 2015 IEEE International Conference on Computational Intelligence and Computing Research organised by Vickram College of Engineering, Madurai, Tamil Nadu on 11th December 2015
- iii. Argha Sarkar, **S K Chakraborty**, Santanu Maity, **C T Bhunia**, "Simulation and synthesis of graphene layer for biomedical sensor to detect prostate cancer", IEEE conference CODEC-2015, Calcutta University, Dec 2015.
- iv. Sanjit Ningthoujam, **S.K. Chakraborty, C.T Bhunia**, "New Basic Scheme for Packet Combining to Achieve Fast Error Correction and Higher Throughput", International Conference on Computing and Communication Systems (I3CS'15).

- v. **S.K. Chakraborty, R.S Goswami, A. Bhunia, C.T Bhunia**, "New protocol of aggressive packet combining in Gilbert two state model," in Control, Instrumentation, Energy and Communication (CIEC), 2014 International Conference on , vol., no., pp.683-685, Jan. 31 2014-Feb. 2 2014
- vi. A Sarkar, **S K Chakraborty, C T Bhunia**, "Different Protocols of Aggressive Packet Combining Scheme with Physical Layer Representation", IEEE conference CODEC-2015, Calcutta University, Dec 2015.
- vii. **S. Banerjee, M. P Dutta, C. T. Bhunia**, "Cryptanalysis and Security Enhancement of an Efficient and Secure Dynamic Id based Remote User Authentication Scheme for Multi-Server Environment", ACM International Conference on Advanced Research in Computer Science Engineering & Technology (ICARCSET-2015), 6-7th March, 2015.
- viii. **M. P. Dutta, S. Banerjee, C. T. Bhunia**, "Two New Schemes to Generate Automatic Variable Key (AVK) to achieve the Perfect Security in Insecure Communication Channel" ACM International Conference on Advanced Research in Computer Science Engineering & Technology (ICARCSET-2015), 6-7th March, 2015.
- ix. **S. Banerjee, M. P Dutta, C. T. Bhunia**, "A perfect dynamic-id and biometric based remote user authentication scheme under multi-server environments using smart cards", Proceedings of the 8th International Conference on Security of Information and Networks (SIN 2015), Pages 58-64, September 8-10, 2015 Sochi/Russia, ACM Publisher.
- x. **Rajat Subhra Goswami, S. Banerjee, M. P. Dutta, C. T. Bhunia**, "Absolute key variation technique of automatic variable key in cryptography", Proceedings of the 8th International Conference on Security of Information and Networks (SIN 2015), September 8-10, 2015 Sochi/Russia, PP: 65-67, ACM Publisher.
- xi. **M. P. Dutta, S. Banerjee, C. T. Bhunia**, "Generation of Variable Session Keys Based on Piggybacking Strategy", Proc. of The Third Intl. Conf. on Advances in Computing, Electronics and Communication - ACEC 2015, 10th -11st October 2015, PP-100 – 104, Swizer.
- xii. **M. P. Dutta, S. Banerjee, Rajat Subhra Goswami, C. T. Bhunia**, "New way of Generating Variable Keys in Achieving Perfect Security", International Conference on Computing and Communication Systems (I3CS'15), 9th -10th April, 2015, NEHU.

- xiii. **Subhasish Banerjee, Manash P Dutta** and **C. T. Bhunia**, "An Approach to Generate Automatic Variable Key to Assure Perfect Security in Cryptosystem", 13th International Conference on Information Technology: New Generations (ITNG 2016), April 11-13, 2016, Las Vegas, Nevada, USA.

**National Conference:** nil

(\* Name of the Authors mentioned in **BOLD** are the faculty members of CSE department, NIT-Arunachal Pradesh.

### 5.11. Department of Electronics & Communication Engineering

The Department of Electronics & Communication Engineering was established right from the inception of the Institute in 2010. The Department offers a four year degree programme in Electronics & Communication Engineering with an annual intake capacity of 30 students. The mission of the Department of Electronics & Communication Engineering is to produce and disseminate theory, principles, practice and know-how of computing in the information age, for the critical analysis, design, evaluation, and improvement of computing systems in tune with the needs and demands of the changing times. The curriculum strives to keep the students posted at par with the latest trends of the world.

#### Faculty Members

Sl. No.	Name of the faculty	Date of joining	Designation	Area of Specialization
i	Sh. Sahadev Roy	13.08.2012	Assistant Professor	Mechatronics & Robotics
ii	Ms. Yaka Bulo	07.08.2013	Assistant Professor	VLSI
iii	Sh. Santanu Maity	27.02.2013	Assistant Professor	RF & Microwave
iv	Ms. Yang Saring	11.04.2013	Assistant Professor	Mobile Computing
v	Sh. Alak Majumder	06.09.2013	Assistant Professor	VLSI
vi	Sh. Abir Jyoti Mondal	10.09.2013	Assistant Professor	VLSI
vii	Dr. Sanjeev Kr. Metya	05.01.2015	Assistant Professor	Optical Com. System
viii	Dr. Subhadeep Mukhopadhyay	22.01.2016	Assistant Professor	Microelectronics, Micro fluidics

**Students' strength**

	Boys	Girls	Total
B. Tech 1st year	24	4	28
B. Tech 2nd year	21	3	24
B. Tech 3rd year	14	2	16
B. Tech 4th year	24	4	28
M. Tech in EDM (1st year only)	8	6	14
M. Tech in EDM (2nd year only)	17	3	20
M.Tech in MCC (1st year only)	8	4	12
*Ph.D.	9	2	11
<b>Total</b>	<b>125</b>	<b>28</b>	<b>153</b>

\*The no. of Ph.D students includes the internal faculty members who are pursuing their Ph.D (part-time) at NIT Arunachal Pradesh.

**Expert Faculty from reputed Institutions**

Sl. No.	Name of the Experts
i	Former Prof. S. C. Dutta Roy, Department of Electrical Engineering, IIT-Delhi.
ii	Prof. P. K. Basu, Department of Radiophysics & Electronics, Calcutta University, Kolkata.
iii	Prof. S. L. Maskara, Department of Electronics & Communication Engg., IIT-Kharagpur.
iv	Prof. S. Subedar, Department of Electronics & Communication Engineering, North Eastern Regional Institute of Science and Technology, Nirjuli, Arunachal Pradesh.
v	Prof. Dr. Jagadesh Kumar, Department of Electrical Engineering, IIT-Delhi.
vi	Prof. Dr. Susanta Sen, Institute of Radio Physics & Electronics, University of Kolkata.
vii	Prof. Dr. Siddhartha Sen, HoD, Department of Electrical Engineering, IIT-Kharagpur.
viii	Prof. Dr. Anirban Bhattacharya, Institute of Radio Physics & Electronics, University of Kolkata.
ix	Prof. Dr. Bidyut Bhattacharyya, Department of Electrical Engineering, NIT-Agartala.
x	Prof. Dr. Sambhu Nath Pradhan, Department of Electrical Engineering, NIT – Agartala.
xi	Prof. Dr. Sanatan Chattopadhyay, Institute of Radio Physics & Electronics, University of Kolkata.
xii	Prof. Dr. P. P. Goswami, Institute of Radio Physics & Electronics, University of Kolkata.

### Laboratory Development

The Department has equipped the following Laboratories to conduct practice classes as per academic schedule:

1. Digital Electronics Laboratory
2. Basic Electronics Laboratory
3. Communication Engineering Laboratory (Analog & Digital)
4. Simulation Laboratory
5. Embedded Laboratory
6. RF & Microwave Engineering Laboratory
7. Antenna Laboratory
8. Electronics Device and Circuits Laboratory
9. Electronics Instrument & Measurement Laboratory
10. VLSI Design

### List of Publications by Faculty Members in the last few Years

- i. **S. K. Metya** and V. Janyani: "Improved Dispersion Tolerance of Miller Coding by Integrating Duobinary Coding", *Optical and Quantum Electronics*, Springer, US, Vol. **47**, no. 2, pp 125-130, Feb. 2015.
- ii. D. P. Samajdar, **T. D. Das**, S. Dhar, "Valence band anticrossing model for GaSb<sub>1-x</sub>Bi<sub>x</sub> and GaP<sub>1-x</sub>Bi<sub>x</sub> using k.p method", *Materials Science in Semiconductor Processing*, vol. 40, pp. 539-542, 2015.
- iii. S. Das, A. S. Sharma, **T. D. Das**, S. Dhar, "Dependence of heavy hole exciton binding energy and the strain distribution in GaAs<sub>1-x</sub>Bi<sub>x</sub>/GaAs finite spherical quantum dots on Bi content in the material", *Superlattices and Microstructures*, vol. 86, pp 221-227, 2015.
- iv. **S. Maity**, **S. K. Metya**, C. T. Bhunia, P. Chakraborty, P. P. Sahu, "Improvement of front side contact and quantum efficiency of c-Si solar cell through light induced plating", *Optical and Quantum Electronics*, Springer US, vol. 47, no. 10, pp. 3391-3404, 2015.
- v. B. Mondal, **S. Maity**, S. Das, D. Panda, H. Saha, A. Kundu, "Fabrication and packaging of MEMS based platform for hydrogen sensor using ZnO–SnO<sub>2</sub> composites", *Microsystem Technologies*, Springer Berlin Heidelberg, pp. 1-8, 2015.
- vi. **S. Maity**, C. T. Bhunia, "Experimental study of some effective surface parameters of crystalline silicon solar cell for getting better performance", *International Journal of Engineers*, vol. 28, no. 1, pp. 81-87, 2015.

- vii. N. M. Devi, **S. Maity**, R. Saha, **S. K. Metya**, "RF MEMS and CSRRs-based tunable filter designed for Ku and K bands application", Cogent Engineering, vol. 2, no. 1, pp. 1083641, 2015.
- viii. S. Bhattacharjee, **S. Maity**, **S. K. Metya**, C. T. Bhunia, "Performance enhancement of implantable medical antenna using differential feed technique", Engineering Science and Technology, an International, Elsevier, 2015 .
- ix. R. Saha, **S. Maity**, "Design of Micromachining Based Patch Antenna to Enhance Performances for RFID Tag Application", Science & Engineering research support Society, vol. 8, no. 1, pp. 261-268, 2015
- x. R. Saha, **S. Maity**, "Ameliorate of bandwidth and return loss of rectangular patch antenna using metamaterial structure for RFID technology", Journal of Engineering Science & Technology, vol. 11, no. 9, 2015.
- xi. **A. Majumder**, B. Nath, D. Sarkar, M. Das, "Cycle in Conventional Combinational Circuits: A Comprehensive Survey", International Journal Advanced Science & Technology, vol. 80, pp.53-78, 2015.
- xii. A. Kar, **A. Majumder**, "A 43 $\mu$ watt 3-bit Flash ADC designed with TMCC and Bit Referenced Encoder in 180 nm CMOS Technology", International Journal Advanced Science & Technology, vol.79, pp. 49-60, 2015.
- xiii. R. Khumukcham, **Y. Saring**, C. T. Bhunia, "Multiple-route APC scheme for data communication", International Journal of Advanced Electronics & Communication Systems, vol. 4, no. 1, 2015.
- xiv. **Y. Bulo**, C. T. Bhunia, "New Protocol of Aggressive Packet Combining Scheme: An extension to throughput comparison," International Journal of Computer Applications, USA, vol.113, no. 5, pp. 5-8, 2015.
- xv. **Y. Saring**, **Y. Bulo**, C. T. Bhunia, "New modifications of aggressive packet combining scheme with improved performance," International Journal of Applied Engineering Research, vol.10, no. 5, 2015.
- xvi. **Y. Bulo**, **Y. Saring**, C. T. Bhunia, "Horizontal and vertical packet combining scheme with maximum erroneous bits limit," International Journal of Applied Engineering Research. (Accepted).
- xvii. T. A. Sheikh, J. Borah, **S. Roy**, "Miniaturized Tri-Band BPF using Asymmetric SIRs and DGS," in International Journal of Signal Processing, Image Processing and Pattern Recognition, vol. 8, no. 2, pp. 337-346, 2015.

- xviii. J. Borah, T. A. Sheikh, **S. Roy**, "Effects of Modified Ground Structure on a CPW-fed Patch Antenna", International Journal of Future Generation Communication and Networking, vol. 8, no. 2, pp. 205-212, 2015.
- xix. J. Borah, T. A. Sheikh, **S. Roy**. "A Study of Small CPW-fed Dual-band Antenna using Different Dielectrics." International Journal of Advanced Electronics and Communication Systems 4.1,2015.
- xx. T. A. Sheikh, S. Dutta, S. Baruah, P. Sharma, **S. Roy**, "Obstacle Avoidance Robot Using LabView." IAES International Journal of Robotics and Automation (IJRA) 4.3 (2015).
- xxi. **S. Roy**, C. T. Bhunia, "On Synthesis of Combinational Logic Circuits." International Journal of Computer Applications 127.1 pp. 21-26, 2015.
- xxii. **S. Maity**, P. Chakraborty, R. Raushan, C. T. Bhunia, P. P. Sahu, "A compact series resistance model of solar cell for parametric study", ICRCWIP2015, Springer.
- xxiii. S. Bhattacharjee, **S. Maity**, "Miniaturization of MEMS based smart patch antennas for bio-medical applications", ICRCWIP2015, Springer.
- xxiv. N. M. Devi, **S. Maity**, "Design and optimization of band stop filter using metamaterial structures for k-band applications", ICRCWIP2015, Springer.
- xxv. A. Sarkar, S. Kumar, B. Madhuri, **S. Maity**, "CNT based biomedical sensor for cancer detection", ICRCWIP2015, Springer.
- xxvi. R. Saha, L. Sarkar, **S. Maity**, "A Novel MEMS based frequency tunable rectangular patch antenna", ICRCWIP2015, Springer.
- xxvii. R. Saha, **S. Maity**, "Design of O-shape metamaterial structure on rectangular patch antenna for RFID application", Electrical, Electronics, Signals, Communication and Optimization (EESCO), 2015 International Conference on, pp. 1-5, 2015.
- xxviii. R. Saha, **S. Maity**, N. Trigunayat, "Enhancement of gain, bandwidth and directivity of a patch antenna by increasing dielectric layers of the substrate through micromachining technique for RFID application", Computer Engineering and Applications (ICACEA), 2015 International Conference on Advances in, pp. 321-324, 2015.
- xxix. Aditya Sharma and **T. D. Das** "MEH – PPV Thickness Variations for High Luminescent Power OLED" Presented at IWPSD 2015, IISC, Bangalore.

- xxx. **T. D. Das**, D. P. Samajdar, M. K. Bhowal and S. Dhar "Liquid Phase Epitaxial Growth and Low Temperature Photoluminescence of InPBi and GaSbBi," Presented at IWPSD2015, IISC, Bangalore
- xxxi. D. Muchahary, **A. J. Mondal**, R. S. Parmer, **A. Majumder**, "A Simplified Design Approach for Efficient Computation on DCT", 5th IEEE International Conference on Communication System and Network Technologies (CSNT-2015), Gwalior, India.
- xxxii. D. Muchahary, **A. J. Mondal**, **A. Majumder**, "A CORDIC Based Design Technique for Efficient Computation of DCT", International Conference on Communication and Signal Processing (ICCSP-2015), IEEE, Tamilnadu, India.
- xxxiii. A. D. Borah, **A. J. Mondal**, D. Muchahary, **A. Majumder**, "FIR Low Pass filter design using Craziness Based article Swarm Optimization Technique", International Conference on Communication and Signal Processing (ICCSP 2015), IEEE, Tamilnadu, India.
- xxxiv. S. K. Singh, **A. J. Mondal**, **A. Majumder**, "Generation and Performance Evaluation of Reconfigurable Fault Tolerant Routing Algorithm for 2D-Mesh NoC", Procedia Computer Science, vol. 57, pp. 232-240, 2015.
- xxxv. S. K. Singh, **A. J. Mondal**, **A. Majumder**, "Generation and performance evaluation of reconfigurable random routing algorithm for 2D-mesh NoCs", Test Symposium (LATS), 2015 16th Latin-American, pp. 1-6, 2015.
- xxxvi. J. Goswami, S. Ghosh, **A. Majumder**, S. Katiyar, "Development of a Prototype to detect Speed Limit Violation for Better Traffic Management", 8th International Conference on Contemporary Computing (IC3 - 2015), IEEE, Noida, India.
- xxxvii. A. Kar, M. Das, B. Nath, D. Sarkar, **A. Majumder**, "Comparative analysis of low power novel encoders for Flash ADC in 45nm technology", Smart Technologies and Management for Computing, Communication, Controls, Energy and Materials (ICSTM), 2015 International Conference on, pp. 360-365, 2015.
- xxxviii. M. Das, B. Nath, D. Sarkar, A. Kar, **A. Majumder**, "Design of ultra-low power novel 3-bit flash ADC in 45nm CMOS technology", Smart Technologies and Management for Computing, Communication, Controls, Energy and Materials (ICSTM), 2015 International Conference on, pp. 239-244, 2015.

- xxxix. S. Ghosh, J. Goswami, A. Kumar, **A. Majumder**, "Issues in NFC as a form of contactless communication: A comprehensive survey", Smart Technologies and Management for Computing, Communication, Controls, Energy and Materials (ICSTM), 2015 International Conference on, pp. 245-252, 2015.
- xl. **A. Majumder**, P. L. Singh, B. Chowdhury, R. Rai, "Synthesis and Realization of N-bit Reversible Register File Used in Bus Organization of Processor Architecture", Procedia Computer Science, vol. 57, pp. 305-312, 2015.
- xli. **A. Majumder**, P. L. Singh, B. Chowdhury, **A. J. Mondal**, V. Anand, "Efficient Design and Analysis of N-bit Reversible Shift Registers", Procedia Computer Science, vol. 57, pp. 199-208, 2015.
- xlii. P. L. Singh, **A. Majumder**, B. Chowdhury, **A. J. Mondal**, T. S. Shekhawat, "Reducing Delay and Quantum Cost in the Novel Design of Reversible Memory Elements", Procedia Computer Science, vol. 57, pp. 189-198, 2015.
- xliii. P. L. Singh, **A. Majumder**, B. Chowdhury, R. Singh, N. Mishra, "A novel realization of reversible LFSR for its application in cryptography", Signal Processing and Integrated Networks (SPIN), 2015 2nd International Conference on, pp. 601-606, 2015.
- xliv. **A. Majumder**, B. Chowdhury, **A. J. Mondal**, K. Jain, "Investigation on QuineMcCluskey method: A decimal manipulation based novel approach for the minimization of Boolean function", Electronic Design, Computer Networks Automated Verification (EDCAV), 2015 International Conference on, pp. 18-22, 2015.
- xlv. K. Jain, S. K. Singh, **A. Majumder**, **A. J. Mondal**, "Problems encountered in various arbitration techniques used in NOC router: A survey", Electronic Design, Computer Networks Automated Verification (EDCAV), 2015 International Conference on, pp. 62-67, 2015.
- xlvi. **A. Majumder**, P. L. Singh, N. Mishra, **A. J. Mondal**, B. Chowdhury, "A novel delay & Quantum Cost efficient reversible realization of  $2^i \times j$  Random Access Memory", VLSI Systems, Architecture, Technology and Applications (VLSI-SATA), 2015 International Conference on, pp. 1-6, 2015.
- xlvii. A. Kar, **A. Majumder**, **A. J. Mondal**, N. Mishra, "Design of ultra-low power flash ADC using TMCC & bit referenced encoder in 180nm technology", VLSI Systems, Architecture, Technology and Applications (VLSI-SATA), 2015 International Conference on, pp. 1-6, 2015.

- xlvi. **S. Roy**, R. Saha, C. T. Bhunia, "Multiple Inputs Combinational Logic Minimization by Minterms Set", in Proc. of 1st International Conference on Recent cognizance in wireless communication & image processing (ICRCWIP-2015), Springer, Jan. 2015.
- xlix. P. Sharma, **Y. Bulo**, "Logical aggressive packet combining with post-reception selection combining scheme for wireless network", ICCSP – 2015.
- i. V. Rajoria, Priyanshu, **S. K. Metya**, "Automatic Railway Inspection System", NCCCIP – 2015, NERIST, Nirjuli, May 2015.
- ii. R. Debnath, V. Hanumante, D. Bhattacharjee, D. Tripathi, **S. Roy**. "Multilingual speech translator using MATLAB." Electrical, Electronics, Signals, Communication and Optimization (EESCO), 2015 International Conference on. IEEE, 2015.

(\* Name of the Authors mentioned in **BOLD** are the faculty members of **ECE** department, NIT-Arunachal Pradesh.

### 5.12. Department of Electrical Engineering

Electrical Engineering is a field of engineering that generally deals with the study and application of electricity, electronics and electromagnetism. The field first became an identifiable occupation in the late nineteenth century after commercialization of the electric telegraph and electrical power supply. It now covers a range of sub-topics including power, electronics, control systems, signal processing and telecommunications. The department of Electrical & Electronics Engineering was established right from the inception of the Institute in 2010. The department offers a four year degree program in Electrical Engineering with an annual intake capacity of 30 students. The Department is renamed as 'Electrical Engineering' since August, 2014. The department introduced one M. Tech Programme in 'Renewable Energy & Energy Management' from 2015-16 academic sessions. The total 12 no. of students admitted in the first batch.

The course objective is to prepare the students to be successful in integrating all the fields of engineering and science, and to be able to pursue advanced studies in Electrical Engineering on a competitive global basis. The mission is a culmination of the efforts of the department to meet the mission of NIT-Arunachal Pradesh, North-Eastern region and the nation at large.

### Faculty Members

Sl. No.	Name of the faculty	Date of joining	Designation	Area of Specialization
i	Prof. P. D. Kashyap	01.11.2011	Associate Prof.	Measurement and Instrumentation
ii	Rajen Pudur	01.02.2012	Assistant Prof.	Power Systems, Renewable Source of Energy, Distributed Generation (DG)
iii	Ralli Sangno	06.09.2013	Assistant Prof.	Power System Engineering and Power System Control
iv	Shantanu Chatterjee	14.09.2013	Assistant Prof.	Applied Electronics & Instrumentation and Power Electronics
v	Brajagopal Datta	10.12.2013	Assistant Prof.	High Voltage Engineering, HUDC System
vi	Dr. Abhik Banerjee	23.12.2015	Assistant Prof.	Power System Engineering
vii	Rajib Jana	21.01.2016	Assistant Prof.	Antenna & Microwave

### Students' strength

	Boys	Girls	Total
B. Tech 1st year	22	2	24
B. Tech 2nd year	19	1	20
B. Tech 3rd year	15	4	19
B. Tech 4th year	24	4	28
M. Tech (REEM)	8	4	12
<b>Total</b>	<b>88</b>	<b>15</b>	<b>103</b>

### Expert Faculty from reputed Institutions

Sl. No.	Name of the Experts
i	Prof P. Sarkar, Department of Electrical Engineering, NITTR-Kolkata
ii	Prof. S.C. Dutta Roy, Former Professor, IIT Delhi
iii	Prof. D.P Kothari, Former Professor, IIT Delhi
iv	Dr. Praveen Kumar, Associate Professor, IIT Guwahati
v	Dr. Sarsing Gao, Associate Professor, NERIST
vi	Prof. Saibal Chatterjee, Professor, NERIST

### Seminars, Symposia and Workshops participated by the faculty members

- R. Pudur: "Grid Integration of Renewable Energy Sources (GIRES)" at IIT Delhi, on 18th to 19th April 2015.
- R. Pudur: One week course in "Industrial and Commercial Power System Analysis (ICPSA)" Recommended Practices. On 1st July 2013 to 5th July 2013, at MNNIT Allahabad.
- B. Datta and S. Chatterjee: "Industry Academia Workshop on Process Control and Instrumentation, IOCL Digboi, Refinery, organized by Petrofed India Ltd. 19th and 20th Feb'2015.

### Laboratory Development

The Department has equipped the following Laboratories to conduct practice classes as per academic schedule:

1. Electrical Machine Laboratory
2. Electrical Measurement/Power System Laboratory
3. Control System Laboratory
4. Simulation Laboratory
5. Power System Laboratory
6. Energy Laboratory

### List of Publications by Faculty Members in the last few Years

- i. **R. Pudur** and Sarsing Gao, "Savonius rotor based grid connected hydrokinetic power generation scheme", Sustainable, Energy, grid and Network (SEGAN), Elsevier, 2016, Vol-5, pp 148-155.
- ii. **R. Pudur** and Sarsing Gao: "Single pahse power for remote area using Savonius rotor based hydropower generation" IEEE, International Conferance on Energy, Power and Environment (ICEPE) 12th -13th June, 2015, NIT Meghalaya.
- iii. **R. Pudur** and S. Gao: "Performance analysis of Savonius rotor on different aspect ratio for hydropower generation," ICPDEN 10th – 11th Jan-2015, IEEE, NERIST
- iv. **R. Pudur** and S. Gao "Savonius rotor based hydropower generation," International Symposium on AMETI 2014 (p 104 – 111), 6th -8th Dec-2014, ISBN 978-93-83842-96-4, NERIST.
- v. **R. Puduret. Al:** "Wireless Power Transmission: A Survery," IEEE ICRAIE-2014, Jaipur.
- vi. B. Sah and **R. Pudur:** "Study of Unsymmetrical Faults in Power System Using Morlet Wavelet Technique," IEEE SCC-2014, Bhopal.

- vii. S. Gao and **R. Pudur**: "Harnessing hydroelectric power using savonius rotor coupled with asynchronous generator connected to grid," IEEE APPEEC-2013, Hong Kong.
- viii. Dr. A.K Singh and **R. Pudur**: "Modelling of single phase UPFC without DC capacitor," IJEST, vol-3. No. 5 May 2011, ISSN: 0975-5462, (P-3732-3738).
- ix. **B. Datta**, and Dr. Saibal Chattarjee: "Simulation of Bewley's Lattice Diagram using MATLAB", IEEE CATCON-2013, Jadavpur University.
- x. K. Gogoi, N. Debnath, D. Mishra, **B. Datta** and S. Chattarjee: "Load flow studies on transmission line of 220 kv and 400 kv of NER Grid India using PSSE," NPSC-2014, IIT, Guwahati. (Communicated).
- xi. **S. Chatterjee**: "A Novel Hybrid Multilevel Invertor for Photovoltaic Application Using Dual Reference Modulation Scheme," NPEC-2013, IIT-Kanpur.
- xii. **S. Chatterjee**: "Modelling & Simulation of VSC base SSSC," NPSC-2014, IIT Guwahati. (Communicated).
- xiii. **S. Chattarjee** and Ankit Garg: "Chaotic PWM Spread Spectrum Scheme for Conducted Noise Mitigation in DC-Dc Convertors," NPSC-2014, IIT Guwahati
- xiv. S. Panda, P. K Mahapatra and **S. P. Panigrahi**: "A New Training Scheme for Neural Networks and application in Non-linear Channel Equalization," Elsevier Applied Soft Computing, Vol. 27, pp. 47-52, 2015.
- xv. **B. Datta**, and and Dr. Saibal Chattarjee: " Effects of Electrical Field and Electromagnetic Interference in close proximity and Hybrid operation of HVAC and HVDC Transmission Lines", IEEE C2E2 Conference, Kolkata, India, 15th -16th Jan. 2016.

(\* ) Name of the Authors mentioned in **BOLD** are the faculty members of **EE** department, NIT-Arunachal Pradesh

### 5.13. Department of Civil Engineering

Civil engineering is a professional engineering discipline that deals with the design, construction, and maintenance of the physical and naturally built environment, including works like roads, bridges, canals, dams, and buildings. Civil engineering is one of the oldest engineering disciplines. It is traditionally broken into several sub-disciplines including environmental engineering, geo-technical engineering, geo-physics, structural engineering, transportation engineering, earth science,

municipal or urban engineering, water resources engineering, materials engineering, offshore engineering, quantity surveying, coastal engineering, surveying and construction engineering. Civil Engineering pervades through all the levels in the public sector-- from municipal administration through to national government, and in the private sector from individual home-owners through to international companies. The department of Civil Engineering at the National Institute of Technology-Arunachal Pradesh, was started in 2013 with an annual intake capacity of 30 students.

The objective is to prepare the students to be capable of taking up any Civil Engineering challenges and to be able to pursue advanced studies and research in Civil Engineering on a competitive global basis. The mission of the department is culmination of its efforts to meet the efforts of NIT-Arunachal Pradesh, North Eastern region and the nation at large.

### Faculty Members

Sl. No.	Name of the faculty	Date of joining	Designation	Area of Specialization
1	Ms Jumrik Taipodia	09.12.2013	Assistant Professor	Geotechnical Engineering
2	Mrs. Nabum Rich	02.01.2015	Assistant Professor	Environmental Engineering
3	SriAnuran Bhattacharjee	15.07.2015	Assistant Professor	Water Resource Engineering
4	Mr Likha Arun	01.09.2015	Assistant Professor	Structural Engineering
5	Dr. M Berlin	07.12.2015	Assistant Professor	Water Resource Engineering
6	Dr. Mainak Mallik	21.12.2015	Associate Professor	Structural Engineering

### Students' strength

	Boys	Girls	Total
B. Tech 1st year	23	2	25
B. Tech 2nd year	19	3	22
B. Tech 3rd year	17	1	18
<b>Total</b>	<b>59</b>	<b>6</b>	<b>65</b>

### I-COURSE

- i. Water supply and Sanitation Engineering
- ii. Structural Analysis-I

### Expert Faculty from reputed Institutions

Sl. No.	Name of the Experts
i	Mr. P. Valmiki, Department of Civil Engineering, NERIST
ii	Mr. Tomi Ete, Former Chief Engineer, PHED, Arunachal Pradesh
iii	Dr. S. Mishra, Dept. of Civil Engineering, NERIST
iv	Mr. S. K. Sahoo, Dept. of Civil Engineering, NERIST
v	Prof S. N. Ghosh, Dept. of Civil Engineering, JU (Kolkata)
Vi	Dr. Arindam Dey, Dept. of Civil Engineering, IITG
Vii	Sri Abu Lego, RGU

### Laboratory Development

The Department has equipped the following Laboratories to conduct practice classes as per academic schedule:

1. Material Testing Laboratory
2. Surveying Laboratory
3. Geo-technical Laboratory
4. Structure Laboratory
5. Geology Laboratory
6. Fluid Mechanics Laboratory
7. Strength of Materials Laboratory

### List of Publications by Faculty Members in the last few Years

1. **Taipodia, J.,** Prakash Babu, K., Kiran, B. and **Dey, A.** (2014) "Subsurface Characterization using MASW: Preliminary Experimentation and Analysis" *International Journal of Innovative Research in Science, Engineering and Technology (IJIRSET), Special Issue on National Conference on Recent Advances in Civil Engineering: NCRACE-2013, Vol. 3, Spl. Iss. 4, pp. 129-138.*
2. **Taipodia, J.,** Baglari, D., Biswas, S. and **Dey, A.** (2015) "Dispersion analysis using active MASW survey data" *Indian Geotechnical Conference: IGC 2015, Pune, India, pp. 1-9.*
3. **Taipodia, J.,** Bishnoi, B. R., Baglari, D., Murali Krishna, A. and **Dey, A.** (2014) "Geophysical investigations for identification of subsurface stratigraphy at IIT Guwahati" *Indian Geotechnical Conference (IGC-2014), Kakinada, India, pp. 219-226*

4. **Taipodia, J.**, Prakash Babu, K., Kiran, B. and **Dey, A.** (2013) "Subsurface Characterization using MASW: Preliminary Experimentation and Analysis" *National Conference on Recent Advances in Civil Engineering: NCRACE-2013, NERIST, Nirjuli, India*, pp. 1-7.
5. **Taipodia, J.** and **Dey, A.** (2012) "A Review of Active and Passive MASW Techniques" *EGCEG 2012, National Workshop on Engineering Geophysics for Civil Engineering and GeoHazards, Roorkee, India*, pp. 1-12.
6. Assessment of different types of in-vessel composters and its effect on stabilization of MSW compost. *International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395 -0056 Volume: 02 Issue: 02 | May-2015 www.irjet.net p-ISSN: 2395-0072*, Authurs:**Nabam Rich**<sup>1</sup>, Ajay Bharti<sup>2</sup> *Assistant Professor Department of Civil Engineering, NIT, Yupia, Arunachal Pradesh, India*<sup>1</sup> [nabamr@yahoo.com](mailto:nabamr@yahoo.com), *Assistant Professor, Department of Civil Engineering, NERIST, Nirjuli, Arunachal Pradesh, India*<sup>2</sup> [abt@nerist.ac.in](mailto:abt@nerist.ac.in)
7. Paper titled: *Changes in Characteristic of Municipal Solid Waste by Bulking Agent In-vessel Composting: Critical Review*. Presented in National Conference on Recent Advances in Civil Engineering NERIST, Arunachal Pradesh (NCRACE-2013) Authors; **Nabam rich**, Sunil Kumar, Ajay Bharati (This paper was based on my PhD research work title "*Carbon and Nitrogen Transformation Process in in-vessel composting of Municipal Solid Waste*")
8. Published paper in *International Journal of Innovative Research in Science, Engineering and Technology (IJIRSET)*. 12/2012; 3(Special Issue 01):511–520. Presented in National Conference on Recent Advances in Civil Engineering, NERIST, Arunachal Pradesh (NCRACE-2013). Paper title: *Aerobic Composting of MSW: A Sustainable Way to Reduce Greenhouse Gas Emission*, Authors: **Nabam Rich**, Rita Tiwari, Takum Nalo, Ajay Bharti.
9. Paper presented in National seminar on Renewable Energy Technology: issues and prospects, NERIST., Paper title: *Impact of landfill gases on the climate change*. Authors: **Nabam Rich\***, Takum Nalo and Ajay Bharti

(\*) Name of the Authors mentioned in **BOLD** are the faculty members of CE department of NIT-Arunachal Pradesh

#### 5.14. Department of Mechanical Engineering

Mechanical Engineering is one of the major divisions within the profession and its principles are involved in the design, development and construction of nearly all of the physical devices and systems which technology has produced. Mechanical engineers are also concerned with the operations of all kinds of machinery and the production of power. They must conceive research, design, develop, test, manufacture and sell-equipment for these purposes. It is one of the oldest and broadest engineering disciplines.

The department of Mechanical Engineering at National Institute of Technology-Arunachal Pradesh was established in August, 2013. The department offers a four year degree programme in Mechanical Engineering with an annual intake capacity of thirty (30) students. Within a very short period, this department has already developed some new laboratories with modern facilities; however some are under the process of development. A continuous effort has been put in place towards setting up of new laboratories and improvement of facilities in the existing ones. The Department had already started their B. Tech classes (2nd year and 3rd year) at the permanent campus site, Jote. The Departmental laboratories have shifted to the permanent site.

The objective is to provide students with a sound knowledge of mechanical engineering education, while enhancing their understanding and skill of application of principles of mechanical engineering for techno-economical development of the country, and improving the quality of life of our citizens through teaching, research, and outreach programmes. The mission is further to provide an environment where students have extensive avenues to excel, improve technical exposure and develop personality and then get placed in reputed organizations with good future so as to ensure their global presence, in various roles and responsibilities, and also to meet the mission of NIT-Arunachal Pradesh, North-Eastern region and the nation at large.

#### Faculty Members

Sl. No.	Name of the faculty	Date of joining	Designation	Area of Specialization
i	Sri Sandip Kumar Mandal	19.09.2013	Assistant Professor	Manufacturing
ii	Sri Shubhajit Das	28-08-2014	Assistant Professor	Design & Manufacturing
iii	Dr. Deepak Sen	31-01-2015	Assistant Professor	Thermal Engineering
iv	Dr. Manjula Das Ghatak	09-03-2015	Assistant Professor	Fluid and Thermal; New and Renewable energy
v	Dr. Anup paul	30-12-2015	Assistant Professor	Bio-Heat Transfer, Laser Mediated Hyperthermia

**Students' strength**

	Boys	Girls	Total
B. Tech 1st year	24	0	24
B. Tech 2nd year	22	1	23
B. Tech 3rd year	19	0	19
*Ph.D	1	0	1
<b>Total</b>	<b>66</b>	<b>1</b>	<b>67</b>

\*The no. of Ph.D students includes the internal faculty members who are pursuing their Ph.D (part-time) at NIT Arunachal Pradesh.

**Expert Faculty from reputed Institutions**

Sl. No.	Name of the Experts
i	Dr. S. Samanta, Associate Professor, Dept. Of Mechanical Engineering, NERIST.
ii	Dr. Biplab Das, Assistant Professor, Dept. Of Mechanical Engineering, NERIST.
iii	Dr. U. K. Saha, Professor, Department of Mechanical Engineering, IIT Guwahati.
iv	Dr. A Giri, Associate Professor, Dept. Of Mechanical Engineering, NERIST.
v	Dr. P Robi, Professor, Department of Mechanical Engineering, IIT Guwahati.
vi	Dr. M Chandrasekharan, Associate Professor, Dept. Of Mechanical Engineering, NERIST
vii	Dr. S Ghosal, Professor, Dept. Of Mechanical Engineering. JU

**Laboratory Development**

The Department has equipped the following Laboratories to conduct practice classes as per academic schedule:

1. Mechanical Workshop (Carpentry Shop, Fitting Shop, Machine Shop, Welding Shop, Foundry Shop)
2. Strength of Material Laboratory.
3. Fluid Mechanics Laboratory.
4. Engineering Drawing Laboratory.
5. Basic Mechanical Engineering Laboratory
6. Heat Transfer Laboratory
7. Dynamics of Machines Laboratory
8. IC Engine Laboratory
9. Advanced Manufacturing Laboratory
10. Measurement & Metrology Laboratory

**List of Publication by Faculty Members in the last year:****Journals:**

1. Shubhajit Das, S. K. Mandal, 'Prediction of process parameters for minimization of tool- chip interface temperature and power consumption in turning mild steel using Taguchi method', International Journal on Current Science & Technology (ISSN 2320 5636, Vol. 3, No.1), 2015.
2. **Shubhajit Das**, 'Surface alloying of Aluminium by W-Cu- Cr powder metallurgy tool electrodes in EDM' International Journal of Latest Research in Engineering and Technology (ISSN: 2454-5031), Vol.2, Issue 4, April 2016, pp 01-10.

**Conferences:**

1. M. Chandrasekaran, **Shubhajit Das**, D. Devarasiddappa, 'Determining the effect of cutting parameters on surface roughness in end milling of Al-356/ SiC p MMC using Fuzzy Logic', COPEN 9 International Conference on Precision, Meso, Micro and Nano Engineering, IIT Bombay, 10-12 December 2015.

(\* Name of the Authors mentioned in **BOLD** are the faculty members of ME department of NIT-Arunachal Pradesh

**5.15. Department of Bio-technology**

Biotechnology and Chemical Engineering currently function as a Joint Department since summer of 2015. The discipline of Biotechnology started admitting student in 2014-2015 in 4 years B.Tech in Biotechnology. A total of 7 students are admitted in the 2014-2015 session and a total of 22 students are admitted in the 2015-2016 session. The discipline of Chemical Engineering started admitting students in 4 years B.Tech programme in Chemical Engineering in the year 2015-2016 with a total strength of 22. The Department aims to provide latest state-of-art education, research and innovation in areas of Biotechnology and Chemical Engineering. In general for the country as a whole, and in particular for the North Eastern region full with bio-diversity, bio-resources, bio-medicinal plants etc, the offer of courses in Biotechnology and Chemical Engineering with specialization in bio-medicine, food processing, preservation etc, are decisively befitting for this Institute of National Importance.

Our vision mainly focuses at imparting knowledge and essence of Biotechnology and Chemical Engineering in fundamental subjects such

as molecular biology and other related areas, coupled with research applications for the improvement of life and sustainable development.

Three different laboratories for Bio-technology have been set up:

- (i) Bio-chemistry-1 Laboratory
- (ii) Microbiology-1 Laboratory
- (iii) Genetics Laboratory



Common Biotechnology Laboratory for Biochemistry, Genetics and Microbiology



Gel Doc instrument



-80°C Refrigerator



Refrigerated Centrifuge



Lyophilizer



pH meter and weighing balance



Thermal Cycler

### I-Course

Unit Operations of Chemical Engineering

Bio-process Engineering

Process Instrumentation and Control

Food Processing Technology

### Faculty Members

Name	Qualification	Date of joining	Designation	Area of Specialization
Dr. Kimjolly Lhouvum	Ph.D	09.03.2015	Assistant Professor & HoD	Molecular Biology
Dr. Pallabi Kalita Hui	Ph.D	24.06.2015	Assistant Professor	Biochemistry
Dr. Saikat K. Jana	Ph.D	21.07.2015	Assistant Professor	Medical Biotechnology

**Students' strength****Bio-Technology: branch**

Batch	Male	Female	ST	SC	OBC	Gen	Total
2014-2015	7	0	1	0	2	4	7
2015-2016	17	5	8	1	6	7	22
Total	24	5	9	1	8	11	29

**Bio-Technology: branch**

Batch	Male	Female	ST	SC	OBC	Gen	Total
2015-2016	18	4	4	3	6	9	22
Total	18	4	4	3	6	9	22

**List of Publications by Faculty Members in the last few years**

Sl. No.	Name of the Faculty	Title of the paper	Name of the Journal	Volume	Page	Year
1.	<b>Dr. Kimjolly Lhovum</b>	1. <b>Kimjolly Lhovum</b> , Vibin Ramakrishnan, Vishal Trivedi. Insight into structural and biochemical determinants of substrate specificity of PFI1625c: Correlation analysis of protein-peptide molecular models.	Journal of Molecular Graphics and Modeling	Vol 43	21-30	2013
		2. Nag S, Chouhan DK, Balaji SN, Chakraborty A, <b>Kimjolly Lhovum</b> et al. Comprehensive screening of heterocyclic compound libraries.	Medicinal Chemistry Research	22	4737-4744	2013
		3. <b>Kimjolly Lhovum</b> , Bhayur Kshitij Shekhar, Vishal Trivedi Molecular modeling and correlation of PFI1625-peptide models of bio active peptides with antimalarial properties	Medicinal Chemistry Research			DOI 10.1007/s00044-014-1232-5
		<b>Citation indices</b>	<b>All</b>	<b>Since 2013</b>		
		Citations	5	5		

Sl. No.	Name of the Faculty	Title of the paper	Name of the Journal	Volume	Page	Year
2.	<b>Dr. Pallabi Kalita Hui</b>	1. Indigenous Fishing Techniques Practiced by the Tribes of Arunachal Pradesh (North East India).	Aquaculture Asia,	10 (22)	35-37	<b>2004</b>
		2. Plants used by the Hill Miri (Nyishi) tribe of Arunachal Pradesh in Ethnofisheries.	Indian Journal of Traditional Knowledge	4 (1)	57-64	<b>2005</b>
		3. Evaluation of the nutritional quality of four unexplored aquatic weeds from northeast India for the formulation of cost-effective fish feeds	Food Chemistry	103	204-209	<b>2007</b>
		4. Supplementation of four non-conventional aquatic weeds to the basal diet of <i>Catla catla</i> and <i>Cirrhinus mrigala</i> fingerlings: Effect on growth, protein utilization and body composition of fish	Acta Ichthyologica et Piscatoria,	38(10)	21-27	<b>2008</b>
		5. <i>Ipomoea aquatica</i> – an aquaculture friendly macrophyte	Aquaculture Asia,	13 (2)	12-13	<b>2008</b>
		6. Botanical resources used in traditional wood carving industry among the Wancho tribe of Arunachal Pradesh	Indian Journal of Traditional Knowledge	7 (1)	148-156	<b>2008</b>
		7. An Ethnobotanical study of traditional anti-inflammatory plants used by the Lohit community of Arunachal Pradesh, India.	Journal of Ethnopharmacology	125 (2)	234-245	<b>2009</b>
		8. Hui Tag Nima D. Namsa, A.K Das, <b>P. Kalita</b> & S.C Mandal. Evaluation of Anti-inflammatory potential of <i>Chloranthus erectus</i> (Buch.-Ham.) Verd. extract in rats.	Journal of Ethnopharmacology	126 (2)	371-374	<b>2009</b>

Sl. No.	Name of the Faculty	Title of the paper	Name of the Journal	Volume	Page	Year
		9. Hui Tag, T. Mingki, Oyi Dai, <b>P. Kalita</b> , G. Nimachow & A.K. Das. Status Report on Phoenix rupicola T. Anderson (Arecaceae) – an endemic and threatened wild Palm in Pakhui Wildlife Sanctuary, East Kameng (Eastern Himalayas), India	Pleione	4 (1)	76	<b>2010</b>
		10. A.K. Mukherjee, <b>P. Kalita</b> , B.G. Unni, S.B. Wann, D. Saikia & P.K. Mukhopadhyay. Fatty acid composition of four potential aquatic weeds and their possible use as fish-feed neutraceuticals	Food Chemistry	123	1252 –1254	<b>2010</b>
		11. Hui Tag, Nima D. Namsa, M. Mandal, <b>P. Kalita</b> , A. K. Das & S. C. Mandal. Antipyretic and antibacterial activity of Chloranthus erectus (Buch.-Ham.) Verdcourt leaf extract: A popular folk medicine of Arunachal Pradesh.	Indian Journal of Pharmacology	42 (5)	273-276	<b>2010</b>
		12. L. Jeri, Hui Tag, J. Tsering, <b>P. Kalita</b> , T. Mingki & A.K Das Ethnobotanical Investigation of Edible and Medicinal Plants in Pakke Wildlife Sanctuary of East Kameng District in Arunachal Pradesh, India.	Pleione	5(1)	83-90	<b>2011</b>
		13. Hui Tag, Nima D. Namsa, <b>P. Kalita</b> , P. Dwivedi & A.K Das. Herbal medicines used in the treatment of diabetes mellitus in Arunachal Himalaya, north-east India.	Journal of Ethnopharmacology	141(3):	986 -795. ISSN: 0378 -8741	<b>2012</b>

Sl. No.	Name of the Faculty	Title of the paper	Name of the Journal	Volume	Page	Year
		14. <b>Kalita Pallabi</b> , Hui Tag and A. K. Das. Evaluation of the nutritional quality of four unexplored wild food plants from Arunachal Himalayas for the formulation of cost effective fish feeds	International Journal of Fisheries and Aquaculture, Academic Journals.	Vol. 5(5)	pp. 92-97. ISSN 2006-9839 ©2013	2013
<b>Books chapter</b>						
1. Biodiversity, Traditional Knowledge, IPR & Rationalization of Traditional Phytomedicine in the Context of North East India. In J. Buragohain Eds. " <b>Traditional Phytotherapy</b> ". ISBN: 978-817035-821-3. Daya Publishing House-A Division of Astral International Pvt. Ltd., New Delhi-110002. pp-27-46. 2013.						
2. Conservation and Utilization of Traditional Food Bioresources by Nyishi Community of Arunachal Himalayan Region (India): Role of Mythology & Folklore. In V.N.Pillai edited " <b>Compendium of Traditional Knowledge</b> ". Published by Kerala State Council for Science, Technology & Environment (KSCSE), Thiruvananthapuram-695004 (India). pp-278-343. 2014						
3. Biocultural Resources and Traditional Food Systems of Nyishi Tribe of Arunachal Pradesh (India): An empirical Learning on the Role of Mythology and Folklore in Conservation. In Ranjay K Singh et al Eds " <b>Social-Ecological Diversity &amp; Traditional Food System</b> ". New India Publishing Agency, New Delhi. pp-155-198. 2014.						
<b>Citation indices</b>			<b>All</b>	<b>Since 2013</b>		
Citations			160	160		
3.	<b>Dr. Saikat Kumar Jana</b>	1. Redox-active Nanoceria depolarize mitochondrial membrane of human colon cancer cells	Journal of Nanoparticle Research	16: 2441	DOI: 10.1007/s11051-014-2441-z	2014
		2. Letrozole and Curcumin Loaded-PLGA Nanoparticles: A Therapeutic Strategy for Endometriosis	Journal of Nanomedicine Biotherapeutic Discovery	4: 123	doi: 10.4172/2155-983X.1000123.2014	2014
		3. Proinflammatory cytokines induced altered expression of	Fertility and sterility	99	179-187	2013

Sl. No.	Name of the Faculty	Title of the paper	Name of the Journal	Volume	Page	Year
		cyclooxygenase-2 gene results in unreceptive endometrium in women with idiopathic recurrent spontaneous miscarriage				
		4. 1H NMR based targeted metabolite profiling for understanding the complex relationship connecting oxidative stress with endometriosis	BioMed research international	2013 (2013), Article ID 329058	dx.doi.org /10.1155 /2013 /329058	2013
		5. HOXA-11 mediated dysregulation of matrix remodeling adversely affects implantation in women with endometriosis	Journal of Assisted Reproduction and Genetics	30(11)	1505-1512	2013
		6. Upper control limit of reactive oxygen species in follicular fluid beyond which viable embryo formation is not favorable	Reproductive Toxicology	29	447-451	2010
		7. Studies on the phenolic profiling, anti-oxidant and cytotoxic activity of Indian honey: in vitro evaluation	Natural product research	24	1295-1306	2010
		8. Effect of follicular fluid oxidative stress on meiotic spindle formation in infertile women with polycystic ovarian syndrome	Gynecol Obstet Invest	69	197-202	2010
		9. Cut-off value of reactive oxygen species for predicting semen quality and fertilization outcome	Systems biology in reproductive medicine	54	47-54	2008
		10. Does oral antioxidant administration improve semen parameters in infertile men.	Systems in Medicine and Biology IEEE Xplore	Print ISBN: 978-1-61284-039-0	402-404	2010

Sl. No.	Name of the Faculty	Title of the paper	Name of the Journal	Volume	Page	Year
		11. A low cost short-term sperm preservation procedure for double IUI in controlled ovarian hyperstimulation cycles	Systems in Medicine and Biology IEEE Xplore	Print ISBN: 978-1-61284-039-0	227-230	2010
<b>Books chapter</b>						
1) Jana SK, Banerjee P, Shyam T, Chaudhury K. Alteration in endometrial remodeling a cause for implantation failure in endometriosis. INTECH OPEN ACCESS "Endometriosis", ISBN 979-953-307-888-4 (2011).						
<b>Patent</b>						
Biswas P, Jana SK, Chaudhury K. Biodegradable polymer encapsulated Besifloxacin nanoparticles. Ref No./application No. 9/ KOL/2014 (Provisional Patent)						
		<b>Citation indices</b>	<b>All</b>	<b>Since 2010</b>		
		Citations	163	150		
		h-index	7	7		
		i10-index	6	5		

(\* Name of the Authors mentioned in **BOLD** are the faculty members of **BT** department of NIT-Arunachal Pradesh

### Projects

#### (A) Sanctioned Projects

Start up project grant from DST

#### (B) Submitted Projects

3 projects are submitted to DBT, 4 in ICMR, 1 in MOEF

### 5.16. Department of Mathematics

The department of Mathematics was established first as the department of Basic Science and Humanities in the year 2010. The department of Mathematics of this Institute has come into existence from summer of 2014 and aims at being a centre of excellence in Mathematics and Computing and is been vigorously engaged in both research and teaching. The vision of the department is not only to transform young people to competent and motivated professionals but also to contribute to the development of the nation, through research, consultancy and training activities. The department has at present four energetic and dedicated faculty members.

Having started the Ph.D. programme in 2013, the department has proposed to commence 2-year M. S. programme in Mathematics and Computing; M. S. programme in Engineering Mathematics Research and M. S. programme in Mathematical Physics from 2015. The department also supports the engineering departments by offering core and advance courses in mathematics at the undergraduate B. Tech. level in various semesters.

### Curriculum

Apart from carrying out rigorous research, the department aids the technical and management sciences by teaching, carrying out collaborative research and conducting various conferences.

The subjects handled by the department of Mathematics are

- i. Engineering Mathematics – I, II & III
- ii. Stochastic Processes
- iii. Probability and Statistics
- iv. Numerical Methods
- v. Operations Research
- vi. Advanced Engineering Mathematics
- vii. Discrete Mathematics
- viii. M.S. Programme in Mathematics & Computing, Mathematical Physics.

### Innovative Practices

- i. Practical Hands on lab
- ii. Seminars
- iii. Industrial oriented courses
- iv. Real time problem solving training

### Research Assistants/Summer Internships and Student Projects

- i. Students are encouraged to take up industrial problems and solutions are attempted through Mathematics they study in the course.
- ii. Bright aspiring students are recommended to undergo internship in renowned institutes in India and Abroad.

### Faculty Members

The department has well-versed faculties in all the fields of Mathematics. The department has the distinction of having hundred percent doctorates. The faculties keep with changing pace of the application and industrial world and accordingly impart knowledge to the students.

Sl. No.	Name of the faculty	Date of joining	Designation	Area of Specialization
i	Dr. A. Vanav Kumar	15.07.2014	Assistant Prof.	Computational Fluid Dynamics
ii	Dr. Utpal Kumar Saha	27.01.2012	Assistant Prof.	Special Function
iii	Dr. K. Ratan Singh	31.01.2012	Assistant Prof.	Graph Theory
iv	Dr. Susanta Maity	16.09.2013	Assistant Prof.	Fluid Mechanics
v	Dr. Shakti Prasad	05.01.2016	Assistant Prof.	Sampling Theory

### Students' strength

	Boys	Girls	Total
M.S. 1st year, 2015-16 in Mathematics & Computation	1	0	1
M.S. 1st year, 2015-2016, Mathematical Physics	2	0	2
Ph.D.	0	0	0
Total	03	0	03

### Expert Faculty from reputed Institutions

Sl. No.	Name of the Experts
i	Prof. D. K. Sinha, Former Vice-Chancellor, Visva-Bharati University.
ii	Prof. B. S. Dandapat, Retired Professor, PAMU, ISI, Kolkata

### Workshop/Seminars organized by Department of Mathematics in 2015-16 session

- Department of Mathematics and Department of Physics & Chemistry have jointly organized one day research seminar on "Application of Basic Science in Engineering & Technology" on 7th November, 2015.

### Seminars, Symposia and Workshops participated by the faculty members

1. Attended "Two days workshop on Teaching Methodology of Mathematics" held at Department of Mathematics, NERIST, Nirjuli, Arunachal Pradesh from 21-22 Nov., 2015
2. Presented a talk on "On a class of Intersection graph – selfgraphoidal graph" in one day research seminar on "Application of Basic Science in Engineering & Technology" on 7th November, 2015.

### List of Publications by Faculty Members in the last few years

1. **S. Maity**, "Unsteady flow of thin nanoliquid film over a stretching sheet in presence of thermal radiation," The European Physical Journal Plus, radiation, 131 (02) (1-15), 2016.

2. **S. Maity**, Y. Ghatani and B. S. Dandapat, Thermocapillary Flow of a Thin Nanoliquid Film Over an Unsteady Stretching Sheet, *ASME J of Heat Transfer*, Vol-138, 402401(1-8), 2016.
3. D. S. Sankar, A. K. Nagar and **A. V. Kumar**, Mathematical Analysis of Single and Two-Phase Flow of Blood in Narrow Arteries with Multiple Constrictions, *Journal of Applied Fluid Mechanics*, Vol. 8, No. 4, pp. 871-883, 2016.
4. **S. Maity** and P. K. Swain, Unsteady flow of thin liquid film over a porous stretching sheet in presence transverse magnetic field, *International Journal on Current Science & Technology*, Vol. 2, Issue No. 2, PP. 291, 2014.
5. P. K. Swain, K. L. Panigrahi and **S. Maity**: "Supersymmetric D-brane Solutions in Godel Universe," *International Journal on Current Science & Technology*, Vol. 2, Issue No. 2, pp. 281, 2014
6. **S. Maity**, Thermocapillary flow of thin liquid film over a porous stretching sheet in presence of suction/injection, *International Journal of Heat and Mass Transfer*, Vol-70, pp. 819-826, 2014.
7. **U. K. Saha**, On Some Unified Integrals, *International Journal on Current Science and Technology*, 2014.
8. P. K. Das and **K. R. Singh**, A Survey On a Class of Intersection Graph: Self-graphoidal Graph, *The 2015 AMMCS-CAIMS Congress, Waterloo, Ontario, Canada from June 7-12, 2015*.
9. **K. R. Singh** and P. K. Das, Path double covers of a graph, *International Congress of Mathematicians 2014, Seoul, Korea from August 13 to 21, 2014*.
10. P. K. Das and **K. R. Singh**, Graphoidal covering number for the class of graphs G with ??????? SYLWAN, 158(5) (2014), 314-323.
11. **U. K. Saha** and B. K. Dutta, Approximate Analytical Solutions to Fractional Integro-Differential Equations, *International Journal on Current Science and Technology*, Vol. 1, No. 2 (2013), pp.227-233.
12. B. S. Dandapat and **S. Maity**, Flow of thin liquid film over a rough rotating disk, *Proceeding of National Seminar on Mathematical Modelling of Natural Phenomena*, ISBN 978-93-80663-33-5, (2012), 90-95
13. V. Kumaran, **A. Vanav Kumar** and I. Pop, Transition of boundary layer flow past a stretching sheet due to a step change in applied constant mass flux, *Acta Mech*, 216, 139-145 (2011).

14. V. Kumaran, A.K. Banerjee, **A. Vanav Kumar** and **I. Pop**, Unsteady MHD flow and heat transfer with viscous dissipation past a stretching sheet, *International Communications in Heat and Mass Transfer*, 38 (2011) 335–339.
15. B. K. Dutta, L. K. Arora, **U. K. Saha**, On Generalized Fractional Integral Operators and the Multivariable H-Function., *Advances in Theoretical and Applied Mathematics*, 6 (4) (2011), 423-434.
16. Singh, G. N., Majhi, D., **Prasad, S.** and Homa, F. (2015): Effective rotation patterns under non-response in two-occasion successive sampling, *Communications in Statistics-Theory & Methods (Taylor & Francis)*, Vol. 44, No. 6, pp. 1182-1195.
17. Singh, G. N. and **Prasad, S.** (2014): Some estimation procedures using a linear model in successive sampling, *Communications in Statistics-Theory & Methods (Taylor & Francis)*, DOI: 10.1080/03610926.2014.887116.

(\* )Name of the Authors mentioned in **BOLD** are the faculty members of **Mathematics** department, NIT-Arunachal Pradesh

#### 5.17. Department of Physics, Chemistry and Electronic Science

The department of Physics, Chemistry and Electronic Science has been established right at the inception of the Institute in 2010. At present, the department comprises of Physics, Chemistry and Electronic Science. The Department has a rich heritage of qualified teaching and research works in the field of aforesaid subjects. The department got two sponsored projects funded by external agencies (one from DST and one from ICMR). Besides this, the department also has two start-up projects funded by NIT Arunachal Pradesh. The department has two JRFs. The department started one MS programme in 'Mathematical Physics' in collaboration with the department of Mathematics. The faculty members of the department have been actively involved in departmental activities and participating in administrative works as well including developmental activities of the Institute for its future growth; with the objectives of imparting theoretical and practical knowledge to the students in the area of Physics, Chemistry and Electronic Science and providing teaching and learning to make the students acquainted with advanced science and technology. The objective is to inject the future scope and the research direction encompassing all the disciplines while making students competent towards research and development in advanced science and technology. Upon completion of the subjects, the learning outcomes will train the students who will become

Physicists, Chemists, Scientists and Engineers. Students will be skilled both theoretically and practically to do operation, control and maintenance of works in all the disciplines. Students will also be substantially prepared to take up prospective research assignments.

### Laboratories

#### (i) Chemistry Laboratory



#### (ii) Engineering Physics Laboratory



Two laboratories for MS programme have been proposed:

- (i) Modern Physics Laboratory
- (ii) Optics Laboratory

### Curriculum

Apart from carrying out rigorous research the department aids the technical and management sciences by teaching, carrying out collaborative research and conducting various conferences.

Besides Departmental subjects of Biotechnology, the other subjects handled by PCB department are:

- (a) \*Engineering Physics I & II
  - (b) \*Engineering Chemistry
  - (c) \*Environmental Science
  - (d) Quantum Mechanics
  - (e) Classical Mechanics
  - (f) Electrodynamics
  - (g) Solid state physics
- (\*) marked are common for all branches of B. Tech first year students.

### Faculty Members

Sl. No.	Name of the faculty	Date of joining	Designation	Area of Specialization
i	Dr. Pinaki Chakraborty	01.12.2011	Asst. Professor	Microelectronics
ii	Dr. Naba Kumar Pramanik	29.12.2011	Asst. Professor	Inorganic Chemistry
iii	Dr. Ananta Kumar Atta	03.09.2013	Asst. Professor	Organic Chemistry Carbohydrates)
iv	Dr. Pratap Kumar Swain	18.10.2013	Asst. Professor	Theoretical Particle Physics (String Theory)
v	Dr. T. D. Das	20.04.2015	Asst. Professor	Microelectronics

### List of Publications by Faculty Members in the last few years

#### A. International Journals:

1. D. K. Das, **P. K. Swain** and S. Sahoo, "Graphene in Turbine Blades," *Mod. Phys. Lett. B* (2016) (Accepted).
2. D.P. Samajdar, **T. D. Das** and S. Dhar, "Calculation of Valence Band Structure and Band Dispersion in Indium containing III–V Bismides by k.p method," *Computational Materials Science* **111**, 497 (2016).
3. D.P. Samajdar, **T. D. Das** and S. Dhar, "Valence Band Anticrossing model for  $GaSb_{1-x}Bi_x$  and  $GaP_{1-x}Bi_x$  using k.p Method," *Material Science in Semiconductor Processing*, **40**, 539 (2015).

4. J H Hong, **A. K. Atta**, K. B. Jung, S. B. Kim, J. Heo and D. G. Cho, "Conformationally Locked Tolans,  $\beta$ -sheet Structures and Photophysical Properties," *Organic Letters*, Vol. 17, 6222-6225 (2015).
5. S. Das, A. S. Sharma, **T. D. Das**, and S. Dhar, "Dependence of heavy hole exciton binding energy and the Strain distribution in GaAs<sub>1-x</sub>Bi<sub>x</sub>/GaAs Finite Spherical Quantum Dots on Bi content in the material," *Superlattices and Microstructures*, **86**, 221 (2015).
6. **S. Maity, S. K. Metya, C. T. Bhunia, P. Chakraborty** and P. P. Sahu, "Improvement of front side contact and quantum efficiency of c-Si solar cell through light induced plating," *Optical and Quantum Electronics*, **47**, 3391 (2015).
7. **N. Pramanik, A. K. Atta** and Alpana Mahapatra, "Synthesis of Chitosan Phosphate Grafted Nanosized Hydroxyapatite and its Characterization," *International Journal on Current Science & Technology*, Vol.3, 398 (2015).
8. **P. K. Swain**, K. L. Panigrahi & **S. Maity**, "Supersymmetric D-brane solutions in Godel Universe," *International Journal on Current Science & Technology*, **Vol. 2**, 319-329 (2015)
9. **A. K. Atta** and **N. Pramanik**, "Carbohydrate based chemosensor for selective detection of Hg<sup>2+</sup> ion," *International Journal on Current Science & Technology*, **Vol.2**, 331-334 (2015).
10. **S. Maity and P. K. Swain**, "Unsteady flow of thin liquid film over a porous Stretching Sheet in Presence of Transverse Magnetic field," *International Journal on Current Science & Technology*, **Vol.2**, 335-341 (2015).

#### **B. Conferences:**

1. A. Sharma and **T. D. Das** "MEH – PPV Thickness Variations for High Luminescent Power OLED" Presented at IWPSD 2015, IISC, Bangalore.
2. **T. D. Das**, D. P. Samajdar, M. K. Bhowal and S. Dhar "Liquid Phase Epitaxial Growth and Low Temperature Photoluminescence of InPBi and GaSbBi," Presented at IWPSD2015, IISC, Bangalore

(\* ) Name of the Authors mentioned in **BOLD** are the faculty members of **PCES** department of NIT-Arunachal Pradesh.

## Projects

### (A) List of Sanctioned Sponsored (External Agency) Projects

Sl. No.	Project Title	Investigators	Name of Funding Agencies	Amount (Rs.)
1	Design and synthesis of carbohydrate based sensors for efficient determinations of heavy metallons	PI: Dr. A. K. Atta	DST, Govt. of India.	<b>26,00,000.00</b>
2	Doxorubicin loaded hydroxyapatite nanoparticles: a new strategy for osteosarcoma	PI: Dr. N. Pramanik Co-PI: Dr. A. K. Atta	ICMR, Govt. of India	<b>17,00,000.00</b>

### B. List of Start-up Projects:

Sl. No.	Project Title	Investigators	Name of Funding Agencies	Amount (Rs.)
1	CNT to enhance the performance of gas sensor	PI: Dr. P. Chakraborty Co-PI: Sri S. Maity Co-PI: Dr. P. K. Swain	NIT Arunachal Pradesh	<b>5,00,000.00</b>
2	Inorganic-Organic Hybrid Composite Materials: Synthesis, Surface Modification, Characterization and Biomedical Studies	PI: Dr. N. Pramanik Co-PI: Dr. A. K. Atta	NIT Arunachal Pradesh	<b>5,00,000.00</b>

### C. List of Submitted Projects:

Sl. No.	Project Title	Investigators	Name of Funding Agencies	Amount (Rs.)
1	Gauge-Gravity Duality in Diverse String Backgrounds	PI: Dr. P. K. Swain	DST	<b>17,20,800.00</b>
2	Sugar Derived Unsaturated Lactones: Synthesis and Intermediates for Amino sugars, Amino acids, Hetrocycles and Heavy metal sensors	PI: Dr. A. K. Atta Co-PI: Dr. N. Pramanik, Co-PI: Dr. D. J. Sanghvi, College of Engineering, Mumbai	CSIR	<b>14,36,000.00</b>

Sl. No.	Project Title	Investigators	Name of Funding Agencies	Amount (Rs.)
3	D-brane dynamics and its application in Blackhole Physics & Cosmology	PI: Dr. P. K. Swain	NIT Arunachal Pradesh	<b>3,00,000.00</b>

### 5.18. Department of Management and Humanities

The Department of Management and Humanities was established first as the Department of Basic Science and Humanities in the year 2010. The Department was reorganized with the introduction of new courses, and separating basic sciences such as Mathematics and Life Sciences from Humanities. The department was renamed as Management and Humanities thereafter. There are a total of four faculty members serving in the department.

The Department provides courses that are aimed at producing students who are competent not only in the field of science, technology and engineering; but also possessing good communication skills, strong leadership qualities, analytical thinking ability, managerial skills and most importantly, are value laden. It provides a sociological, humanistic and an ethical dimension to education at the Institution.

The Humanities wing provides interdisciplinary courses such as Communications Skills, Historiography of Science and Technology, Engineering Ethics and IPR, Behavioural Science, Development Communication etc. at undergraduate and postgraduate level. Besides these, the wing also offers Foreign Language courses such as French, German and Chinese at foundation level. The Management wing offers various courses to develop managerial skills in the students, such as Industrial Management, Disaster Management, Sustainable Development, Entrepreneurship etc.

It has also started the Online MBA programme providing an opportunity for students and working professionals to pursue their degree in Management. The online MBA program is a two year (Four semesters) programme with industry-internship resulting in a structured project at the end of each year. Students are required to complete few core subjects, inclusive of elective subjects.

The Department of Management and Humanities has in its possession a state of art Language Laboratory set up to provide a scientific way of learning spoken English, foreign languages and communication skills. Also, the laboratory is well equipped to cater to the needs of the students to develop and improve their soft skills.

### Faculty Members

Sl. No.	Name of the faculty	Date of joining	Designation	Area of Specialization
i	Dr. Mihir Kumar Shome	27.12.2013	Associate Prof.	Human Resource Management
ii	Ms.Narang Rija	28.03.2012	Assistant Prof.	Folk lore
iii	Dr. Moirangthem Momocha Singh	08.02.2016	Assistant Prof.	Management
iv	Dr. K. Vijaya Kumar	27.02.2016	Assistant Prof.	English for specific purposes

### Students' strength

	Boys	Girls	Total
M.Tech in ATEP(1st year & 2nd year)	10	1	11
Online MBA	15	4	19
*Ph.D	2	2	4
<b>Total</b>	<b>27</b>	<b>7</b>	<b>34</b>

\*The no. of Ph.D students includes the internal faculty members who are pursuing their Ph.D (part-time) at NIT Arunachal Pradesh.

### Expert Faculty from reputed Institutions

Sl. No.	Name of the Experts
i	Prof. Jibon Chakraborty, Adjunct Professor, Department of Basic sciences & Humanities, Kolkata
ii	Prof. Gulab Jha, Department of Foreign Languages, Guwahati University
iii	Dr. S. K. Dutta, Professor, National Institute of Rural Development, Guwahati
iv	Pranab Sharma, EDP , IIE, Guwahati
v	Subhabrata Barman, HIT, West Bengal
vi	Sonjib Mitra, AOT, West Bengal University, Kolkata
vii	Udahab Bharali, Entrepreneur, North Lakhimpur, Assam

### Laboratory Development

The Department is equipped with the following Laboratories to conduct practice classes as per academic schedule:



1. Language Laboratory
2. Computer Laboratory for M. Tech students (ATEP)

### List of Publications by Faculty Members in the last few years

1. **Shome, M. K.**, Kini, S. And Bhardwaj, G., "Group atmosphere and Role characteristics: An interdependency approach in engineers of three large scale public sector organizations, IJCST, Vol. 3, p-374-383 (2015).
2. Mukherjee, D and **Shome, M. K.**: "A Study on Feasibility of Potential E-Learning initiatives in Secondary and Higher Secondary Schools in Greater Noida" by Excel publication, 2013.
3. **Shome, M. K.** and Luthra, R.: "A study of current Research Status in Indian Universities," In Rajive Kumar and Narendra Kumar (Eds.) Higher Education in India, Atlantic Publisher, New Delhi, 2013.
4. **Shome, M. K.** and Luthra, R.: "Status of women empowerment in India," In Jayanta Mete and AjitMondal (Eds.), Emerging issues on Women Empowerment. KunalPublisher , New Delhi, 2013.
5. **Shome, M. K.** and Mukherjee, D. (Accepted 2014): A study of present scenario in Indian universities, Fall 2014 issue of AUJSRI
6. **Shome, M. K.** and Luthra, D.: "Perception of Work Environment in a Private Engineering College," A Study of Gender Differences, Race, Gender & Class journal, Volume 21, issues 1-2, 2014.
7. **Shome, M. K.** (Accepted) "Corporate Social Responsibility in India-Issues and challenges" to be published by Cambridge University Press.

(\*)Name of the Authors mentioned in **BOLD** are the faculty members of **Management and Humanities** department of NIT-Arunachal Pradesh.

The Institute is honoured to have Distinguished Professors (Visiting) and their details are as under:

	<p style="text-align: center;"><b>Prof. B. P. Sinha</b> Professor Advanced Computing and Microelectronics Unit, Indian Statistical Institute, Kolkata, India</p>
	<p style="text-align: center;"><b>Prof. S. L. Maskara</b> Former Professor Electronics and Electrical Communication Engineering, Indian Institute of Technology-Kharagpur, India</p>



**Prof. S. C. Dutta Roy**

Former Professor  
Department of Electrical Engineering,  
Indian Institute of Technology-Delhi, India



**Prof. D. P. Kothari**

Former Dy Director  
Indian Institute of Technology-Delhi, India



**Prof. Bibek Bandyopadhyay**

Former Director, Solar Energy Centre  
Ministry of New and Renewable Energy, Government of India  
Electronics and Electrical Communication Engineering  
Indian Institute of Technology - Kharagpur, India

**5.19. Academic growth plan of the Institute is as follows:**

Level	Department	Specialization	Expected Year of Starting	Expected Intake
B.Tech	Food Technology	Food Technology	2017-18	30
	Spacecraft Engineering	Spacecraft Engineering	2017-18	30
M.Tech&	Mechanical Engineering	Mechanical Engineering	2016-17	2
M.Arch	Bio-technology	Bio-Technology	2016-17	20
	Civil Engineering	Civil Engineering	2016-17	20
M.B.A.	Mathematics, Management and Humanities	HR, Finance, IT (System)	2017-18	30
MS	Electronic Science	Electronics	2016-17	20

**5.19 Present Faculty Position (Department-wise)—as on 31.03.2014**

Department	No. of Faculty			Faculty with Ph.D degree		
	No. of Male Faculty	No. of Female Faculty	Total	No. of Faculty with Ph.D	No. of Faculty received Ph.D from abroad	No. of faculty currently pursuing Ph.D
Computer Science & Engineering	08	00	08	03	00	05
Electronics & Communication Engineering	06	02	08	02	00	06
Electrical Engineering	07	00	07	01	00	05
Civil Engineering	04	02	06	02	00	02
Mechanical Engineering	04	01	05	03	00	02
Chemistry	02	00	02	02	00	00
Physics	03	00	03	03	00	00
Mathematics	05	00	05	05	00	00
Bio-technology	01	02	03	03	00	00
Management and Humanities	03	01	04	03	00	01



## 6. RESEARCH ACTIVITIES

### 6.0. Introduction

During the period under report, substantial research activities have been undertaken by the faculty members of the Institute and a summary of the same is given in the subsequent paragraphs.

### 6.1. Research Programmes

#### Doctoral Programme

During the academic year 2015-16, 18 research scholars (including two internal faculties) have registered for the Ph.D. programme in NIT Arunachal Pradesh. The complete list of research scholars is given here under:

#### A. The List of Research Scholars joined enrolled during this period:

Sl. No.	Name of Scholar	Department	Supervisor	Category	Mode
1	Mrs. Narang Rija	MH	Dr. M. K. Shome	ST	Part-time (Internal Faculty)
2	Sri Sandip Kumar Mandal	ME	Dr. Dipak Sen	GEN	Part-time (Internal Faculty)
3	Sri Pralay Kumar Samanta	MH	Dr. M. K. Shome & Dr. N. Pramanik	GEN	Part-time (Internal Employee)
4	Mrs. Radha Kumari Pandey	MH	Dr. M. K. Shome	GEN	Part-time (Internal Employee)
5	Sri Indrajit Kumar	MH	Dr. M. K. Shome	GEN	Part-time (Guest Faculty)
6	Sri Sanjit Ningthoujam	CSE	Dr. S. K. Chakraborty & Prof. C. T. Bhunia	SC	Full time PhD under Visvesvaraya scheme
7	Sri Argha Sarkar	CSE	Dr. S. Chakraborty Dr. S. Maity & Dr. P. Chakraborty	GEN	''
8	MS. Chukhu Chunka	CSE	Prof. C. T. Bhunia & Dr. R. S. Goswami	ST	''
9	Sri Sayan Sikdar	CSE	Dr. S. K. Metya & Dr. R. S. Gowsami	SC	''
10	Sri Pritam Bhattachary	ECE	Dr. T. D. Das Sri . A. Majumdar Prof. Roy Pillai	GEN	''

Sl. No.	Name of Scholar	Department	Supervisor	Category	Mode
11	Sri Deboraj Muchahary	ECE	Dr. S. K. Metya Dr. S. Maity	ST	„
12	Ms. Mayauri Kundu	CSE	Dr. S. Chakraborty	GEN	Part time PhD under Visvesvaraya scheme
13	Sri Papul Changmi	ECE	Dr. S. K. Metya & Dr. S. Maity	GEN	„
14	Sri Sanjib Kalita	ECE	Dr. S. Mukhapadhyia	GEN	„
15	Sri Prasjyoti Borah	CSE	Dr. D. Gupta	ST	„
16	Sri Bholanath Dolai	PCES	Dr. A. K. Atta & Dr. N. Pramanik	OBC	JRF under DST project
17	Sri Madhusudan Maity	ECE	Dr. S. Chakraborty Prof. S. Sen	GEN	JRF under SMDP C2SD scheme
18	Sri Suraj K. Saw	ECE	Sri A. Majumdar,	OBC	„

### B. Thesis Awarded/ Submitted

Sl. No.	Name of Scholar	Department	Supervisor	Category	Thesis Awarded/ Submitted
1	Sri S. Chakraborty	CSE	Prof. C. T. Bhunia	GEN	Degree awarded on 25.05.2015
2	Sri R. S. Goswami,	CSE	Prof. C. T. Bhunia	GEN	
3	Sri S. Maity	ECE	Prof. C. T. Bhunia & Prof. P. P. Sahu	GEN	Thesis submitted

### 6.2. Research Projects:

#### A. The lists of externally funded sponsored projects:

Sl No.	Project Title	Investigators	Name of Funding Agencies	Sanctioned Amount (lakh)	Received Amounts till date (lakh)
1	Design and synthesis of carbohydrate based sensors for efficient determinations of heavy metal ions	<b>PI:</b> Dr. A. K. Atta (Chemistry)	DST, Govt. of India.	<b>25.26</b>	<b>14.50</b>

SI No.	Project Title	Investigators	Name of Funding Agencies	Sanctioned Amount (lakh)	Received Amounts till date (lakh)
2	Doxorubicin loaded hydroxyapatite nanoparticles: a new strategy for osteosarcoma	<b>PI:</b> Dr. N. Pramanik (Chemistry) <b>Co-PI:</b> Dr. A. K. Atta (Chemistry)	ICMR, Govt. of India	15.226	3.9095

### B. The lists of externally funded Start-up Grants:

SI No.	Project Title	Investigators	Name of Funding Agencies	Sanctioned Amount (lakh)	Received Amounts till date (lakh)
1	Special Manpower Development Programme in the area of VLSI Design & related Software (SMDP-II)	Sri Alak Majumadar (ECE) Dr. S. K. Chakaraborty (CSE)	DIT, MCIT, Govt. of India	16.95	16.95
2	Visvesvaraya PhD scheme	Dr. R. S. Goswami, Nodal Officer	DIT, MCIT, Govt. of India	9.75	9.75
3	Start up Centre at NIT Arunachal Pardseh	Dr. P. Chakraborty, (Physics) & Dr. S. K. Jana (Biotech)	DST & MHRD, Govt. of India	1.5 core for 3years i.e 50 Lakh for each year	-

## C. The lists of Start-up projects (Sponsored by NIT Arunachal Pradesh)

Sl No.	Project Title	Investigators	Department	Sanctioned amount (in Lakh)
1	Design & Implementation Of Test, Run And Control Of Bldc Motor Using Rechargeable Battery	Shri Rajen Pudur Prof. S. Chatterjee, NERIST and Shri Brajagopal Datta	Electrical Engineering	5.0
2	Studies of unsteady thin nanoliquid film development on a stretching surface	Dr. Susanta Maity Dr. A. V. Kumar & Dr. K. R. Singh	Mathematics	5.0
3	Inorganic-organic Hybrid Composite Materials: synthesis, surface Modification, Characterization and Biomedical Studies	Dr. N. K. Pramanik Dr. A. K. Atta	Chemistry	5.0
4	CNT to enhance the performance of gas Sensor	Shri Santanu Maity Dr. P. Chakraborty & Dr. P. K. Swain	Physics	5.0
5	Design of Solar Electric Bicycle System	Dr. Tushar Dhabal	Electronic Science	5.0
6	Combined induced and forced convection cooling of electronic Chip in a channel	Dr. Dipak Sen Dr. A. Giri, NERIST & Dr. S. Mondal	Mechanical Engineering	5.0
7	Study and Analysis on New Technique "Key Variation with Noise Burst Bit (KVNBB)" in Automatic Variable Key (AVK) in Cryptography	Dr. Rajat S. Goswami Sri M. P. Dutta & Dr. S. K. Chakraborty	CSE	3.5
8	New Simulated Annealing based Optimal Tunning of Fractional Order Proportional - Integral - Derivative (PID) Controller	Shri Santanu Chatterjee Dr. U.K. Saha	Math + EE	5.0

**D. The Lists of projects submitted to various externally agencies:**

Sl No.	Project Title	Investigators	Submitted to	Amount (lakh)
1	Gauge-Gravity Duality in Diverse String Backgrounds	PI: Dr. P. K. Swain (Physics)	DST	17.208
2	Sugar Derived Unsaturated Lactones: Synthesis and Intermediates for Amino sugars, Amino acids, Hetrocycles and Heavy metal sensors	PI: Dr. A. K. Atta (Chemistry) Co-PI: Dr. N. Pramanik (Chemistry), Co-PI: Prof. A. Mahapatra, D. J. Sanghvi, College of Engineering, Mumbai	CSIR	14.36
3	Fabrication of micro heater and inter digitated electrodes on silison platform for low power integrated gas sensor to detec toxic gases in coal mine and manhole	PI: Dr. S. Maity (ECE)	DIT, MCIT, GOI	403.608
4	Amino sugars, amino acids, heavy metal sensors and other valuable compounds from highly reactive sugar derived unsaturated lactones	PI: Dr. A. K. Atta (Chemistry)	DST, Gol	46.75
5	Implementation and Physical realization of Improved Grid Conveter for Photovoltaic application with ancillary features	PI: Sri S. Chatterjee (EE)	DST, Gol	35
6	Development of Efficient Strategies for Energy Management in Hybrid Electric Vehicles	PI: Dr. S. P. Panigrahi (EE)	DST, Gol	19.2
7	Impact Assessment of Ranganadi HEP	PI: Dr. K. R. Singh (MATH)	NEC, India	4.02
8	Peer-to-peer Mobile Chanel Modeling for Hilly Areas of north East	PI: Dr. S. P. Panigrahi (EE)	DST, Gol	22.2

Sl No.	Project Title	Investigators	Submitted to	Amount (lakh)
9	Development of 100 kW Contact less Inductive Power transfer Based Grid Interactive Commercially Viable Smart Photovoltaic Inverter with grid Supportive Ancillary Features	PI: Sri S. Chatterjee (EE)	DST, Gol	78
10	Surface Modification by using micro/nano-fluids as metal working fluids and to study the effects of micro-structure on the mechanical properties of the substrate	PI: Sri S. Das (Mechanical)	DST, Gol	30.75
11	QCA Logic Circuit Design in Application to Health Care and Point of Care Device Design for Elderly People	PI: Dr. S. K. Chakraborty (CSE)	DST, Gol	50.052
12	Exploration and Identification of the Microbial and chemical Hazards present in drinking-water of Arunachal Pradesh aiming to supply the safe drinking water	PI: Dr K. Lhouvm (Bio-tech)	DBT, GOI	99.47
13	Proteomic biomarkers based sensing device for minimally invasive diagnosis of endometriosis	PI: Dr. S. K. Jana (Bio-tech)	DBT, GOI	137
14	Pharmacognostic, nutritional and Molecular Characterization of the panax species and Landraces (Araliaceae) from the Eastern Himalayan Region, India for Addressing Medicinal, Trade and Regional Livelihood Security Issues	PI: Dr. P. Hui (Bio-tech)	DBT, GOI	123

Sl No.	Project Title	Investigators	Submitted to	Amount (lakh)
15	Ietrozole and Curcumin Loaded-PLGA Nanoparticles: A therapeutic strategy for breast cancer	PI: Dr. S. K. Jana (Bio-tech)	ICMR, GOI	19.74
16	Innovative fabrication of micro fluidic biomedical devices as laboratory-on-a-chip systems for blood filtering and detection of blood analytes using integrated biosensors for industrial healthcare applications	PI: Dr. S Mukhopadhyay (ECE)	IMPRINT, MHRD, Gol	438
17	Analysis and implementation of wind-hydro (50 KW) micro energy system for Pasighat, Arunachal Pardesh	PI: Sri R. Pudur (EE)	IMPRINT, MHRD, Gol	306
18	Experimental and Modeling investigations on transport of nitrogen species from agricultural field in Arunachal Pradesh	PI: Dr. M. Berlin (CE)	IMPRINT, MHRD, Gol	52.44
19	Prototype Development of Multipurpose Digital Card with Biometric Security and Tokenization Scheme for NFC based peer to peer Money Transferred all Identity Needs	PI: Sri A. Majumdar (ECE)	IMPRINT, MHRD, Gol	90.21
20	Insight into putative PF11_0189 from P.falciparum genome; a potential tool for drug development and diagnostic kit	PI: Dr K. Lhouvm (Bio-tech)	IMPRINT, MHRD, Gol	93.4

### 6.3 List of Publications by our faculty members during 2015-16:

#### 6.3.1: International Journals

1. D. K. Das, **P. K. Swain** and S. Sahoo, "Graphene in Turbine Blades," *Mod. Phys. Lett. B* (2016) (Accepted).
2. D.P. Samajdar, **T. D. Das** and S. Dhar, "Calculation of Valence Band Structure and Band Dispersion in Indium containing III–V Bismides by k.p method," *Computational Materials Science* **111**, 497 (2016).
3. D.P. Samajdar, **T. D. Das** and S. Dhar, "Valence Band Anticrossing model for  $GaSb_{1-x}Bi_x$  and  $GaP_{1-x}Bi_x$  using k.p Method," *Material Science in Semiconductor Processing*, **40**, 539 (2015).
4. J H Hong, **A. K. Atta**, K. B. Jung, S. B. Kim, J. Heo and D. G. Cho, "Conformationally Locked Tolans,  $\alpha$ -sheet Structures and Photophysical Properties," *Organic Letters*, **Vol. 17**, 6222-6225 (2015).
5. S. Das, A. S. Sharma, **T. D. Das**, and S. Dhar, "Dependence of heavy hole exciton binding energy and the Strain distribution in  $GaAs_{1-x}Bi_x$ /GaAs Finite Spherical Quantum Dots on Bi content in the material," *Superlattices and Microstructures*, **86**, 221 (2015).
6. **S. Maity**, **S. K. Metya**, **C. T. Bhunia**, **P. Chakraborty** and P. P. Sahu, "Improvement of front side contact and quantum efficiency of c-Si solar cell through light induced plating," *Optical and Quantum Electronics*, **47**, 3391 (2015).
7. **N. Pramanik**, **A. K. Atta** and Alpana Mahapatra, "Synthesis of Chitosan Phosphate Grafted Nanosized Hydroxyapatite and its Characterization," *International Journal on Current Science & Technology*, Vol.3, 398 (2015).
8. **P. K. Swain**, K. L. Panigrahi & **S. Maity**, " Supersymmetric D-brane solutions in Godel Universe," *International Journal on Current Science & Technology*, **Vol. 2**, 319-329 (2015)
9. **A. K. Atta** and **N. Pramanik**, "Carbohydrate based chemosensor for selective detection of  $Hg^{2+}$  ion," *International Journal on Current Science & Technology*, **Vol.2**, 331-334 (2015).

10. **S. Maity and P. K. Swain**, "Unsteady flow of thin liquid film over a porous Stretching Sheet in Presence of Transverse Magnetic field," *International Journal on Current Science & Technology*, **Vol.2**, 335-341 (2015).
11. **S. Maity**, "Unsteady flow of thin nanoliquid film over a stretching sheet in presence of thermal radiation," *The European Physical Journal Plus*, radiation, 131 (02) (1-15), 2016.
12. **S. Maity**, Y. Ghatani and B. S. Dandapat, Thermocapillary Flow of a Thin Nanoliquid Film Over an Unsteady Stretching Sheet, *ASME J of Heat Transfer* , Vol-138, 402401(1-8), 2016.
13. **A. V. Kumar**, Simulation of Vanilla call option with non-zero dividends using Operator Splitting Method, *Int. Journal on Current Science & Technology*, Vol-3, No.-1, pp. 360-363, (2015).
14. **U. K. Saha**, "Generalized fractional Calculus Operator Involving H-function of several variables," *Int. Journal on Current Science & Technology*, **Vol-3**, No.-2, pp-394, (2015).
15. **Shome, M. K**, Kini, S. And Bhardwaj, G., "Group atmosphere and Role characteristics: An interdependency approach in engineers of three large scale public sector organizations, *IJCST*, Vol. 3, p-374-383 (2015).
16. S. Ningthoujam, **S. K Chakraborty** and **C. T. Bhunia**, "New Investigations of Aggressive Packet Combining Scheme to Reduce Transmission Delay and Three States Markov Model Using Multiple Routes to Increase Throughput", *International Journal of Future Generation Communication and Networking*, Volume: 8, Issue: 5, PP 157-166 2015
17. **S. K. Chakraborty**, **R. S. Goswami** and **C. T. Bhunia**, "A Study to Examine the Superiority of CSAVK, AVK over Conventional Encryption with a Single Key", *International Journal of Security and Its Applications* Vol. 10, No. 2 (2016), pp.279-286 <http://dx.doi.org/10.14257/ijisia.2016.10.2.25>.
18. **K. Sambyo**, **A. K. Saha** and **C.T. Bhunia**, "An Analysis of Header Compression in Network Node", *IUP Journal of Information Technology*, Vol 11, Issue: 4(Dec 2015),PP-57-66.

19. **K. Sambyo, A. K. Saha and C.T. Bhunia**, "Node Skipping Routing", International Journal of Advanced Science and Technology, Vol.85 (2015), pp.1-8.
20. **K. Sambyo, A. K. Saha and C.T. Bhunia**, "Coding Header Compression", International Journal of Advanced Science and Technology, Vol.84 (2015), pp.55-64.
21. **K. Sambyo, A. K. Saha and C.T. Bhunia**, "Analysis of APC and Code of Practice", The International Journal of Applied Engineering Research (IJAER), Volume 10, Number 17 (2015), ISSN 0973-4562, pp 37935-37938.
22. **K. C. Baruah, S. Banerjee, M. P. Dutta and C. T. Bhunia**, "An Improved Biometric-based Multi-server Authentication Scheme Using Smart Card", International Journal of Security and Its Applications, Vol.9, No.1 (2015), pp.397-408.
23. **S. Banerjee, M. P Dutta and C. T. Bhunia** "An Improved Smart Card based Anonymous Multi-Server Remote User Authentication Scheme", International Journal of Smart Home, Volume 9, No 5, 11-22, 2015.
24. **M. P. Dutta, S Banerjee and C. T Bhunia**, "An Approach to Generate 2-Dimensional AVK to Enhance Security of Shared Information", International Journal of Security and Its Applications 9 (10), 147-154, 2015.
25. **K. C. Baruah, S. Banerjee, M. P. Dutta and C. T. Bhunia**, "A New Remote User Authentication Scheme based on Graphical Password using Smart Card", International Journal of Security and Its Applications, Vol.9, No.12 (2015), pp.237-244.
26. **P. Ghosh, A. S. Roy, S. Chaudhury, S. K. Jana, K. Chaudhury and S. Dasgupta**, "Preparation of albumin based nanoparticles for delivery of fisetin and evaluation of its cytotoxic activity," International Journal of Biological Macromolecules, **86**, 408-417 (2016).
27. **A. Sharma, P. Kalita and H. Tag**, "Distribution and phytomedicinal aspects of Paris polyphylla Smith from the Eastern Himalayan Region: A review," TANG [HUMANITAS MEDICINE], **Vol. 5**, Issue. 3, e15 (2015).

28. **R. Pudur** and S. Gao, "Performance Analysis of Savonius Rotor Hydro Generation Scheme with Electronics Load Controller", *Journal of Renewable Energy*, Hindawi, Vol. **2016**, pp- 1-7 (2016).
29. **R. Pudur**, S. Gao, "Savonius rotor based grid connected hydrokinetic power generation scheme", *Sustainable, Energy Grid and Network (SEGAN)*, Elsevier, **Vol-5**, pp- 148-155 (2016).
30. **S. Maity** and **C. T. Bhunia**, "Experimental study of some effective surface parameters of crystalline silicon solar cell for getting better performance", *International Journal of Engineers*, vol. 28, no. 1, pp. 81-87, 2015.
31. N. M. Devi, **S. Maity**, R. Saha and **S. K. Metya**, "RF MEMS and CSRRs-based tunable filter designed for Ku and K bands application", *Cogent Engineering*, **vol. 2**, no. 1, pp. 1083641, (2015).
32. S. Bhattacharjee, **S. Maity**, **S. K. Metya** and **C. T. Bhunia**, "Performance enhancement of implantable medical antenna using differential feed technique", *Engineering Science and Technology, an International*, Elsevier, 2015 (Accepted).
33. R. Saha and **S. Maity**, "Design of Micromachining Based Patch Antenna to Enhance Performances for RFID Tag Application", *Science & Engineering research support Society*, **vol. 8**, no. 1, pp. 261-268, (2015).
34. R. Saha and **S. Maity**, "Ameliorate of bandwidth and return loss of rectangular patch antenna using metamaterial structure for RFID technology", *Journal of Engineering Science & Technology*, **vol. 11**, no. 9, (2015).
35. **A. Majumder**, B. Nath, D. Sarkar and M. Das, "Cycle in Conventional Combinational Circuits: A Comprehensive Survey", *International Journal Advanced Science & Technology*, **vol. 80**, pp.53-78, (2015).
36. A. Kar and **A. Majumder**, "A 43 $\mu$ watt 3-bit Flash ADC designed with TMCC and Bit Referenced Encoder in 180 nm CMOS Technology", *International Journal Advanced Science & Technology*, **vol.79**, pp. 49-60, (2015).

37. R. Khumukcham, **Y. Saring** and **C. T. Bhunia**, "Multiple-route APC scheme for data communication", International Journal of Advanced Electronics & Communication Systems, **vol. 4**, no. 1, (2015).
38. **Y. Bulo** and **C. T. Bhunia**, "New Protocol of Aggressive Packet Combining Scheme: An extension to throughput comparison," International Journal of Computer Applications, USA, **vol.113**, no. 5, pp. 5-8, (2015).
39. **Y. Saring**, **Y. Bulo** and **C. T. Bhunia**, "New modifications of aggressive packet combining scheme with improved performance," International Journal of Applied Engineering Research, **vol.10**, no. 5, 2015.
40. **Y. Bulo**, **Y. Saring** and **C. T. Bhunia**, "Horizontal and vertical packet combining scheme with maximum erroneous bits limit," International Journal of Applied Engineering Research. (Accepted).
41. T. A. Sheikh, J. Borah and **S. Roy**, "Miniaturized Tri-Band BPF using Asymmetric SIRs and DGS," in International Journal of Signal Processing, Image Processing and Pattern Recognition, vol. 8, no. 2, pp. 337-346, 2015.
42. J. Borah, T. A. Sheikh and **S. Roy**, "Effects of Modified Ground Structure on a CPW-fed Patch Antenna", International Journal of Future Generation Communication and Networking, vol. 8, no. 2, pp. 205-212, 2015.
43. J. Borah, T. A. Sheikh, and **S. Roy**. "A Study of Small CPW-fed Dual-band Antenna using Different Dielectrics." International Journal of Advanced Electronics and Communication Systems 4.1,2015.
44. T. A. Sheikh, S. Dutta, S. Baruah, P. Sharma, and **S. Roy**, "Obstacle Avoidance Robot Using LabView." IAES International Journal of Robotics and Automation (IJRA) 4.3 (2015).
45. **S. Roy** and C. T. Bhunia, "On Synthesis of Combinational Logic Circuits." International Journal of Computer Applications 127.1 pp. 21-26, 2015.

**6.3.2: National Journals: Nil****6.3.3: International Conferences**

1. P. K. Das, **K. R. Singh**, A Survey On a Class of Intersection Graph: Self-graphoidal Graph, The 2015 AMMCS–CAIMS Congress, Waterloo, Ontario, Canada from June 7-12, 2015, pp-868.
2. A. Sarkar, **S K Chakraborty**, **S. Maity** and **C T Bhunia**, “Simulation and synthesis of graphene layer for biomedical sensor to detect prostate cancer”, IEEE conference CODEC-2015, Calcutta University, Dec 2015.
3. S. Ningthoujam, **S. K. Chakraborty**, **C.T Bhunia**, “New Basic Scheme for Packet Combining to Achieve Fast Error Correction and Higher Throughput”, International Conference on Computing and Communication Systems (I3CS’15).
4. A. Sarkar, **S K Chakraborty**, **C T Bhunia**, “Different Protocols of Aggressive Packet Combining Scheme with Physical Layer Representation”, IEEE conference CODEC-2015, Calcutta University, Dec 2015.
5. S. Dey and **R. S. Goswami**, “ A Morphological Segmentation and Curve-let Features Extraction on Text Region Classification using SVM”, 2015 IEEE International Conference on Computational Intelligence and Computing Research organised by Vickram College of Engineering, Madurai, Tamil Nadu on 11th December 2015
6. **R. S. Goswami**, **S. Banerjee**, **M. P. Dutta** and **C. T. Bhunia**, “Absolute key variation technique of automatic variable key in cryptography”, Proceedings of the 8th International Conference on Security of Information and Networks (SIN 2015), September 8-10, 2015 Sochi/Russia, PP: 65-67, ACM Publisher.
7. **M. P. Dutta**, **S. Banerjee**, **R. S. Goswami** and **C. T. Bhunia**, “New way of Generating Variable Keys in Achieving Perfect Security”, International Conference on Computing and Communication Systems (I3CS’15), 9<sup>th</sup>-10<sup>th</sup> April, 2015, NEHU.
8. **S. Banerjee**, **M. P Dutta**, and **C. T. Bhunia**, “A perfect dynamic-id and biometric based remote user authentication scheme under multi-server environments using smart cards”, Proceedings of the 8th International Conference on Security of Information and Networks (SIN 2015), Pages 58-64, September 8-10, 2015 Sochi/Russia, ACM Publisher.

9. **M. P. Dutta, S. Banerjee and C. T. Bhunia**, "Generation of Variable Session Keys Based on Piggybacking Strategy", Proc. of The Third Intl. Conf. on Advances in Computing, Electronics and Communication - ACEC 2015, 20-11<sup>th</sup> October, 2015, Zurich, Switzerland, pp. 100-104. DOI: 10.15224/978-1-63248-064-4-21.
10. **S. Banerjee, M. P Dutta and C. T. Bhunia**, "Cryptanalysis and Security Enhancement of an Efficient and Secure Dynamic Id based Remote User Authentication Scheme for Multi-Server Environment", ACM International Conference on Advanced Research in Computer Science Engineering & Technology (ICARCSET-2015), 6-7<sup>th</sup> March, 2015.
11. **M. P. Dutta, S. Banerjee and C. T. Bhunia**, "Two New Schemes to Generate Automatic Variable Key (AVK) to achieve the Perfect Security in Insecure Communication Channel" ACM International Conference on Advanced Research in Computer Science Engineering & Technology (ICARCSET-2015), 6-7<sup>th</sup> March, 2015.
12. **A Sarkar, S K Chakraborty and C T Bhunia**, "Different Protocols of Aggressive Packet Combining Scheme with Physical Layer Representation", IEEE conference CODEC-2015, Calcutta University, Dec 2015.
13. **R. Pudur** and S. Gao, "Performance analysis of Savonius rotor on different aspect ratio for hydropower generation," ICPDEN IEEE International Conference, 10<sup>th</sup> – 11<sup>th</sup> Jan-2015, NERIST.
14. **R. Pudur**, S. Gao, "Single phase power for remote area using Savonius rotor based hydropower generation" IEEE International Conference on Energy, Power and Environment (ICEPE) 12-13, June 2015 NIT Meghalaya.
15. **S. Chatterjee** and S. Chatterjee," Simulation of SRF PLL based Grid Connected Inverter for Photovoltaic Application", ICPDEN IEEE International Conference, 10<sup>th</sup> – 11<sup>th</sup> Jan-2015, NERIST.
16. **D. Shah, S. Chatterjee**, Saibal Chatterjee, Kanchan Bharati, "Tuning Of Fractional Order Pid Controller - A Review", IEEE C2E2 Conference, Kolkata, India, 5<sup>th</sup>-16<sup>th</sup> Jan. 2016.

17. **B. Datta** and S. Chattarjee, "Effects of Electrical Field and Electromagnetic Interference in close proximity and Hybrid operation of HVAC and HVDC Transmission Lines", IEEE C2E2 Conference, Kolkata, India, 5<sup>th</sup> -16<sup>th</sup> Jan. 2016.
18. K. Gogoi, T. Maity, S. Chatterjee and **B. Datta**, "Modelling and Study of Eastern and North-Eastern Regional Grid of India", IEEE C2E2 Conference, Kolkata, India, 5<sup>th</sup> -16<sup>th</sup> Jan. 2016.
19. **S. Maity**, **P. Chakraborty**, R. Raushan, **C. T. Bhunia** and P. P. Sahu, "A compact series resistance model of solar cell for parametric study", ICRCWIP2015, Springer.
20. S. Bhattacharjee and **S. Maity**, "Miniaturization of MEMS based smart patch antennas for bio-medical applications", ICRCWIP2015, Springer.
21. N. M. Devi and **S. Maity**, "Design and optimization of band stop filter using metamaterial structures for k-band applications", ICRCWIP2015, Springer.
22. A. Sarkar, S. Kumar, B. Madhuri and **S. Maity**, "CNT based bio-medical sensor for cancer detection", ICRCWIP2015, Springer.
23. R. Saha, L. Sarkar and **S. Maity**, "A Novel MEMS based frequency tunable rectangular patch antenna", ICRCWIP2015, Springer.
24. R. Saha and **S. Maity**, "Design of O-shape metamaterial structure on rectangular patch antenna for RFID application", Electrical, Electronics, Signals, Communication and Optimization (EESCO), 2015 International Conference on, pp. 1-5, 2015.
25. R. Saha, **S. Maity** and N. Trigunayat, "Enhancement of gain, bandwidth and directivity of a patch antenna by increasing dielectric layers of the substrate through micromachining technique for RFID application", Computer Engineering and Applications (ICACEA), 2015 International Conference on Advances in, pp. 321-324, 2015.
26. A. Sharma and **T. D. Das** "MEH – PPV Thickness Variations for High Luminescent Power OLED" Presented at IWPSD 2015, IISC, Bangalore.

27. **T. D. Das**, D. P. Samajdar, M. K. Bhowal and S. Dhar "Liquid Phase Epitaxial Growth and Low Temperature Photoluminescence of InPBi and GaSbBi," Presented at IWPSD2015, IISC, Bangalore
28. D. Muchahary, **A. J. Mondal**, R. S. Parmer and **A. Majumder**, "A Simplified Design Approach for Efficient Computation on DCT", 5th IEEE International Conference on Communication System and Network Technologies (CSNT-2015), Gwalior, India.
29. D. Muchahary, **A. J. Mondal** and **A. Majumder**, "A CORDIC Based Design Technique for Efficient Computation of DCT", International Conference on Communication and Signal Processing (ICCSP-2015), IEEE, Tamilnadu, India.
30. A. D. Borah, **A. J. Mondal**, D. Muchahary and **A. Majumder**, "FIR Low Pass filter design using Crazyness Based article Swarm Optimization Technique", International Conference on Communication and Signal Processing (ICCSP 2015), IEEE, Tamilnadu, India.
31. S. K. Singh, **A. J. Mondal** and **A. Majumder**, "Generation and Performance Evaluation of Reconfigurable Fault Tolerant Routing Algorithm for 2D-Mesh NoC", Procedia Computer Science, vol. 57, pp. 232-240, 2015.
32. S. K. Singh, **A. J. Mondal** and **A. Majumder**, "Generation and performance evaluation of reconfigurable random routing algorithm for 2D-mesh NoCs", Test Symposium (LATS), 2015 16th Latin-American, pp. 1-6, 2015.
33. J. Goswami, S. Ghosh, **A. Majumder** and S. Katiyar, "Development of a Prototype to detect Speed Limit Violation for Better Traffic Management", 8th International Conference on Contemporary Computing (IC3 - 2015), IEEE, Noida, India.
34. A. Kar, M. Das, B. Nath, D. Sarkar and **A. Majumder**, "Comparative analysis of low power novel encoders for Flash ADC in 45nm technology", Smart Technologies and Management for Computing, Communication, Controls, Energy and Materials (ICSTM), 2015 International Conference on, pp. 360-365, 2015.

35. M. Das, B. Nath, D. Sarkar, A. Kar and **A. Majumder**, "Design of ultra-low power novel 3-bit flash ADC in 45nm CMOS technology", Smart Technologies and Management for Computing, Communication, Controls, Energy and Materials (ICSTM), 2015 International Conference on, pp. 239-244, 2015.
36. S. Ghosh, J. Goswami, A. Kumar and **A. Majumder**, "Issues in NFC as a form of contactless communication: A comprehensive survey", Smart Technologies and Management for Computing, Communication, Controls, Energy and Materials (ICSTM), 2015 International Conference on, pp. 245-252, 2015.
37. **A. Majumder**, P. L. Singh, B. Chowdhury and R. Rai, "Synthesis and Realization of N-bit Reversible Register File Used in Bus Organization of Processor Architecture", Procedia Computer Science, vol. 57, pp. 305-312, 2015.
38. **A. Majumder**, P. L. Singh, B. Chowdhury, **A. J. Mondal** and V. Anand, "Efficient Design and Analysis of N-bit Reversible Shift Registers", Procedia Computer Science, vol. 57, pp. 199-208, 2015.
39. P. L. Singh, **A. Majumder**, B. Chowdhury, **A. J. Mondal** and T. S. Shekhawat, "Reducing Delay and Quantum Cost in the Novel Design of Reversible Memory Elements", Procedia Computer Science, vol. 57, pp. 189-198, 2015.
40. P. L. Singh, **A. Majumder**, B. Chowdhury, R. Singh and N. Mishra, "A novel realization of reversible LFSR for its application in cryptography", Signal Processing and Integrated Networks (SPIN), 2015 2nd International Conference on, pp. 601-606, 2015.
41. **A. Majumder**, B. Chowdhury, **A. J. Mondal** and K. Jain, "Investigation on QuineMcCluskey method: A decimal manipulation based novel approach for the minimization of Boolean function", Electronic Design, Computer Networks Automated Verification (EDCAV), 2015 International Conference on, pp. 18-22, 2015.
42. K. Jain, S. K. Singh, **A. Majumder** and **A. J. Mondal**, "Problems encountered in various arbitration techniques used in NOC router: A survey", Electronic Design, Computer Networks Automated Verification (EDCAV), 2015 International Conference on, pp. 62-67, 2015.

43. **A. Majumder**, P. L. Singh, N. Mishra, **A. J. Mondal** and B. Chowdhury, "A novel delay & Quantum Cost efficient reversible realization of  $2i \times j$  Random Access Memory", VLSI Systems, Architecture, Technology and Applications (VLSI-SATA), 2015 International Conference on, pp. 1-6, 2015.
44. A. Kar, **A. Majumder**, **A. J. Mondal** and N. Mishra, "Design of ultra-low power flash ADC using TMCC & bit referenced encoder in 180nm technology", VLSI Systems, Architecture, Technology and Applications (VLSI-SATA), 2015 International Conference on, pp. 1-6, 2015.
45. **S. Roy**, R. Saha and **C. T. Bhunia**, "Multiple Inputs Combinational Logic Minimization by Minterms Set", in Proc. of 1st International Conference on Recent cognizance in wireless communication & image processing (ICRCWIP-2015), Springer, Jan. 2015.
46. P. Sharma and **Y. Bulo**, "Logical aggressive packet combining with post-reception selection combining scheme for wireless network", ICCSP – 2015.
47. V. Rajoria, Priyanshu, and **S. K. Metya**, "Automatic Railway Inspection System", NCCCIP – 2015, NERIST, Nirjuli, May 2015.
48. Debnath, Rubi, V. Hanumante, D. Bhattacharjee, D. Tripathi, and **S. Roy**. "Multilingual speech translator using MATLAB." Electrical, Electronics, Signals, Communication and Optimization (EESCO), 2015 International Conference on. IEEE, 2015.

#### 6.3.4: National Conferences

1. Taipodia, J., Baglari, D., Biswas, S. and **Dey, A.** (2015) "Dispersion analysis using active MASW survey data" *Indian Geotechnical Conference: IGC 2015*, Pune, India, pp. 1-9.

#### 6.4. List of Publications by the Students of the Institute (Journals & Conferences)

1. **Debanjan Sarkar**, Partha Saha, Rupamkumar Das, Debojit Roy "A smart traffic congestion control method", International Journal of Electronics and Communication Technology (IJECT), Vol 6.3, July-Sept, 2015.

2. **A. Sarkar**, C T Bhunia, S. Maity and S K Chakraborty "Simulation and synthesis of graphene layer for biomedical sensor to detect prostate cancer", IEEE conference CODEC-2015, Calcutta University, Dec 2015.
3. **S. Bhattacharjee** et al. "Miniaturization of MEMS based smart patch antennas for bio-medical applications", Springer Conference on ICRCWIP- Organized by PIET in association, 2015.
4. **D. Muchahary**, A. J. Mondal, A. Majumder, "A CORDIC based design technique for efficient computation of DCT", IEEE International conference on Communications and Signal Processing (ICCSP), PP.0484-0489. Year: 2015.
5. **D. Muchahary**, A. J. Mondal, R.S Parmar, A. D. Borah, A. Majumder, "A Simplified Design Approach for efficient computation of DCT", IEEE 5th International conference on Communication Systems and Network Technology (CSNT) PP.0483-0487. Year: 2015.
6. **A. D. Borah**, A. J. Mondal, D. Muchahary, A. Majumder, " FIR low pass filter design using Craiziness base Particle Swarm Optimization Technique", IEEE International conference on Communications and Signal Processing (ICCSP), PP.0870-0874. Year: 2015.
7. **B. K. Singh** et al. "An Approach to Generate Automatic Variable key to assure Perfect Security in Cryptosystem", 1<sup>st</sup> International Conference on Computing, Communication, Electrical, Electronics, Devices and Signal Processing (CCEEDS-2015).
8. **K. C. Baruah** et.al "New Remote User Authentication Scheme Based on Graphical Password Using Smart Card", 1<sup>st</sup> International Conference on Computing, Communication, Electrical, Electronics, Devices and Signal Processing (CCEEDS-2015)
9. **B. Chowdhury** et.al "Investigation on Quine Mc Cluskey Method: A Decimal Manipulation Based Novel Approach for the Minimization of Boolean Function", International Conference on Electronics Design, Computer Networks and Automated Verification (EDCAB 2015).

10. **P. L. Singh**, "A Novel Delay and Quantom Cost Efficient Reversible Realization of 2iXj Random Access Memory", International Conference on VLSI System, Architecture, Technology and Application (VLSI SATA-2015).
11. **S. K. Singh** et.al "Generation and Performance Evaluation of Reconfigurable fault Tolerant Routing Algorithm for 2D-Mesh NOC", International Conference on Recent Trends in Computing (ICRTC-2015)
12. **S. Ningthoujam** et.al "New Basic Scheme for Packet Combining to Achieve Fast Error Correction and Higher Throughput", International Conference on Computing and Communication Systems (I3CS'15).
13. **O. Wakheth** et.al "Review of Software define Networking for Latency Reduction in Cloud Computing", 1<sup>st</sup> International Conference on Computing, Communication, Electrical, Electronics, Devices and Signal Processing (CCEEDS-2015)
14. **P. Sharma** and Y. Bulu, "logical aggressive packet combining technique with post reception selection combining scheme", IEEE conference on ICCSP-2015, 4-6 April 2015, organised by Adiparaskti college.
15. **S. Dey** and R. S. Goswami, " A Morphological Segmentation and Curve-let Features Extraction on Text Region Classification using SVM", 2015 IEEE International Conference on Computational Intelligence and Computing Research organised by Vickram College of Engineering, Madurai, Tamil Nadu on 11<sup>th</sup> December 2015
16. **J. Goswami**, S. Ghosh; S. Katiyar, A. Majumder, "Development of a prototype to detect speed limit violation for better traffic management," Eighth International Conference on Contemporary Computing (IC3), 2015. Pages: 449 – 454.
17. **S. Ghosh**, J. Goswami, A. Kumar and A. Majumder, "Issues in NFC as a form of contactless communication: A comprehensive survey", International Conference on Smart Technologies and Management for Computing, Communication, Controls, Energy and Materials (ICSTM), 2015, Pages: 245 – 252.

### 6.5. The Institute's Journals (International Journal on Current Science & Technology)



NIT Arunachal Pradesh encouraged young researchers to submit their original research articles in the Institute-funded 'International Journal on Current Science & Technology.' The Institute's journals are issued twice in a year. The articles published in the Institute's journals were original and they are cited by other articles which were published in other reputed international journals.

#### Research articles published in the Institute's Journals (International Journal on Current Science & Technology)

#### List of papers accepted for publication of International Journal on current Science & Technology Vol. 3, No. 1 & 2, January- June & July - December 2015:

- i. Alpana Mahapatra: "Dye Removal Using Treated Sugarcane Bagasse: Breakthrough Curve Modeling," accepted for publication in International Journal on current Science & Technology; Vol. 3, No. 1, January – June 2015.
- ii. Seema Khanum, Ani Taggu: "How Secure is your NFC," accepted for publication in International Journal on current Science & Technology Vol. 3, No. 1, January – June 2015.

- iii. A. Vanav Kumar: "Simulation of Vanilla call option with non-zero dividends using Operator Splitting Method," accepted for publication in International Journal on current Science & Technology; Vol. 3, No. 1, January – June 2015.
- iv. M. Preema Devi, Suhrita Chakrabarty and R.S Dhua : "Studies on drying of loose marigold flowers in comparison with dried helichrysum, chrysanthemum and gerbera flowers under West Bengal condition," accepted for publication in International Journal on current Science & Technology; Vol. 3, No. 1, January – June 2015.
- v. Mihir Kumar Shome: "Group Atmosphere, Task-Job and Role Characteristics: An Interdependency Approach in Engineers of There Large Scale Public Sector Organization," accepted for publication in International Journal on current Science & Technology; Vol. 3, No. 1, January – June 2015.
- vi. Shubhajit Das and Sandip Kumar Mandal: "Prediction of process parameters for minimization of tool-chip interface temperature and power consumption in turning mild steel using Taguchi method," accepted for publication in International Journal on current Science & Technology; Vol. 3, No. 2, July – December 2015.
- vii. U. K. Saha: "Generalized Fractional Calculus Operators Involving H-Function of Several Variables," accepted for publication in International Journal on current Science & Technology; Vol. 3, No. 2, July – December 2015.
- viii. Nabakumar Pramanik, Ananta Kumar Atta and Alpana Mahapatra: "Synthesis of Chitosan Phosphate Grafted Nanosized Hydroxyapatite and its Characterization,"
- ix. Srikanta Dash, Yang Saring, and C.T.Bhunia: "Aggressive Packet Combining Scheme with Selective Repeat Request," accepted for publication in International Journal on current Science & Technology; Vol. 3, No. 2, July – December 2015.
- x. Shri AbhirupBhunia, Shri AbhinandanBhunia and Prof. C.T. Bhunia: "Nature and Management (Fundamental Article)," accepted for publication in International Journal on current Science & Technology; Vol. 3, No. 2, July – December 2015.

**6.6. Research Projects (during the last five years):****Year-wise details**

Sl. No.	Academic year	No. of ongoing projects	Year wise total fund received under project head (lakh.)
i	2015	04	45.1
ii	2014	04	20
iii	2013	Nil	5
iv	2012	Nil	-
	<b>TOTAL</b>	<b>04</b>	<b>70.1</b>

**Year-wise sources of major funding agencies**

Sl. No.	Academic year	Name of the major funding agencies	Funds received (lakh)
i	2015	DST,ICMR,MHRD	45.1
ii	2014	NIT, Arunachal Pradesh	20
iii	2013	NIT, Arunachal Pradesh	5
iv	2012	-	-
	<b>TOTAL</b>		<b>70.1</b>

**Department / Centre-wise Project fund received on R&D head**

Sl. No.	Year	Name of major funding agencies	Fund received (lakh)
i	Chemistry,ECE,CSE	DST,ICMR,MHRD	45.1
ii	Physics,ECE	NIT, Arunachal Pradesh	20
iii	ECE,CSE	NIT, Arunachal Pradesh	5
iv	ECE,CSE	-	-
	<b>TOTAL</b>		<b>70.1</b>

**6.7. List major academic initiatives for achieving R&D excellence****A. Already taken:**

- a. **1st Research Summit was held on April 10- 11, 2015 at NIT-Arunachal Pradesh.**

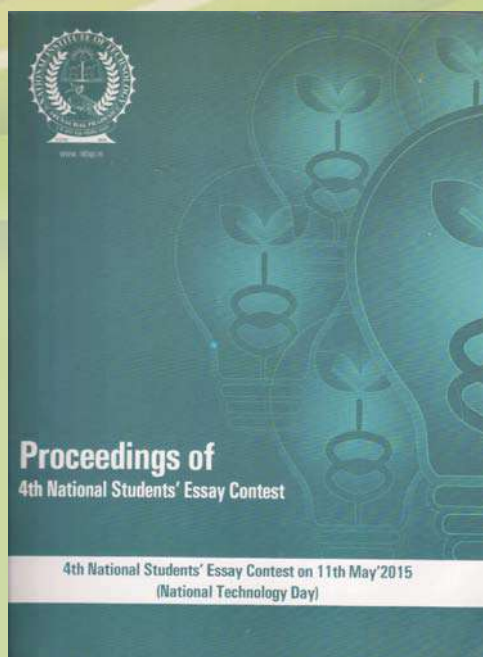
NIT Arunachal Pradesh is privileged to conduct its 1st Research Summit (Hunt for Ideas) on 10th and 11th April, 2015 with a definite, directive and decisive objectives of giving Research directions, problems, motivations and enthusiasm to up-bright young Members of Faculty working NIT Arunachal Pradesh with several logistic difficulties. It is a wonderful exercise in which the following Professors of eminence delivered talks on invitation:

1. Prof. S. C. Dutta Roy, Bhatnagar awardee & Former Professor, Indian Institute Tech. Delhi
2. Prof. Bibek Bandyopadhyay, Professor, Indian Institute of Engineering Science & Technology, Howrah
3. Prof. Anirban Kundu, Professor, University of Calcutta
4. Prof. P. K. Basu, Professor, IRPE, University of Calcutta
5. Prof. Soumitro Banerjee, Professor, Indian Institute of Science Education & Research, Kolkata
6. Prof. B. P. Sinha, Professor, ISI - Kolkata

**b. Celebration of National Technology Day on 11th May 2015.**

The Institute celebrate 'National Technology Day' with most meticulously & sincerely by organizing national level students' essay competition every year since 2012. The summary of the 4th students' essay competition of 2015 is given below:

Date of Celebration	Topic of Essay Competition	Winners
11th May, 2015	For UG Students :	1st: Akanksha Kumari, 3rd year EE, SIT, West Bengal
	"Philosophy of Higher Technical Education"	2nd: Rishi Raj, B.Pharm, Dr. B C Roy College of Pharmacy & AHS, Durgapur, West Bengal..
		3rd: Surya Arya, Dept. of CE, MNIT (NIT Jaipur), Jaipur, Rajasthan, India
		For PG Students & Research Scholar :
	"Philosophy of Research"	2nd: Argha Sarkar, Department of CSE, NIT Arunachal Pradesh argha15@gmail.com
		3rd: Ngasepam Monica Devi, M. Tech; Department of CSE, NIT Arunachal Pradesh ngcanimo@gmail.com



- c. Bi-Annual Journal Publication namely "International Journal on Current Science and Technology (ISSN 23203656) will be published (5th and 6th issue)."
- d. Internal Research Summits were organized by the each departments.
- e. Entrepreneurship workshop On "Entrepreneurship- An Innovative way for Creation of Income and Employment opportunities" was held from 1st March to 7th March, 2016. Following Resource persons were present to conduct the workshop:
  1. Dr. Ashok Kumar Sharma, Associate Professor, Dept. of Business Administration, Jaipur
  2. Dr. Ramesh Kumar Mittal, Deputy Director, Chaudhary Charan Singh National Institute of Agricultural Marketing, Jaipur
  3. Prof. N.M. Panda, Professor, Dept. of Commerce, NEHU, Shillong, Meghalaya.

**B. To be undertaken in near future:**

1. Celebration of National Technology Day on 4th June (2016, 5th issue).
2. Bi-Annual Journal Publication namely "International Journal on Current Science and Technology (ISSN 23203656) will be published (7th and 8th issue)."
3. 2nd Research Summit will be held on June 3-4, 2016.

### 6.8. Research facilities

Free analytical and Inter-NET research facility to the research scholars has been developed and provided during the year under report.

### Research and Development Cell

Research is an integral component of any educational programme. In order to do research in a meaningful manner, it is imperative to review the recent advances in the concerned subjects from time to time. The sole purpose of holding conferences is to have interaction between the scientists, mathematicians, engineers and management experts, and thus come to know about the advances made in the recent past in the broad areas of Chemical Sciences, Earth System Sciences, Engineering Sciences, Environmental Sciences and Sustainable Development, Material Sciences, Mathematical Sciences and Physical Sciences. This is expected to provide a boost to the R & D programmes.

### Research and Development Programmes

- Ph. D. Programme.
- Junior Research Fellowship Programme (JRF) [HYPERLINK "http://www.nitap.in/Menu/RnD/docs/ADVT%20JRF.pdf"](http://www.nitap.in/Menu/RnD/docs/ADVT%20JRF.pdf)

### 6.9. Patents (during the last five years)

Sl. No.	Academic year	No. of Indian patents granted	No. of Indian patents filed	No. of Foreign patents granted	No. of Foreign patents filed
i	2015	Nil	Nil	Nil	Nil
ii	2014	Nil	Nil	Nil	Nil
iii	2013	Nil	03	Nil	Nil
iv	2012	Nil	Nil	Nil	Nil
	<b>TOTAL</b>	<b>Nil</b>	<b>03</b>	<b>Nil</b>	<b>Nil</b>

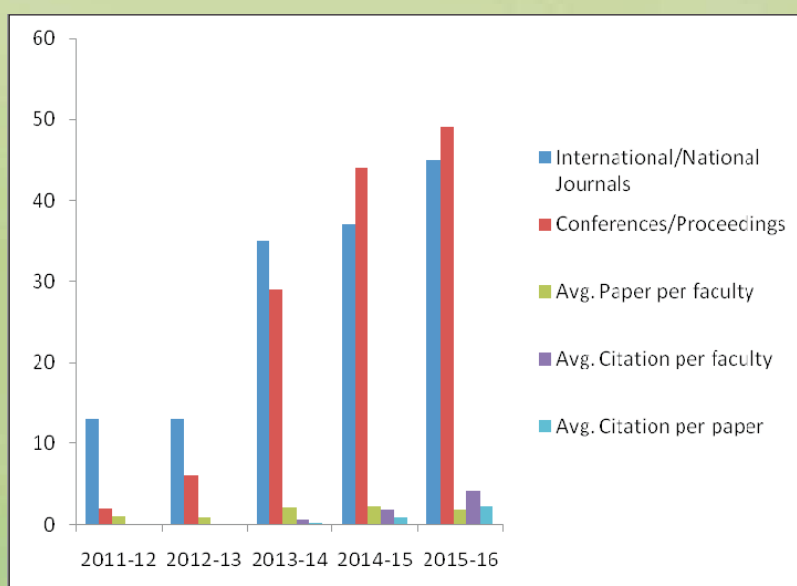
**Department wise patent details (during the Last five years)**

Sl. No.	Department	No. of Indian patents granted	No. of Indian patents filed	No. of Foreign patents granted	No. of Foreign patents filed
i	Computer Science & Engineering	Nil	03	Nil	Nil
ii	Other Departments	Nil	Nil	Nil	Nil
<b>TOTAL</b>		<b>Nil</b>	<b>03</b>	<b>Nil</b>	<b>Nil</b>

**6.10. Publications by faculty members (during last five years):**

Year-wise number of publications in peer reviewed journals and conferences

Sl. No.	Year	National Journals	International Journals	International conferences	National conferences	Books	Book chapters & Monographs Published
i.	2015-16	00	45	48	01	00	00
ii.	2014-15	04	33	36	8	00	00
iii.	2013-14	05	30	18	11	01	01
iv.	2012-13	01	12	03	03	00	01
v.	2011-12	04	09	01	01	00	00
<b>Total</b>		<b>14</b>	<b>129</b>	<b>106</b>	<b>24</b>	<b>01</b>	<b>02</b>

**Growth Chart of Research Publications:**

## Department-wise total publications

Sl. No.	Name of the Department	2015		2014		2013		2012		2011	
		J	C	J	C	J	C	J	C	J	C
i.	ECE	16	28	15	29	10	6	2	2	2	0
ii.	CSE	10	11	16	7	12	16	0	0	0	0
iii.	EEE	2	6	1	5	06	3	3	2	2	1
iv.	ME	0	0	0	0	0	1	0	0	0	0
v.	CE	0	1	0	1	0	0	0	0	0	0
vi.	BT	2	0	0	0	0	0	0	0	0	0
vii.	PCES	10	2	1	0	5	2	7	0	2	0
viii.	MMH	5	1	4	2	2	01	00	02	8	2
<b>Total</b>		<b>45</b>	<b>49</b>	<b>37</b>	<b>44</b>	<b>35</b>	<b>29</b>	<b>12</b>	<b>06</b>	<b>14</b>	<b>03</b>

**Note:**

J = International/National Journal

C = International/National Conferences

## 7. STUDENTS' AMENITIES AND ACTIVITIES

### 7.1 Hostels

The hostels of the Institute are the units of dwelling place i.e., a home away from the home cared by the Hostel Provost, Wardens and Hostel Staff. The rooms are well-spaced for all the students to live in and to study, and are provided with individual furniture such as table, chair, cupboard, cot mattress etc. Landscape in and around the hostels makes the environment healthier and beautiful. The hostels are supported with playground for the students. Well-equipped common rooms exist in each boys' and girls' hostel separately.

Medical facility is available to the students and members of faculty and staff to tackle the health hazards and to ensure physical well-beings. Details of the Medical Officer are as under:

<b>Dr. P. K. Deb</b> <b>Designation:</b> Medical Officer (Part-time) <b>Email:</b> mo@nitap.in <b>Contact:</b> 0360-2284801 (O), 09862850343 (M)	<b>Nurse:</b> Ms. Likha Yatup (Contract)
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### 7.2 Hostel Accommodation

At present, the Institute has seven (7) hostels, of which five hostels are for boys and two hostels are for girls. The total capacity of these hostels is about 550. The Institute is fully residential and all the students (i.e. boys and girls) are accommodated in their respective hostels.

**Table 7.1**  
**Details of Accommodation in the Students' hostels**

Sl. No.	Name of hostel	Year of establishment	Type of accommodation	No. of rooms	Total no. of inmates
i	Tiger Hall (Boys)	2010	Triple bedded Room	25	69
ii	Peacock Hall (Girls)	2011	Double bedded Room	18	27
iii	Pragati Hall (Boys)	2012	Triple bedded Room	41	91

Sl. No.	Name of hostel	Year of establishment	Type of accommodation	No. of rooms	Total no. of inmates
iv	Rose Hall (Girls)	2012	Triple bedded Room	18	56
v	Hornbill Hall (Boys)	2015	Multi-bedded Room	24	56
vi	Deer Hall (Boys)	2014	Multi-bedded Room	80	183
vii	Mithun Hall	2015	Multi-bedded Room	21	41
Total No. of students					523

### 7.3 Hostel Administration

The Institute has provided supporting staff to maintain the hostels. The duties of the hostel administration are being carried out under the direction of the Hostel Provost who heads the management of boys' and girls' hostels. He is supported by wardens and office staffs. The details of the Wardens of the hostels are as under:

#### Boys' Hostels:

- i. Sri Santanu Maity, Warden, Tiger Hall of Residences, Yupia, Arunachal Pradesh
- ii. Dr. Dipak Sen, Warden, Deer Hall of Residence, Lekhi Village, Naharlagun Arunachal Pradesh
- iii. Dr. T. D. Das, Warden, Pragati Hall of Residence, Nirjuli, Arunachal Pradesh
- iv. Sri. Brajagopal Datta, Warden, Hornbill Hall of Residences, Bage Tinali, Nirjuli, Arunachal Pradesh
- v. Sri. Koj Sambyo, Warden, Mithun Hall of Residences, Ghopur, Itanagar, Arunachal Pradesh

#### Girls' Hostels:

- i. Ms. Abi Tayeng, Warden, Peacock Hall of Residences and M. Tech GH (Type-IV), Yupia, Arunachal Pradesh
- ii. Srimati Radha Kumari Pandey, Warden, Rose Hall of Residence, Nirjuli, Arunachal Pradesh

### 7.4 Hostel Mess

Students are provided with food in the hostel mess, joining mess is compulsory for all the hostellers. Dining outside the respective hostel

mess is not permitted under any circumstances. All the messes have been outsourced. The hostel messes are run by experienced and qualified caterers. The messes offer healthy meals at moderate rates.

### 7.5 General Facilities

- The Institute's Health Centre offers medical facilities.
- Proper lighting arrangement has been made inside and outside the hostels.
- Each hostel has a separate common/recreation hall
- Wi-Fi connection is also provided in all the hostels.
- All the hostels are connected to the roads by well-built pathways.

### 7.6 Subsidy

The Institute is also planning to provide mess subsidy to the inmates of the hostels.

### 7.7 Scholarship

- I. In order to encourage the students to excel in their academic pursuits, the Institute provides merit-cum-means scholarship to its 10% students, subject to the conditions that the concerned students are not availing any other scholarship from any other sources. The Table below contains the lists of students enjoying scholarships

Sl. No.	Name of Students	Value of the scholarship
i	Mr. Kapil Dev	Full Tuition Fee waiver
ii	Mr. Sushil Kumar Pal	Full Tuition Fee waiver
iii	Mr. Sahid Hussain	Full Tuition Fee waiver
iv	Mr. Kishan Agarwal	Full Tuition Fee waiver
v	Mr. Om Kesharwani	Full Tuition Fee waiver
vi	Mr. S. Prashanth Reddy	Full Tuition Fee waiver
vii	Mr. Praveen Kumar Kumbhankonam	Full Tuition Fee waiver
viii	Mr. Sandeep Singh	Full Tuition Fee waiver
ix	Mr. Ashish Pal	Half Tuition Fee waiver
x	Miss Rijita Poddar	Full Tuition Fee waiver
xi	Mr. Rishi Kant Kumar	Full Tuition Fee waiver
xii	Mr. Sumit Raj	Full Tuition Fee waiver
xiii	Mr. Chandan Kumar	Full Tuition Fee waiver

Sl. No.	Name of Students	Value of the scholarship
xiv	Mr. Kailash Prasad	Full Tuition Fee waiver
xv	Mr. Raushan Kumar	Full Tuition Fee waiver
xvi	Mr. Shivam Kumar Tripathi	Full Tuition Fee waiver
xvii	Mr. Vishal Gangwar	Full Tuition Fee waiver
xviii	Mr. Ogeti Ammini Sree Sai	Full Tuition Fee waiver

II. The Institute has provided GATE scholarship for M. Tech students who have possess valid GATE score. The following are the lists of students:

Sl. No.	Name of the students	Amount per Month (Rs)	Sl. No.	Name of the students	Amount per Month (Rs)
i	Paromita Bhattacharjee	12,4000	xxxix	Gaurav Shukla	12,4000
ii	Jyoti Sharma	12,4000	xl	Indranil Mal	12,4000
iii	Anwesa Choudhury	12,4000	xli	Kuheli Roy Burman	12,4000
iv	Ashish Prajapati	12,4000	xlii	Kumar Gaurav	12,4000
v	Prasant Kumar	12,4000	xliii	N.Kumar Reddy	12,4000
vi	Rahul Kaushik	12,4000	xliiii	Shashank Vikram Singh	12,4000
vii	Abhinandan Goswami	12,4000	xlv	Shivam Raj	12,4000
viii	Jivesh Verma	12,4000	xlvii	Gaurav Kumar Yadav	12,4000
ix	Ripu Daman Singh	12,4000	xlviii	Jaykishan Singh	12,4000
x	Ram Prasad Acharya	12,4000	xlviiii	Kuruva Nyamathulla	12,4000
xi	Raushan Kumar	12,4000	xl	Md. Sirajuddin Inamdar	12,4000
xii	Rajesh Saha	12,4000	xli	Sabya Sachi Sahu	12,4000
xiii	Bikramjit Basumatary	12,4000	xlii	Sanjeet Kumar	12,4000
xiv	Aditya Sharma	12,4000	xliiii	Saranya Mohan S	12,4000
xv	Vishwajit Nandi	12,4000	xliiiii	Shweta Kumari	12,4000
xvi	Srikanta Dash	12,4000	xli	Sreejesh S. Nair	12,4000
xvii	Niraj Kr. Singh	12,4000	xlii	Badal Kumar	12,4000
xviii	Prasenjit Deb	12,4000	xliiii	Avinash Maurya	12,4000
xix	Pritam Dey	12,4000	xliiiii	Jaison Joshy	12,4000
xx	Debabrata Acharjee	12,4000	xli	Mir Wajahat	12,4000
xxi	Md. Nazibul Hasan	12,4000	xlii	Bharat Richhariya	12,4000
xxii	Preety Sharma	12,4000	xliiii	Subhendu Sekar Paik	12,4000

Sl. No.	Name of the students	Amount per Month (Rs)	Sl. No.	Name of the students	Amount per Month (Rs)
xxiii	Rohit Kumar	12,4000	xxxxxiii	Shadab Zafar	12,4000
xxiv	Asish Hazra	12,4000	xxxxxiv	Moloy Sameer Dutta	12,4000
xxv	Dileep Kumar	12,4000	xxxxv	Syed Ammar M. Qadri	12,4000
xxvi	Sirikonda Rambabu	12,4000	xxxxvi	Kusuma Sujan	12,4000
xxvii	Vinod Rimaji Sukhadeve	12,4000	xxxxvii	Ananya Garhwal	12,4000
xxviii	K. Dinesh	12,4000	xxxxviii	Pinku Moni Baruah	12,4000
xxix	Bhairab Chandra Patra	12,4000	xxxxix	Saikat Ghosh	12,4000
xxx	Rishabh Rajan	12,4000	xxxxx	Soumya Ranjan Meher	12,4000

III. Ministry of Social Justice and Empowerment, GoI, New Delhi has sanctioned grant-in-aid under Central Sector Scheme of Top Class Education for SC students. The following are the lists of 2nd, 3rd and 4th year students:

Sl. No.	Name of the students	Amount per year (Rs)	Sl. No.	Name of the students	Amount per year (Rs)
i	Pintu Das	74200	xiv	Ashutosh Kumar	179600
ii	Vijay Prajapati	74200	xv	Vrind Paswan	179600
iii	Naresh Chouhan	74200	xvi	Nitai Roy	179600
iv	Aditya Mandal	74200	xvii	Pooja Mandal	179600
v	Aditya Kr. Anshu	74200	xviii	Sandeep Bairwa	56400
vi	Jasraj Barola	179600	xix	Anil Ram	130600
vii	Amit Kumar Gond	179600	xx	Vinay Kumar	74200
viii	Rajnish	179600	xxi	Mamta Kumari	74200
ix	Smita Das	179600	xxii	Subham Roy	74200
x	Poppy Das	179600	xxiii	Salam Michael Singh	74200
xi	Pradeep Kumar	179600	xxiv	Arvind Kumar	74200
xii	Hukam Raj Bairwa	179600	xxv	Ujjal Das	74200
xiii	Girkhala Vinay Kumar	179600	xxvi	Akash Kumar Chandel	74200

IV. District Welfare, Govt. of Bihar, Patna has sanctioned scholarship for the following students:

Sl. No.	Name of the students	Amount per year (Rs)
i	Rahul Raj Sharma	119,700.00
ii	Rajan Kumar	37,280.00
iii	Ajay Kumar Ram	37,280.00

V. Awardees of 'Post Graduate Scholarships for Professional Courses for SC/ST Candidates' under UGC is

Sl. No.	Name of the students	Amount (Rs)
i	Debanjan Sarkar	7,800.00 pm

VI. Backward & Extremely Backward Class Welfare Dept., Bihar has sanctioned scholarship for

Sl. No.	Name of the students	Amount per year (Rs)
i	Avinash Kumar Sinha	38,020.00

VII. Directorate of Higher and Technical Education, Government of Arunachal Pradesh, Itanagar has sanctioned NEC scholarship grants to Arunachal Pradesh Schedule Tribal students. The following are the lists of students who got the grants:

Sl. No.	Name of the students	Amount per year (Rs)	Sl. No.	Name of the students	Amount per year (Rs)
i	Darbom Modi	13,400 .00	xiv	Tenzing Samten	13,400 .00
ii	Nada Tade	13,400 .00	xv	Gerik Ete	13,400 .00
iii	Hage Manju	13,400 .00	xvi	Sanjay Pangcho	13,400 .00
iv	Tangha Lhadon	13,400 .00	xvii	Keny Wangmu Karma	13,400 .00
v	Jumdo Gamlin	13,400 .00	xviii	Bension Megu	13,400 .00
vi	Ongfa Wakhet	13,400 .00	xix	Taru Tabin	13,400 .00
vii	Kime Opo	13,400 .00	xx	Kadar Yomcha	13,400 .00
viii	Tarak Takang	13,400 .00	xxi	Pato Karbak	13,400 .00
ix	Nabam Bida	13,400 .00	xxii	Techi Tade Tara	13,400 .00
x	Taru Tasso	13,400 .00	xxiii	Karge Riba	13,400 .00

Sl. No.	Name of the students	Amount per year (Rs)	Sl. No.	Name of the students	Amount per year (Rs)
xi	Nanu Gumsar Sorum	13,400 .00	xxiv	Marper Nyori	13,400 .00
xii	Tenzing T. Totpa	13,400 .00	xxv	Nani Yalu	16,400.00
xiii	Tarak Takang	13,400 .00	xxvi	Misso Anju	16,400.00

VIII. Ministry of Social Justice and Empowerment, Govt. of India, New Delhi has sanctioned grants-in-aid under Central Sector Scheme of Top Class Education for SC students.

Sl. No.	Name of the students	Amount per year (Rs)	Sl. No.	Name of the students	Amount per year (Rs)
i	Tenzin Choney	119200	viii	Karba Loyi	119200
ii	Tenzing Lhadon	119200	ix	Atal Upal Soyi	119200
iii	Seng Ong Maio	119200	x	Mibom Yirang	179600
iv	Lindum Tassar	119200	xi	Happy Jorang	179600
v	Nang Narika Namchoom	119200	xii	Yase Dusu	179600
vi	Peter Nabam	119200	xiii	Dulley Chalo	179600
vii	Nganga Gumsar Sorum	119200			

IX. Directorate of Technical Education: Assam has sanctioned scholarship for

Sl. No.	Name of the students	Amount per year (Rs)
i	Janmoni Borah	16400
ii	Amlan Deep Borah	16400

X. Ministry of Social Justice and Empowerment, Govt. of India, New Delhi has sanctioned grants-in-aid under National Handicapped Finance and Development Corporation (NHFDC) for following students:

Sl. No.	Name of the students	Amount per year (Rs)	Sl. No.	Name of the students	Amount per year (Rs)
i	Ranjit Kumar	84200	v	Rahul Raj Sharma	31000
ii	Techi Tade Tara	20000	vi	Ranjit Kumar	50900
iii	Shishir Kumar Modak	20000	vii	Ankesh Kumar	68400
iv	Opo Kime	50900			

XI. Directorate of Higher and Technical Education, Government of Arunachal Pradesh, Itanagar has sanctioned stipend grants under Arunachal Pradesh state stipend scheme-2012, to Arunachal Pradesh Schedule Tribal students. The following are the lists of students who got the grants:

Sl. No.	Name of the students	Amount (Rs)	Sl. No.	Name of the students	Amount (Rs)
i	Tadar Dinnung	9,600.00	vi	Techi Tade Tara	9,600.00
ii	Zemwa Jangno	9,600.00	vii	Pato Karbak	9,600.00
iii	Kidar Ete	9,600.00	viii	Taru Tabin	9,600.00
iv	Naga Rigam	9,600.00	ix	Taru Doni	9,600.00
v	Doba Sora	9,600.00			

XII. The recipients of "Ishan Uday-Special Scholarship Scheme for North Eastern Region", under the Ministry of HRD and the University Grants Commission are as below:

Sl. No.	Name of the students	Amount (Rs)	Sl. No.	Name of the students	Amount (Rs)
i	Kadar Yomcha	5000 pm	iv	Biplop Nath	5000 pm
ii	Anup Pegu	5000 pm	v	Jai Dev Singh	5000 pm
iii	Ridap Moran	5000 pm	vi	Tridip Phukan	5000 pm

XIII. SJVN Ltd., a Mini Ratnaand Schedule 'A' Central Public Sector Undertaking under the Ministry of Power, Govt. of India, is a joint venture of Government of India and Government of Himachal Pradesh has sanctioned Silver Jubilee Merit Scholarship Scheme. The following are the lists of students:

Sl. No.	Name of the students	Amount (Rs)
i	Rishav Das	2000.00 pm
ii	Jubair Ahmed	2000.00 pm
iii	Roshan Thomas	2000.00 pm
iv	Vedprakesh Chauhan	2000.00 pm
v	Shyam Kumar Dorjee	2000.00 pm
vi	Sajin P. Koshy	2000.00 pm
vii	Avinash Nair	2000.00 pm

### 7.8. Training and Placement Cell

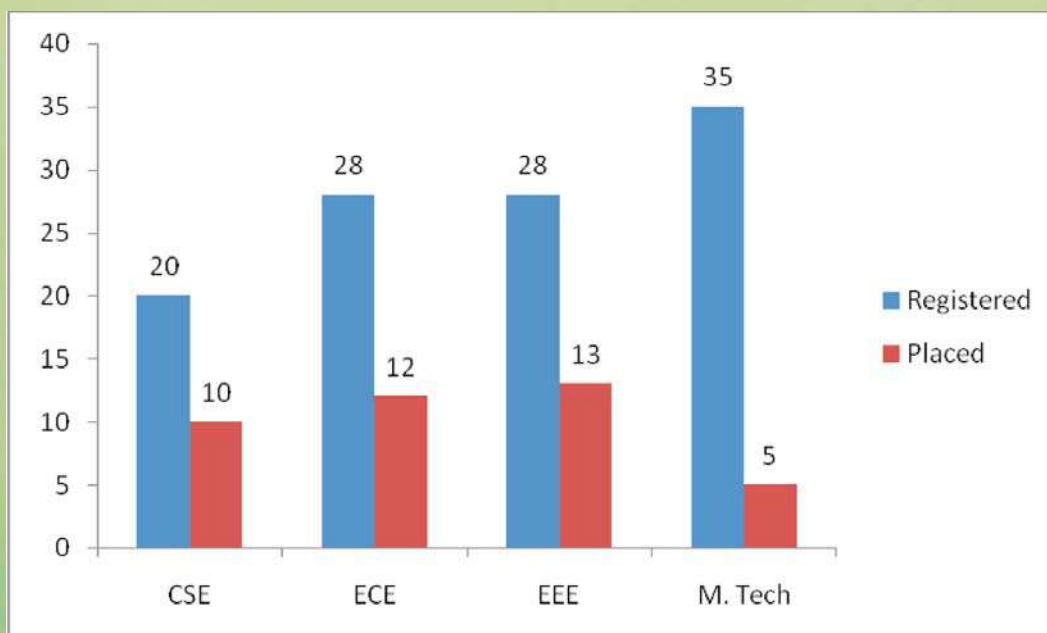
The Cell of the Institute plays a very important role in counselling and guiding the students of the Institute for their professional growth and successful career placement. The placement stage is a crucial interface between the stage of completion of academic programme of studies and that of entry into suitable employment.

Besides, in order to provide ample opportunities to the students to get proper placement in industries and companies, the Cell conducts workshops and mock interviews. It has prepared a draft Placement Brochure and the same has been released in the year under report i.e, 2014-15 to invite the industries/organizations for campus interviews and placements. Video-conferencing facility has already been established in 2012-13 for conducting one-to-one interview.

The Training and Placement Cell of the Institute centrally handles all aspects of campus placements for the graduating students of all the departments. The Cell is well-equipped with excellent infrastructure to support each and every stage of the placement processes. The T & P staff members also assist in arranging Pre-Placement Talks, Written Tests, Group Discussions and Interviews etc. as per the requirements of the Organizations.

The details of students (batch 2011-15) who are already placed are as under:

#### Status of Training & Placement for 2012-16 batch till now



Sl No.	Name of the Company	No. of Students placed			
		CSE (20)	ECE (28)	EEE (28)	M. Tech (35)
1	Polaris	1	0	0	
2	Tech Mahindra	0	0	1	
3	L&T Infotech	2	2	0	
4	IBM	3	6	5	4
5	Zaloni	1	0	0	
6	L&T construction	0	0	2	
7	Mu Sigma	1	0	0	
8	Intel	0	0	0	1
9	Wipro	1	1	2	
10	infosys	1	2	2	
11	TNS India	-	-	-	
12	HP	-	-	-	
13	Robert Bosch	-	1	1	-
14	Vodafone	-	-	-	-
15	Tata Communications	-	-	-	-
	Total	10	12	13	5

### 7.9. Research related information pertaining to students

#### I. Department-wise students' publications (during the last five years)

Sl. No.	Department	2015		2014		2013		2012	
		(C+B)	(J)	(C+B)	(J)	(C+B)	(J)	(C+B)	(J)
1	ECE	24	8	05	7	02		08	
2	CSE	17	2	23	13	-		-	
<b>Total</b>		<b>41</b>	<b>10</b>	<b>28</b>	<b>20</b>	<b>02</b>		<b>08</b>	

Hint: Conference (C), Journals (J), Book Chapters (BC).

#### II. Participation of students in Conferences

Program	Departments	No. of students attended								Total
		National/International Conferences in India				International Conferences abroad				
		2015	2014	2013	2012	2014	2013	2012		
B.Tech/	ECE	14	12	32	-	-	-	-	-	58
M.Tech/	CSE	17	18	34	-	-	-	-	-	69
PhD	EEE	-	-	31	-	-	-	-	-	31
<b>Total</b>		<b>31</b>	<b>30</b>	<b>97</b>	<b>-</b>	<b>04</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>158</b>

## 7.10 Celebrations in the Institution

### 1. Annual Technology Festival (ADDOVEDI)



#### ADDOVEDI 2015(MOTIVATION FOR INNOVATION)

#### *The Festivals of Technology*

Addovedi is the annual technical festival of NIT Arunachal Pradesh. It is the extravaganza of technology and an ocean of knowledge. It is organized by the student community of the institute.

#### **HISTORY OF ADDOVEDI**

ADDOVEDI was founded and established in the year 2012 not only as a tech-fest but as an organization to promote, induce and inculcate technical skills in various fields among the students of the institute and the society.

It was the result of combined commitment of the students of two batches viz. batch of 2014 and batch of 2015. The founders were Eshwar Endra(batch of 2014) and Nripendra Trigunayat(batch of 2015).

#### **3<sup>rd</sup> Edition of Addovedi**

Including ADDOVEDI 2015, three successful editions have been organized till date in the institute.

ADDOVEDI 2015 was the third and latest edition which was conducted from 30.10.2015 to 01.11.2015. It was a new step in the field of advancement of technology and took the brand ADDOVEDI to new heights.

#### **A Step Ahead**

ADDOVEDI 2015 contained a wide array of events. New events were introduced which were not only exiting but mind were boggling. Till 2014 there were only three branches included in ADDOVEDI but ADDOVEDI took all seven branches in its memorandum. Events were categorized in three categories, viz. Departmental Events, Mega Events and Fun Events.

#### **Initiatives**

A blood donation camp was organized by the ROSHNI in collaboration with ADDOVEDI 2K15, NCC unit, NSS unit and the A.P. state AIDS Control Society at the university campus of the National Institute Of Technology, Yupia on Saturday, September 12, 2015.



### Exiting Events

#### DEPARTMENTAL EVENTS

Codathon (CSE)  
 Riddler (CSE)  
 Algo-Rush (CSE)  
 Code-Avalanche (CSE)  
 Arduino (ECE)  
 Circuit-Crash (ECE)  
 Circuit-Design (ECE)  
 Circuit-o-Trix (EEE)  
 Circuit-Debugging(EEE)  
 Mat lab (EEE)  
 Mech-A-Throw (ME)

#### Record Participation

ADDOVEDI 2015 witnessed record breaking participation till date. Participants from NIT Arunachal and NERIST turned up and took part in most of events. Events like "Treasure Hunt" and "Strike Your Mind" engaged above 120 number of individuals."Also events like "Mech-a-Throw", "Lift-off", "Googler" etc also recorded huge participation.

### Exiting Events

Contraption (ME)  
 Build-up-Racer (ME)  
 Lift-off (ME)  
 AutoCAD (CE)  
 Build-it (CE)

### **New Vistas**

ADDOVEDI 2015 introduced new technologies and skills which will certainly add up to the intellect of the students of the institute.

A workshop on CATIA was carried out by the 5th semester students of ME department. CATIA is designing software in Mechanical Engineering department.

A workshop on REDHAT was organized by Mr. Naresh Chauhan (5th SEM CSE).REDHAT is version of LINUX operating system.

- ▶ Workshop on ARDUINO was carried out.
- ▶ Workshop on Mat lab was carried out.

### **Some Glimpses of Addovedi 2k15**

#### **Inauguration Day**



Poster and Banners



Events



Workshops



Exhibitions



Robowars



## 2: Annual Cultural Festival (ATULYAM 2016)

**"Our Endeavour is to start an odyssey which will inculcate in us the zeal and spirit to embrace the galaxy of brilliance in our midst and will lead us all to laurels of fame and glory".**

Atulyam is the inter-College Annual Cultural Festival of NIT-Arunachal Pradesh. It is one of the important cultural fest in North East as well as in the Country. It has entertainment and fun integrated with awareness and responsibility while creating a holistic and magical environment making this festival grand, extravagant and worthwhile.

Atulyam is the time when students and teachers take a break from the classroom atmosphere and bask in the glory of both Indian and western culture. There are songs, dance, plays and much more. It is the time, when young, old and carefree spirits come together for moments to remember for the whole lifetime. It invites students from all around the country to put their ingenuity and aptitude to test at an unparalleled level of competition. This 3rd edition of Atulyam is epitomized itself as the ultimate platform of participants. Embodying the undying spirit of a student, this festival makes you challenge and ravish the artist in him/her.

Atulyam, the annual cultural festival of NIT-Arunachal Pradesh was held during 19th to 22<sup>rd</sup> April, 2016 with the slogan *Inmelodia, Concsntu*. This was the first time when the Institute celebrated the annual cultural festival unlocking the potential of the NITians. Students from various institutes participated in the events. Altogether 26 events were there in nine categories including theatrics, creat-ev-villaz, Viking Zone, Rhythm on The Floor, Literature, Sports and Mr. and Miss Atulyam.



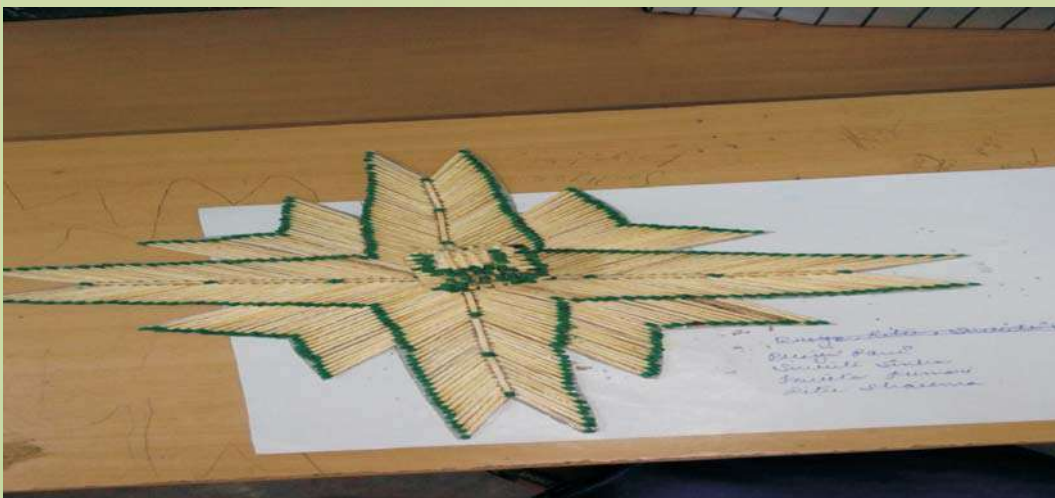
Special Performance by Soni Singh (3rd year CSE) and Mamata (4th year ECE)



Rangoli Competition during Atulyam-2016



College Naking



Creative Exhibition



**Creative Exhibition**



**Creative Exhibition**



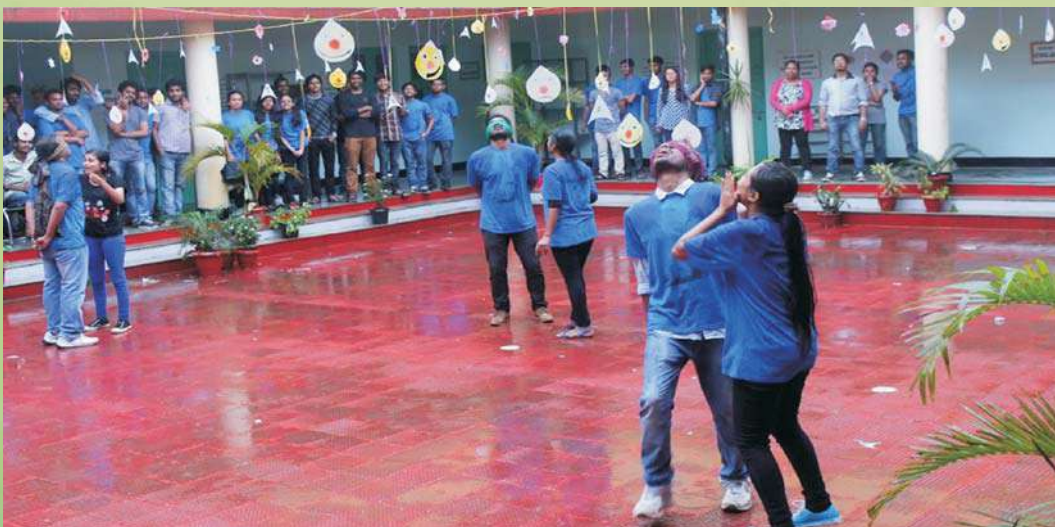
**Stone Art**



**Singing Competition**



**Gully Cricket**



**Roadies (Mega Event)**



**Special Performances by drivers**



**Parliament Debate**



**Bihu Dance (Inauguration function) by B. Tech 1st year girls**



**Dance Performance by Himanshu and Ritesh (B. Tech 2<sup>nd</sup> year)**



**Mr. & Miss Atulyam Ramp Show by participants**



**Paper Dance Competition**



**Battle of Bands (Rockclique)**



**Mob Dance**



**Mr. & Miss Atulyam Competition**



**Mr. & Miss Atulyam Competition**



**Dance Competition (Whoop-it-up)**



**Tug of War**



**Anchoring the event of Atulyam-2016 by Sneha and Upendra (3rd year B.Tech)**



**Audiences enjoying the Atulyam-2016 events**



**Singing performance by Roshan (3rd year B. Tech)**

### 3: Women's Day Celebration at NIT AP

National Service Scheme Cell and the Sexual Harassment against Working Women Cell of NIT, Arunachal Pradesh jointly organised International Women's Day at NIT campus with the participation of all the women students and employees. Prof. C.T. Bhunia, Director, NIT AP addressed the gathering emphasising on the empowerment of women in all aspects of their life. He remarked that women should secure their place by their right and should be least dependent on reservation. Equality can be achieved only if women are educationally and economically empowered. These two Es (educationally and economically) are the only way to remove inequality and uplift the women in a society.

The guests for the event Dr. Bombei Tayeng (gynaecologist) and Ms. Nabam Yeni (clinical psychologist) of Government Hospital, Naharlagun spoke on various issues pertaining women's physical and mental health respectively. Dr. Bombei Tayeng highlighted the common health problems affecting women of all ages and the ways to take precaution against them. Ms. Nabam Yeni delivered a talk on how to nourish oneself by managing stress. The Q&A session at the end of the program saw an enthusiastic participation from the students and employees as the guests provided suggestions and solutions for their issues.



**Women's Day Programme**

#### 4. Saraswati Puja Celebrations

The students celebrated Shri Saraswati Puja on 12th February, 2016 in the Institute's Campus.



**SARASWATY PUJA**

#### 5. World Youth Skill Day

The Institute organized the World Youth Skill Day on 15th July, 2015 in seminar hall. The faculty, staffs and students were participated on it and the Honourable prime minister of India addressed this program through live telecast.



## 6. International Yoga Day

The National Institute of Technology, Arunachal Pradesh celebrated the International Yoga day on 21st June, 2015. The faculty, staff members and students participated in the event.



**International Yoga Day Celebration**

## 7. Swachh Bharat Abhiyan:

The Swachh Bharat Abhijan was initiated by our Hon'ble prime minister of India on 2nd October, 2014. The Institute also participated in this campaign in last year. The Institute organized Swachh Bharat Abhiyan campaign on different dates between 22nd June, 2015 to 26th June; 2015, 1st July, 2015



to 4th of July; 2015, 15th August, 2015; 2nd October, 2015 and 1st Nov 2015 and the students, faculty and staff members participated in the event.



**Swachh Bharat Campaign**

### 8. Digital India Week:

As the nation gears up in celebrating digital India week from 1st July'2015, National Institute of Technology, Arunachal Pradesh has also joined in transforming India into a digitally empowered society and knowledge economy. Digital India is intended to inform, educate and engage citizens through organization of events at large number of Digital Points of Presence like CSCs, Post Offices, Industries, Schools, Gram Panchayats and connect all citizens through Digital Media campaigns and events so that vision, services and benefits of the programs could be conveyed. This will help in popularizing and expanding the reach of existing e-services, plan and launch new services as well as educate citizens on functional digital literacy, cyber security, cyber hygiene, ensuring better utilization of digital infrastructure during the "Digital India Week" and beyond.

On the first day, National Institute of Technology has live telecast the launch of Digital India week by Hon'ble Prime minister from Delhi followed by poster completion. Large number of student, faculty and staff participated in the events. Different competitions and workshops for school students

were organized in the week long programme of Digital India Week as given below.

DATE	DAY	PROGRAMME
1 <sup>st</sup> July	Wednesday	Poster competition in title "Implementation of science and technology in Rural and Urban Area".
2 <sup>nd</sup> July	Thursday	Essay competition in title "Digital India".
3 <sup>rd</sup> July	Friday	Debate competition in "Technology as Boon or bane".
4 <sup>th</sup> July	Saturday	PPT "Digital Media".
5 <sup>th</sup> July	Sunday	Flag area competition on different Software (Creative arts).
6 <sup>th</sup> July	Monday	Workshop for school student on "basic Of computers"
7 <sup>th</sup> July	Tuesday	Workshop for school student on "basic of Computers"





**Photographs of Digital Week Celebration**

### 9. Independence Day celebration:

The Institute celebrated Independence Day on 15th August, 2015. The Flag hosting was done by the Director followed by Director's Independence Day message to faculty, staffs and students. The painting competition and cleanness drive were also done on this auspicious day.



**10. (a) Sadbhavana Divas:**

The Institute observed Sadbhavana Divas on 20th August, 2015 on the occasion of birth anniversary of late Prime Minister Mr. Rajiv Gandhi.



**Oath Ceremony on Sadbhavana Divas**



**Oath Ceremony on Sadbhavana Divas**

**(b) Blood Donation:**

The Institute is not only focused to quality Education and Research but also focused to many social services. Blood donation awareness is one of them. The Institute regularly organized blood donation camp in which the faculty members, students and staffs actively took part. In the current academic year, the Institute organized a blood donation camp on 12th September, 2015.

**11. (a) Combined Annual Training Camp**

CATC camp was conducted under the aegis of 5 Assam Battalion at 106 Infantry Brigade ARMY Unit at Tezpur location during 4th September, 2015 to 13th September, 2015. During the camp NCC cadets exhibited top quality disciplines and leadership.

**(b) Combined Annual Training Camp**

CATC camp was conducted under the aegis of 1 Arunachal Pradesh NCC Battalion at 106 Infantry Brigade ARMY Unit at Tezpur location during 14th September to 23th September 2015. NIT NCC cadets has attended CATC-VI camp with full of gail/josh.

The NCC cadets were awarded for Best Cadet competition. The NIT NCC cadets were also awarded 1st, 2nd & 3rd Prizes in the event of Best Firer.



**Opening address by Group Commader**



**Basic arrangements**



**Training Instructions**



Group Commander Conference on 11 September 2015 at 1 AP Battalion, NCC Head Quarter Naharlagun Arunachal Pradesh. Lt Achyuth Sarkar discussed various issues/points with the Group Commander. Like Officer Entry, Soft skill program, Adventure activities, Scholarship scheme and various camps which is under CoC scheme.



## 12. Vigilance Awareness Week

National Institute of Technology Arunachal Pradesh observed a Vigilance Awareness Week from 26th October, 2015 to 31st October, 2015 in collaboration with SJVN Ltd. Hydro Electric Project, Doimukh. In that context NIT Arunachal Pradesh conducted Debate, Essay, and Drawing competition. Students and NCC cadets were actively participated in all the events.



**Bhairab Chandra Patra (M. Tech student) on Debate Competition**



**Neha Tiwari (B. Tech 2nd year, CSE) got 2nd prize in Debate Competition**



**Srikonda Ramababu (M. Tech student)**

### **13. National Unity Day**

National Institute Arunachal Pradesh celebrated Rasthriya Ekta Diwas (National Unity Day) on 31st October, 2015 in the context with Sardar Vallabhai Patal (First Union Home Minister of Republic India) birth anniversary. Pledge taking ceremony and PPT presentation were held at the seminar hall of NIT Arunachal Pradesh. Faculty staff and students have

taken pledge that they will dedicate themselves to preserve the unity, Integrity and security of our nation.



**Srikonda Ramababu (M. Tech student) got prize in PPT Competition**



**Sunny Sagar (B.Tech 4th year student) got 3rd prize in Essay Competition**



**Bhairab Chandra Patra (M. Tech) got 2nd prize in Essay Competition**



**Saranya Mohan S (M. Tech Student) got 1st prize in Essay Competition**

#### **14. Constitutional Day Celebration**

National Institute Arunachal Pradesh celebrated 'Constitution Day' on 26th November, 2015 on the occasion of Dr. B. R. Ambedkar's birth anniversary. The day started with Yoga, Essay writing and pledge taking ceremony by students and NCC cadets. Pledge taking ceremony was concluded with National Anthem.



**Yoga Protocol**



### 15. Advance Leadership Camp VI

Advance Leadership Camp for NCC Cadets from all over India was held at Coimbatore by 4 (TN) Bn NCC, Coimbatore from 20th December, 2015 to 31st December, 2015.

Advance Leadership Camp (ALC) was conducted with a view to expose the cadets to institutionalized training on various aspects of leadership, management, improve communication skills and increased awareness which would able to contribute them on self development, development of society and Nation in an appropriate manner in all spheres.

The aim of the camp was to make the cadets physically tough and mentally agile to develop qualities of leadership to enable them, accept responsibility and inculcate spirit -de-coprs, in them.

The NCC cadets of NIT Arunachal Pradesh participated ALC-VI in Coimbatore Tamil Nadu location. NCC Cadets of NIT Arunachal Pradesh were awarded Gold Medal in National level competition.

#### Opening address





Address by Lecture by Lt Achyuth Sarkar





National level Award winning activity by NIT Arunachal Pradesh NCC Cadet during ALC camp.



## 16. Mini Marathon

Hon'ble Prime Minister of India desired to organize 5 km 'Mini Marathon' under the aegis of MoD in all States of Union India under the celebration of 66th Republic day on 24th Jan 2016 in order to generate a feeling of patriotic sense among the people across the Nation.

The NCC cadets of NIT Arunachal Pradesh participated Mini Marathon held in Itanagar location.



### 17. Republic Day Celebration

66th Republic Day was celebrated in National Institute of Technology Arunachal Pradesh. The celebration started by hosting of the national flag by Director. Then, it was followed by the guard of honour by the NCC Cadets. The social service was also carried out by the NCC cadets. The Director shared his thoughts with the students, faculty and staff members. The celebrations concluded with high tea and sweets packet. NCC Cadets offered Gurad of honour and Drill under the Guidance of Lt Achyuth Sarkar.



### 18. Clean and sanitized India

National Institute of Technology Arunachal Pradesh conducted pledge taking assembly on 26th January, 2016 under the guidance of Lt Achyuth Sarkar. In this context, two separate committees were made for the purpose of clean and sanitized India.

- (a) Students Committee.
- (b) Faculty and staff committee.

#### Pledge taking Assembly





### 19. NCC Certificate Examination

After successful completion of the training offered by the NCC, a cadet is entitled to appear for various NCC certificate examinations. The NCC cadets who have passed various NCC certificate examinations will get various benefits such as employment in armed forces, government jobs etc. Each cadet has to attend a minimum of one 'Annual Training Camp' along with 75% of attendance in NCC classes in order to qualify for 'B' and 'C' certificate examination. These examinations are held at the end of 1st and 2nd year of NCC respectively.

42 Numbers of NCC Cadets out of 52 cadets from NIT Arunachal Pradesh, are going to appear NCC 'B' Certificate examination which will be held in March 2016 under the aegis of MoD.



**NCC Certificate Examination**

### 7.11. Sports Activity

The Institute has its Sports Unit and it is conducting regular sports activities for promoting physical and mental standard of the students by organizing regular programmes in games and sports like: football, volleyball, badminton, basket ball, cricket etc. The Unit also ensures active participation in the inter-NIT sports meet every year and also conducts intra-institutional sports events, athletic meet, cultural programme in the Institute as per academic calendar.

The 5<sup>th</sup> Annual sports meet 2015-16 was held from 22<sup>nd</sup> January, 2016 to 26<sup>th</sup> January, 2016 among the students. The teams were made batch wise (1<sup>st</sup> year B. Tech, 2<sup>nd</sup> year B. Tech, 3<sup>rd</sup> year B. Tech, 4<sup>th</sup> year B. Tech, 1<sup>st</sup> year M. Tech & 2<sup>nd</sup> year M. Tech). In inauguration time, the captain of each team came forward with their respective flag and took part in oath ceremony.

The results of Annual sports meet 2015-16 are given in the table below:

Name of Events	Winner (Boys)	Winner (Girls)
<b>100 m Race</b>	First: Likha Tadh (1 <sup>st</sup> year B. Tech, ECE) Second: Pintu Das (3 <sup>rd</sup> year B. Tech, CE)	First: Berolina Longdhar (1 <sup>st</sup> year B. Tech, ECE) Second: Vishnu Priya (4 <sup>th</sup> year B. Tech, )
<b>200 m Race</b>	First: Himanshu Verma (2 <sup>nd</sup> year B. Tech, CE) Second: Pintu Das (3 <sup>rd</sup> year B. Tech, CE)	First: Vishnu Priya (4 <sup>th</sup> year B. Tech, ECE) Second: Gerik Ete (2 <sup>nd</sup> year, B. Tech, EE )
<b>400 m Race</b>	First: Likha Tadh (1 <sup>st</sup> year B. Tech, ECE) Second: Kadar Yomcha (2 <sup>nd</sup> year B. Tech, EE)	No participant
<b>Shot put throw</b>	First: Pritam Pegu (1 <sup>st</sup> year B. Tech, CHE) Second: Niraj Kr. Singh (M. Tech)	First: Neha Tiwari (2 <sup>nd</sup> year B. Tech, cse) Second: Smita Das (2 <sup>nd</sup> year B. Tech, CSE)
<b>Discuss throw</b>	First: Kishen Kumar (1 <sup>st</sup> year B. Tech, ME) Second: Abishek Kumar (2 <sup>nd</sup> year B. Tech, CE)	First: Berolina Longdhar (1 <sup>st</sup> year B. Tech, ECE) Second: Yase Dusu (2 <sup>nd</sup> year B. Tech, CSE)

Name of Events	Winner (Boys)	Winner (Girls)
<b>Javelin throw</b>	First: Tadar Dinung (1st year B. Tech, BT) Second: Deepak Tamang (4th year B. Tech, EEE)	First: Yase Dusu (2nd year B. Tech, CSE) Second: Neha Tiwari (2nd year B. Tech, CSE)
<b>Badminton (Single)</b>	First: Takup Samnam (1st year B. Tech, ME) Second: Varanasi Sasank (4th year B. Tech)	First: Vidya Gupta (1st year B. Tech, CSE) Second: Smita Das (2nd year B. Tech, CSE)
<b>Badminton (double)</b>	No participant	First: Yase Dusu & Happy Jorang (2nd year B. Tech) Second: Vidya Gupta & Kavita Kumari (1st year B. Tech)
<b>Long Jump</b>	First: Pintu Das (3rd year B. Tech, CE) Second: Rohit Meena (4th year B. Tech)	No participant
<b>Football</b>	First: (4th year B. Tech) Second: M. Tech	No participant
<b>Volleyball</b>	First: (4th year B. Tech) second: (3rd year B. Tech)	No participant



**Inauguration Address of 5th Annual Sports by Prof. P. D. Kashyap**



**Oath Ceremony**



Each captain commanding their respective team





Javelin throw (girls event)



Shotput throw (Girls event)



Faculty and staff members watching the Foot ball game



B. Tech (2nd year) Team



**M. Tech Team**



**All team participated 5th Annual Sports meet of NIT AP**



## 8. Innovations and Emerging needs

### 8.0. Introduction

The National Institutes of Technology (NITs) were established with the mandate to impart higher technical education and also to carry out research work at par with the standards adopted by international universities. In pursuance of achieving excellence at par and meeting the basic objectives of establishing the NITs, this Institute has initiated various innovative measures not seen to be in operation in all newly established NITs. These innovations are meant to do things differently rather than to do different things. It is pertinent to mention here that the ten new NITs are in addition to twenty older NITs existing in the country prior to 2010. The older NITs have since acquired huge experience and have become matured with the passage of time. The ten new NITs are young enough and need to be innovative from the very beginning for achieving excellence. NIT-Arunachal Pradesh has started with a perfect tune and innovative ideas wherever and whenever possible within the existing frameworks of the NIT Acts and Statutes.

The following paragraphs portray a summary of things initiated in NIT-Arunachal Pradesh for stepping in the hall of fame. The motive of doing so is to invite constructive review opinions and suggestions for possible addition, deletion and modifications of current actions of the Institute for steering the wheel in the right direction towards perfect achievements while ensuring an inclusive growth.

### 8.1. Academic Innovations

The Vision and Mission of NIT-Arunachal Pradesh stand on the four pillars viz. EDUCATION, RESEARCH, SERVICE TO SOCIETY and ETHICS. In pursuit of the same, several noble approaches are made in framing syllabi, selecting judicious new disciplines for UG & PG studies, introducing Ph.D. programmes, undertaking social services and adopting country-specific programmes. The following are the details in this regard:

#### **Education in a frame of productive & forward looking syllabi in producing right and prospective engineers for the country**

The UG syllabi are chalked out with unique and distinct compulsory credit courses for all the disciplines, and those are: NCC/NSS to make the students mentally and physically competent; Historiography in Science & Technology

to make future engineers to know about the philosophy and struggle of their great predecessors to establish scientific & technological temper for the societal cause; Values & Ethics to produce future engineers with ethical mind and value-oriented human beings; Design Contest as an attempt to produce Technical Engineers rather than only Academic Engineers within the current framework of the fixed four-year programme; Research Paper Communication to ignite young minds in thought process and research viability; and Environmental Engineering & Disaster Management to provide time-relevant courses to meet emerging needs.

To make the students globally employable and competitive, several excellent courses are offered. These are basically communication skill development papers on English, French, German, Japanese and Chinese. All Electives are made open to students of any and all branches. Now-a-days, employability of students of CSE & IT (for that purpose all other disciplines too) is based on sometimes how much they know about Java, PH P, Ruby rather than that of core subjects. Hence, in order to enhance the employability, which is one of the responsibilities of any Institute of National Importance; add-on courses (non-credit) are offered to the students during vacation/holidays, preferably by the Industrial Houses.

### **Fabulous measures in examination process**

Several bold measures have been introduced or are in process of implanting in the process of revamping the examination system in NIT-Arunachal Pradesh. The measures so undertaken are believed to examine as to how far the students know rather than what they do not know. Besides, engineers should be made to take up design on given problem with available formula and imaginative orientation rather than memorizing of dates, data and quotations. A few noteworthy initiatives already taken up are: setting question paper of more marks (say 140 marks rather than the conventional 100 marks) and asking students to write whatever they can with a maximum given score (for example 100 marks), open book examination in selective mathematics and design oriented papers, and on-line examination in papers of objective type.

### **Catering Industrial flavours in imparting Education**

Since the days of recommendations of Kothari Commission for Institute-Industry interaction, various steps are in operation in different universities through many different ways to realize the concept. However, NIT-Arunachal Pradesh promises to do the interaction through an approach reportedly

never seen hitherto. The big ideas in operation in the Institute are I-course and compulsory industrial training for members of faculty. One paper in each semester of all branches is marked as I-course meaning that at least 50% of the course content of the paper will be taught by an Industrial Expert. In order to meet the challenges of not getting industrial experts for delivering lecture, other way around approach has been adopted in NIT-Arunachal Pradesh. During summer vacation, teachers on rotation are sent to industry for training at least for a month at full cost of the Institute so as to allow them to acquire Industrial experience gradually.

### Inspiring changes through judicious selection of new UG & PG courses

Several research works on technical education systems in India categorically pointed about the spurt of growth of institutes/universities owing to LPG (Liberalization, Privatization and Globalization) adopted in India after 1990s. But the emphatic spurt has resulted in creating several imbalances in the technical education in India primarily due to Private Investment Policy of low investment and high return clubbed with the profit-only motive in most of the cases. The disciplines, popularity in respect which is increasing in leaps and bounds, are low investment and service-oriented courses like Computer Science & Engineering, Information Technology and Electronics & Communication Engineering. Mother Core Sector engineering and high investment disciplines of Mechanical Engineering, Civil Engineering and Electrical Engineering are pathetically ignored. Any Institute of National Importance must act to correct this imbalance and, therefore, NIT-Arunachal Pradesh has started B. Tech programme in Mechanical Engineering and Civil Engineering in 2013-14. At the same time, the Institute does not like to ignore the emergent areas for taking a giant leap forward. It has also started M. Tech in Mobile Computing & Communication Engineering, being one of the most promising and emergent fields, in 2013-14.

NIT-Arunachal Pradesh taking a bold decision has introduced M. Tech programme on Appropriate Technology & Entrepreneurship Practice in 2013-14 as a sole course in collaboration with the National Institute of Rural Development, Hyderabad. Several studies and statistics predict that the unemployment of engineering graduates in India will be a social crux and may be highly dismissive for engineering education in India to flourish and progress. As of today, around 40% engineering graduates are either jobless or in job with under-paid monthly emoluments. Most of the employed engineers suffer from frustration due to lack of job-satisfaction and lack of

innovative strategies of the employers. In the age of LPG (Liberalization, Privatization and Globalization), it was predicted that the BRIC countries (i.e. Brazil, Russia, India and China) will be the power-centres to reckon with. The fact is that except in respect of China, it is difficult to believe that the prediction has come true. China has progressed based on several innovative measures one of which is the revolution in entrepreneurship in manufacturing sectors with global market. India has not progressed much in entrepreneurship in manufacturing industries, although it has some impacts only in service sectors that too basically in IT sectors. Therefore, it will be a wise approach either to introduce noble new M. Tech programme in India to tackle the gaps mentioned above. Today in India, there is a need to produce engineers who will create jobs rather than running after jobs. At the same time, in India, one important unattended sector is appropriate technology relevant to rural, cultural and environmental development. A little attention has so far been given to bamboo technology, low cost & local made farming technology, rural home-made food processing technology, bio-gas technology, renewable energy resources, and environment and sustainable development. In order to address both the issues mentioned above, an innovative M. Tech programme on Appropriate Technology & Entrepreneurship Practice (AT & EP) has been started from 2013-14 as mentioned above. The 'Think Tank' of the Institute is also seized of the need of other aspects of inclusive growth in the present-day scenario.

Institute vision focuses to impart knowledge and essence of bio-technology in fundamental subjects such as molecular biology and other related areas, coupled with research applications for the improvement of life and sustainable development. The entire North-East of India including Arunachal Pradesh is rich with large number of flora and fauna. To explore the medicinal qualities of these floras, the NIT Arunachal Pradesh started a new B. Tech programme in Bio-technology from academic session 2014-15.

Electronic products are extensively used throughout the world - practically all the fields ranging from domestic appliances to space research. It has been made possible by the invent of semiconductors. VLSI has miniaturised the instrumentation for control and services. While taking an innovative lead, the NIT-Arunachal Pradesh has started a new M. Tech programme in Electronics Design & Manufacturing (EDM) from July 2014-15. This programme is focussing on the design and manufacturing of electronic devices. It includes electronic hardware design and manufacturing for IT,

Telecommunications, Defence, Medical, Industrial, Automotive, Consumer products & applications, components & accessories of computers etc..

National Institute of Technology-Arunachal Pradesh offers online MBA program since July, 2014. The curriculum is constantly updated with the dynamic global and Indian environment. Learning is further enhanced by information technology that connects students to resources and data around the globe. The approach to management education is founded on continuous innovation, development of practical knowledge and a relentless commitment to academic excellence. The online MBA programme has been chalked out keeping in view the industry dynamics and the changing economic scenario of the world. This online course will facilitate a wide flexibility to various groups of aspirants of higher education like (a) working people (b) economically backward candidates (c) those who are not getting opportunity to earn PG degrees in conventional mode of education. The online MBA students never miss out on interaction with any students/faculty members even if they do not meet each others. Faculty members and students communicate via instant message, email, phone, video-conferencing and online discussion.

The Environmental issue is the widely discussed topic globally in recent past. The environmental pollution caused due to the fossil fuels is the one of the alarming issue. Most of the country required energy to sustain their developmental programmes. The energy sector came mostly from the fossil fuels which enhances the environmental concern. The developed countries put pressure on developing countries like India to reduce the use of fossil fuels. Therefore, most of the countries are now focusing green energy or renewable energy with proper energy managements. In this regard, NIT Arunachal Pradesh took a initiative and introduced a new M. Tech Programme in 'Renewable Energy & Energy Management' in its academic curriculum from 2015-16. The aim of the course is to focus how to achieve various renewable energies and their proper management or utilization. A new B. Tech Programme in Chemical Engineering is also introduced to focus environment related issues in various industries. Now a days, most of the work is done by simple pressing a mouse i.e, via computer applications and internet. The Hon'ble Prime Minister of India has also focused to make Digital India. This Institute introduced a new M. Tech Programme in Computer Science & Engineering from 2015-16. The objective of this course is to explore computer science in daily applications. Three new MS programmes in 'Mathematics & Computing,' 'Mathematical Research in Engineering & Technology,' and Mathematical Physics started from 2015-

16. The objectives of all MS programmes are to provide advanced knowledge in basic and applied science so that students will choose their carriers in these fields.

### **Integrating Engineering into the process of Sustainable Development**

Engineering is the professional art of applied science for the optimum conversion of natural resources to the uses of mankind through a sustainable approach. This may be achievable by professional engineers through application of improved skills and modern technologies. Engineers have the obligations to work for enhancement of health, safety and social welfare of both the local and global community through the practice of sustainable development. Since public health and safety is fully dependent on engineering judgments, assessments of risk, decisions and practices incorporated into structures, machines, products, processes and devices, they are responsible and accountable to their assigned duties. Engineers are to embrace a wide range of additional skills beyond those traditionally relied upon by them. This will require changes in the way in which engineering education prepares students for professional practice. Every engineering discipline is engaged in sustainable design, employing numerous initiatives through new policy and regulatory innovations. The design must consider short and long-term impacts. A device must be designed to meet the criteria for performance, aesthetics and price. Green engineering attempts to achieve four goals viz. waste reduction, materials management, pollution prevention and product enhancement. It encompasses numerous ways to improve processes and products to make them more efficient from an environmental standpoint.

### **Ethical roles of Engineers**

Engineering ethics aims at understanding the moral values that ought to guide engineering practice, resolving moral issues and justifying moral judgments concerning engineering. It is the field of applied ethics and system of moral principles that apply to the practice of engineering. The field examines and sets the obligations by engineers to society, to their clients and to the profession. It includes currently accepted codes and standards of conducts endorsed by various groups of engineers and Engineering Societies. By transforming the natural resources for the benefit of mankind, the engineer must increase his/her awareness of the world as the abode of living creatures. An engineer should reject any proposal having potential to harm the general interest, thus avoiding a situation that might

be hazardous or threatening. It is an inescapable duty of the engineer to uphold the prestige of the profession, to ensure its proper discharge and to maintain a professional ethics with the consciousness of individual well-being subordinate to the social good. The engineer must ensure continuous improvement of his/her knowledge, particularly of his/her profession; disseminate his/her knowledge & share his/her experience; provide opportunities for education and training of workers; provide recognition and moral & material support to the Institutes where he/she studied, thus returning the benefits and opportunities he/she has received. As members of this profession, engineers are expected to exhibit the highest standards of honesty, integrity, impartiality, fairness, equity and dedication to protection of the public health, safety and welfare.

### **Forward thinking research activities**

NIT-Arunachal Pradesh has taken up challenges to create potential and productive research culture in the Institute in the process of which notable exercises are: introduction of Ph. D. programmes in Computer Science & Engineering, Electronics & Communication Engineering, Physics, Chemistry, Mathematics and Management; regular organization of research conferences including the North-Eastern Regional Science Congress in the centenary year of Indian Science Congress Association (proposals have been sent for organization of Annual Convention of Indian Society for Technical education is scheduled to be in 2016); publication of regular bi-annual journal called International Journal on Current Science & Technology; encouraging and sponsoring members of faculty to enrol as members of scientific & professional societies like IEEE, IETE, IE(I), ISTE and ISCA leading to creating sections/chapters in short future. Lots of accolades are achieved in research productivity in NIT-Arunachal Pradesh [e.g. in 2011, two Professors / Assistant Professor visited USA, Italy and Jordan to present research papers and to chair technical session; in 2012, two Professors / Assistant Professor to visit USA for the same function in 2013-14, four faculty members visited USA and in 2014-15, three faculty members visited USA, South Korea and Mexico to attend International Conferences; in 2015-16, two faculty visited Russia to present their research works; and many Professors have published research papers in leading national & international journals.

### **Developing resourceful laboratories & libraries**

NIT-Arunachal Pradesh has left no stone unturned in installing the state of the art laboratories and those are: English Communication Laboratory,

Computing & Network Laboratory, Campus Wi-Fi connectivity, Video Conferencing & other ten laboratories in the last two years with M. Tech class room with computer plus NET facilities to each student. The library is immensely resourceful as is evident from the following Table of comparison based on data available in different websites.

**Table: Books per student available in libraries of leading Universities/Institutions**

Sl. No.	Name of the Institute/ University	Total number of students(*)	Total number of books in library(*)	Book collection per student(*)
i	Stanford University, California	19,945	13,10,000	65.68
ii	IIT-Khargpur	6,450	3,00,000	46.51
<b>iii</b>	<b>NIT- Arunachal Pradesh</b>	<b>599</b>	<b>27042</b>	<b>45.15</b>
iv	IIT- Bombay	5,700	2,28,077	40.01
v	MANIT- Bhopal	4,000	1,40,719	35.18
vi	MNNIT- Allahabad	3,179	1,04,382	32.83
vii	IIT- Guwahati	3,900	1,17,000	30.00
viii	NIT- Agartala	2,200	34,000	15.45

(\*) Data in respect of the other Institute are being updated

### Fast Track students' activities

The Institute has provided enough encouragement to its students with partial financial support to make them enrolled as IEEE student members following which petition has been submitted for opening students' branch at NIT-Arunachal Pradesh. On every year on Technology Day on 9th May, the Institute has decided to organize National Students' Essay Contest with best essays awarded with (i) cash prizes and (ii) publication of the proceedings containing the selected essays. As a matter of bringing togetherness and to bring respect for seniors as well as confidence in juniors, senior students are encouraged to teach juniors on some selected topics of course papers. The approach is believed to decrease/minimize conflicts between seniors and juniors often common in universities particularly on egoistic issues. NSS/NCC chapter has been opened in the Institute under the banner of which students do take part in plantation and beautification programmes locally in Yupia. Students have organized three blood donation camps in the last three years.

### Regular symposium of Visiting Professors

In each semester, a conclave of eminent professors from leading universities is initiated to supplement the regular teaching process and also to have interaction by teachers for research direction. A few distinguished professors invited for such conclave are: Prof S. C. Dutta Roy, IIT- Delhi; Prof S. L. Maskara, IIT-Kharagpur; Prof Ajit Pal, IIT- Kharagpur; Prof P. K. Basu, University of Calcutta; Prof Atal Chowdhuri, Jadavpur University; and Prof Karmeshu, JNU, among others.

### 8.2. Administrative Innovations

Administrative reforms and innovations in NIT-Arunachal Pradesh go in tandem with those of academics so as to achieve maximum benefits. Administrative philosophy adopted by the Institute is binary : "0" for love, affection and humanitarian attitude with zero action while activities are performed to meet the defined objective in the framework of prevailing rules & regulations; and "1" while action is stringent when given function has failed to meet the targeted goal with non-acceptable pretext. The Institute categorically rejects the common excuse of not doing things on the pretext of having no time as its philosophy of time management is that *"Busy men always get time to execute; but it is the idle men only who do not get time."* Accordingly, innovative practices introduced in NIT-Arunachal Pradesh are brought out hereunder.

#### Six days a week

NIT-Arunachal Pradesh is following the practice of 'six days a week' in the first three/four weeks of a month, followed by holiday of the last week clubbed with cumulative 3 or 4 days compensatory leave for working on Saturdays/Sundays/Holidays of the previous weeks. The process has got multiple benefits of providing a substantial period of holiday at a stretch at least once in a month to the employees and students from distant places to enable them to go home for family togetherness without disturbing the effective continuity of teaching & learning process with a small gap for avoiding monotony and providing a short break in studies.

#### Practice of E-office

NIT-Arunachal Pradesh is in the process of being transformed into a paperless office. Most of the communications are made by and through e-mails. ERP solutions are to be installed for complete automation of the offices in near future.

### Greenovations

Plenty of initiatives are implanted to make NIT-Arunachal Pradesh a zero-tolerance zone so far as the noise and pollution are concerned with the facilities of in-built waste disposal and energy conservation in place. The present temporary campus has an installed captive solar power plant of 100 kw serving all the purposes of energy requirement. This is reported to be the first of its kind in the entire North-Eastern region. Necessary plan has been sanctioned to make the permanent campus (at Jote) a fully solar powered, earth-quake resistant, in-built waste disposal system with possible bio-gas plant and water recycling plant. Cost escalation for such a planned and noble campus is of course a matter of concern. The permanent campus is proposed to have a tram line communication with conventional vehicles deployed at the entrance only. The proposal is meant to make the campus less noisy and pollution-free.

### Attitudinal U-turn

NIT-Arunachal Pradesh believes to see half a glass of water as half-full rather than half- empty. Institute's authorities have since given verbal directions to all concerned to review and analyze all & every proposal with positive attitude as far as practicable. It has been categorically instructed all in the administration and academics to behave like Teachers rather than as Officers; but that does not mean any deviation from the existing rules and regulations. It envisages that if the reply in response to anything is "NO", the same is to be expressed as "NOT BEING POSSIBLE, PLEASE."

### Continuous encouragement

NIT-Arunachal Pradesh is in the practice of yearly award of best teacher, best student and best employee on performance matrix. The practice is to reward for good works. The Institute believes in rectification and, therefore, there is only 'Reward' scheme and no 'Punishment' scheme. The punishment scheme is rectification, providing suitable counselling and further renewed opportunities to excel.

### Innovation and Best practices survey

A	Academic Honesty and Integrity	N	Open book examination
B	Assessment and Grading	O	I -Course (industrial course).
C	Collaborative learning spaces	P	Add on course ( Summer and winter course, Recent cutting Edge Technology, Advance computing)

D	Course Development	Q	Man making and service to society oriented compulsory credit courses of NCC/NSS, values & ethics
E	Critical Thinking	R	Compulsory audit course on entrepreneurship for all branches
F	Education philosophy	S	Research and imagination building courses such as Research Paper Communication.
G	Best for Teaching	T	Design Course as "Creative Design".
H	Best for Research	U	Contemporary and structured syllabus
I	Best for Entrepreneurship and Innovation	V	Distinguished visitor professor scheme
J	Best for service to Society	W	Students feedback
K	J.C.Bose Model of teaching where practice is the first theory	X	Director's assessment on course coverage through data received from students
L	S.N.Bose model of teaching where theory is the first practice	Y	Director's initiation for ensuring of course handout
M	Online examination	Z	Feedback of student's attendance and mid semester marks information to the concerned parents

**Table-1: Feedback given by the faculty members on Innovation and Best practices survey**

Parameters		Mean value out of 5 point scale
A	Academic Honesty and Integrity	4.28
B	Assessment and Grading	4.13
C	Collaborative learning spaces	4.07
D	Course Development	4.13
E	Critical Thinking	3.94*
F	Education philosophy	4.00

Parameters	Mean value out of 5 point scale
G Best for Teaching	4.00
H Best for Research	3.44*
I Best for Entrepreneurship and Innovation	3.75*
J Best for service to Society	4.22
K J.C.Bose Model of teaching where practice is the first theory	4.28
L S.N.Bose model of teaching where theory is the first practice	4.37
M Online examination	4.15
N Open book examination	3.69*
O I-Course (industrial course).	3.85*
P Add on course ( Summer and winter course, Recent cutting Edge Technology, Advance computing)	3.91*
Q Man making and service to society oriented compulsory credit courses of NCC/NSS, values & ethics	4.18
R Compulsory audit course on entrepreneurship for all branches	4
S Research and imagination building courses such as Research Paper Communication.	3.88*
T Design Course as "Creative Design".	3.81*
U Contemporary and structured syllabus	3.94*
V Distinguished visitor professor scheme	4.28
W Students feedback	3.94*
X Director's assessment on course coverage through data received from students	4.31
Y Director's initiation for ensuring of course handout	4.41
Z Feedback of student's attendance and mid semester marks information to the concerned parents	4.19

41 faculty members participated in this survey.

\* Low Mean value in between 3.44 to 3.95 (out of 5 point scale).

**Table-2: Feedback given by the students on Innovation and Best practices survey**

Parameters		Mean value out of 5 point scale
A	Academic Honesty and Integrity	3.3
B	Assessment and Grading	3.5
C	Collaborative learning spaces	3.1
D	Course Development	3.2
E	Critical Thinking	3.0*
F	Education philosophy	3.1
G	Best for Teaching	3.2
H	Best for Research	2.8*
I	Best for Entrepreneurship and Innovation	2.8*
J	Best for service to Society	3.2
K	J.C.Bose Model of teaching where practice is the first theory	3.1
L	S,N,Bose model of teaching where theory is the first practice	3.1
M	Online examination	3.3
N	Open book examination	3.6
O	I -Course (industrial course).	3.1
P	Add on course ( Summer and winter course, Recent cutting Edge Technology, Advance computing)	3.0*
Q	Man making and service to society oriented compulsory credit courses of NCC/NSS, values & ethics	3.3
R	Compulsory audit course on entrepreneurship for all branches	3.2
S	Research and imagination building courses such as Research Paper Communication.	3.3
T	Design Course as "Creative Design".	3.2
U	Contemporary and structured syllabus	3.3
V	Distinguished visitor professor scheme	3.4

Parameters		Mean value out of 5 point scale
W	Students feedback	3.6
X	Director's assessment on course coverage through data received from students	3.4
Y	Director's initiation for ensuring of course handout	3.3
Z	Feedback of student's attendance and mid semester marks information to the concerned parents	3.4

359 students participated in this survey

\* Low Mean value in between 2.8 to 3.0 ( out of 5 point scale) .

### **Comparative study on Innovation and Best practices survey**

Comparison of results are presented in Table no.-1 and 2 for faculty members and students based on mean values respectively.

Comparison of results are presented in figure no.-1 and 2 for faculty members and students based on percentage in pie chart.

Comparison of results for Faculty members vs. students are presented in figure no.-3 based on Bar graph.

The results show that faculty members ( 41 participated) rated high scores above 4 (4 = Good impact out of 5 point scale ) all the factors except Students feedback (3.94) , Contemporary and structured syllabus (3.94), Design Course as Creative Design(3.81), Research and imagination building courses such as Research Paper Communication (3.88) , Add on course (3.91), I-Course (industrial course)(3.85)., Open book examination(3.69), Best for Entrepreneurship and Innovation (3.75), Best for Research(3.44), and Critical Thinking(3.94). As a whole, the results show that faculty members are more aware of these programs and, showed their sincerity and commitment. However it requires more attention on these factors Students feedback (3.94) , Contemporary and structured syllabus (3.94), Design Course as Creative Design(3.81), Research and imagination building courses such as Research Paper Communication (3.88) , Add on course (3.91), I-Course (industrial course)(3.85)., Open book examination(3.69), Best for Entrepreneurship and Innovation (3.75), Best for Research(3.44), and Critical Thinking(3.94).

The results of the Students (359 students participated) show that the students rated above 3 (3 = Acceptable impact) all the factors except Best for Research (2.8), Best for Entrepreneurship and Innovation(2.8) and Add on course(2.89). It shows that students are aware regarding this program but requires more attention some of the factors as like Best for Research (2.8) and Best for Entrepreneurship and Innovation (2.8). To make it grand success it requires more awareness and effective implication of these programs. It requires joint initiatives as well as active participation both from faculty members and students to make it more successful and significant.

**Feedback given by the students on Innovation and Best practices (Based on percentage)**

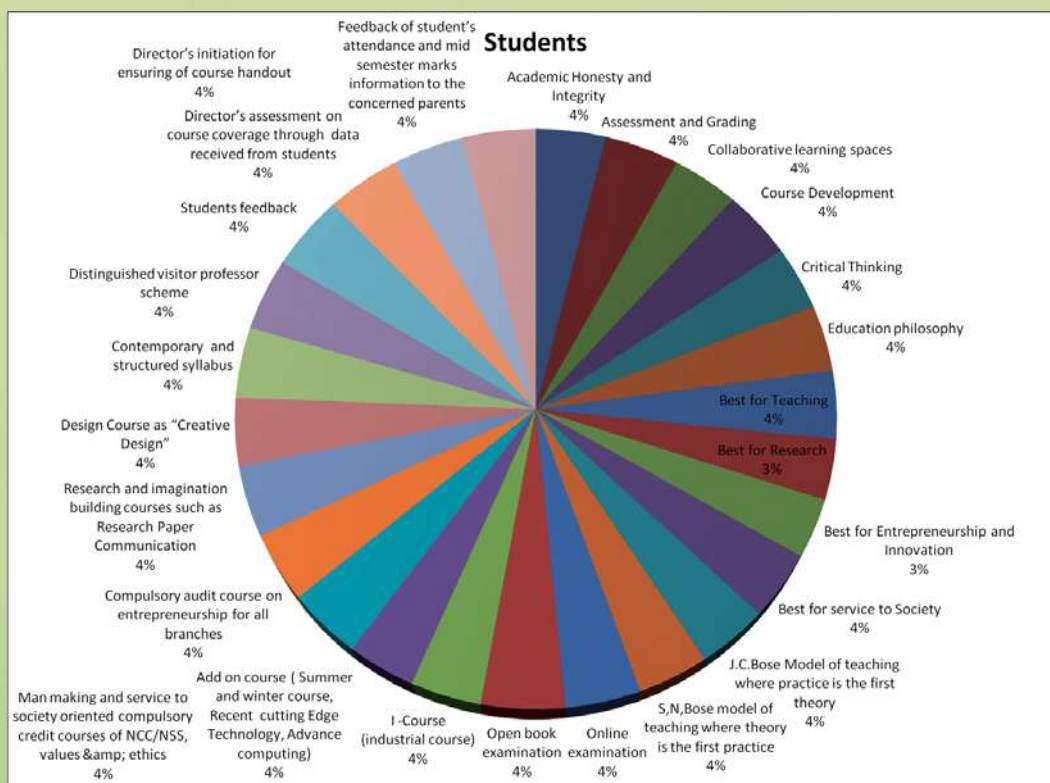


Figure-1

### Feedback given by the faculty members on Innovation and Best practices (Based on percentage)

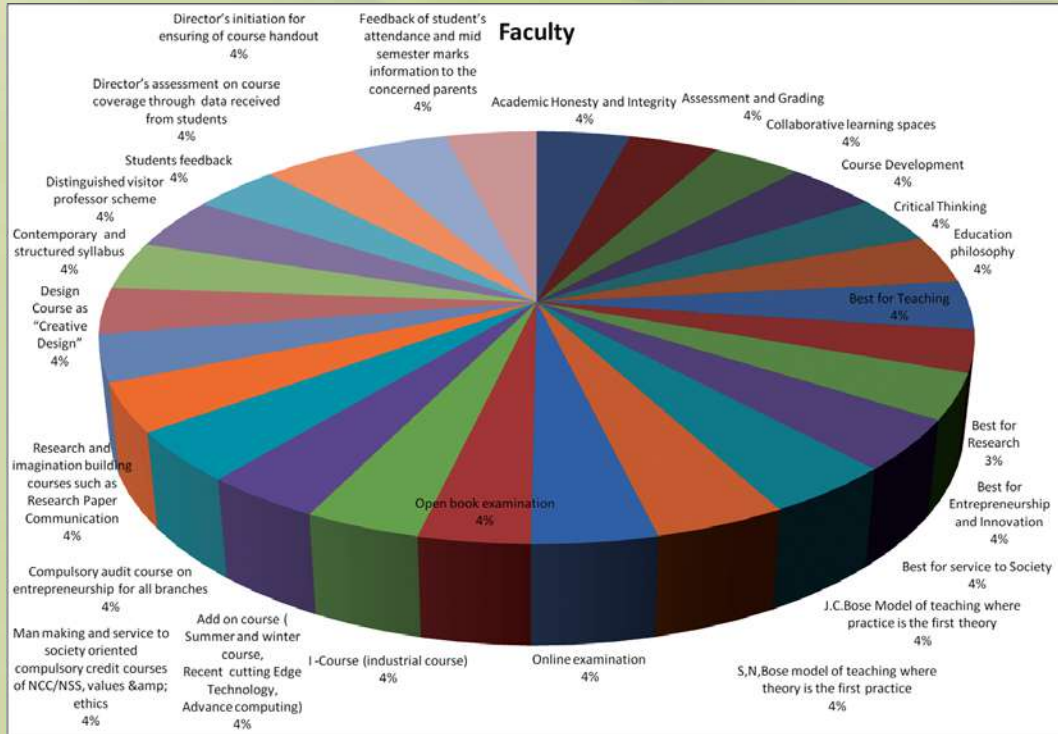


Figure-2

### Comparison study Faculty members Vs. Students (Bar graph)

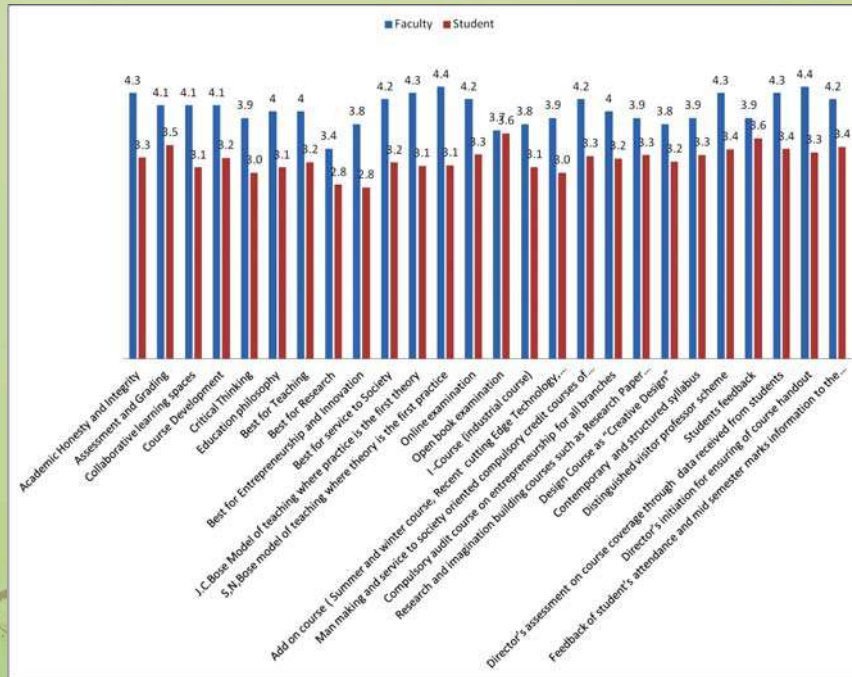


Figure-3

### 8.3. Conclusions

It is the goodness and hard work of the members of faculty, officers, members of staff and students that NIT-Arunachal Pradesh is in continuous practice of doing innovations in chain to become second to none. Their art of converting difficulties into opportunities and the attitude of "never say no" have made the Institute to do such splendid works in a short span of seven (7) years logically and practically during a period of four and half a years. To NIT-Arunachal Pradesh: "Yesterday is Memory, Today is Gift and Tomorrow is Hope." To fulfil the cherished hopes and aspirations, the Institute pledges support, review decision and constructive criticism from readers towards redefining the practices for greater societal benefits and to reach the sky which is the only limit to NIT-Arunachal Pradesh.



## 9. MISCELLANEOUS

### 9.0 Introduction

Various other important issues pertaining to the Institute are brought out hereunder in a succinct form.

### 9.1 Remedial Measures

The Institute has already set up certain units/cells for properly handling the following items of works which are of very much importance in the smooth functioning of the administration of an '*Institute of National Importance*':

#### Prevention of Sexual Harassment

The sexual harassment cell functioning in the Institute is maintaining a vigilant watch on any untoward incident which may outrage the modesty of girl students or lady employees or women family members of the employees. Till date, no such incident has come to the notice. The cell is functioning under the Chairmanship of Ms. Yaka Bulu, Assistant Professor, Electronics & Communication Engineering, along with other supporting members.

#### Prevention of harassment towards SC/ST

There is a cell for prevention of harassment towards SC/ST students and employees etc. in the Institute. The cell is keeping watch on all of them. The cell is headed by Shri Rajen Pudur, HoD, Electrical & Electronics Engineering Department.

#### Online/Offline Public Grievances

The Institute has a Public Grievances Cell which handles all the cases of grievances received from the students and employees of the Institute. Dr. M. K. Shome, Associate Professor, MH Department is the Co-ordinator of this Cell.

#### Online/Offline RTI Matters

A RTI Cell is functioning under the supervision of Rajat Subhra Goswami, Assistant Professor, Computer Science & Engineering Department. The Appellate Authority of the Institute is Dr. Pinaki Chakraborty, Dean In Charge (R&D). Details are as under:

**Sh. Taba Tadhe Goyang****Designation:** Central Public Information Officer (CPIO)**Email:** cpio@nitap.in**Contact:** 0360-2284801 (O),  
09436634198 (M)**FAX No.:** 0360-2284972**Dr. Pinaki Chakraborty****Designation:** First Appellate Authority**Email:** pchakraborty.ece@nitap.in  
pinakichk@gmail.com**Contact:** 0360-2284801 (O),  
09436271840 (M)**FAX No.:** 0360-2284972**Dr. Naba Kumar Pramanik****Designation:** Transparency Officer**Email:** pramaniknaba@gmail.com; nkpramanik.chem@nitap.in**Contact:** 0360-2284801 (O), 09436271050 (M)**FAX No.:** 0360-2284972**Care for Physically Handicapped Persons**

The Physically Handicapped Persons Care cell is instrumental in ensuring that the physically handicapped students do not face any problem in attending classes and going to or staying in hostels in this hilly region. The cell also fixes all the cases of problem being faced by physically handicapped students and employees of the Institute. Shri Swarnendu Chakraborty, Assistant Professor, CSE Department is the Co-ordinator of the Cell.

**Anti-Ragging Unit**

The Institute and its campus as well as the hostels are totally free from the menace of ragging. The Cell is keeping a strict watch and vigilance on the state of affairs in this regard. Prof. P. D. Kashyap (for day-time) and Shri Mohit Kr. Dey (for night-time) are the Chairman of the Cell.

**9.2. Security arrangements**

Security of the campus of the Institute is being maintained through outsourcing Mr. Debia Amos Tara, Security Officer is responsible for maintenance of security and sorting out the law and order problems in the campus. He is at present supported by one Assistant Security Officer, one Security Supervisor, ninety-five Security Guards (including the Lady Security Guards for girls' hostels) and ten Arms Security Guards. Twelve out of these ninety-five Security Guards are always provided to our permanent campus Jote for the necessary security arrangement of the infrastructure present there. Walky-talky has been provided to the security

personnel for smooth functioning of the security system. The existing security team is also responsible for running rescue operations in the campus in case of any accident or natural disaster.

### 9.3. Medical attention

Necessary arrangements of medical facilities have been provided by the Institute round the clock in the campus including the Academic block and Residential block. One ambulance always remains present in the campus so as to tackle all types of emergencies. Necessary tie-ups have been made with the important hospitals (Government & Private) and Nursing Homes in the adjoining area. Suitable counselling is provided to the students so as to enable them to overcome any stress. Necessary steps have also been taken to ensure confidence building among the students so that they can continue their studies in a tension-free ambience. A student Counsellor (Psychiatrist) was assigned to visit all hostels regularly. The counsellor visited hostels and counselled students how to overcome from their depressions.

### 9.4. Scholarship to SC/ST & Minority students

The Institute is providing scholarships to SC/ST and minority students and merit-cum-mean scholarships to the meritorious students. The Institute is also planning for grant of waiver in fees to the deserving students. The scholarship section is being headed by Ms. Yang Saring, Asst. Professor, Electronics & Communication Engineering.

### 9.5. Physical Verification Committee

The Institute has set up a Physical Verification Committee in 2014. The Committee is aimed at verifying the bills/challans of various physical items, laboratory instruments of all the academic departments of the institute. The chairman of the Committee is Dr. Sanjeeb Meetya, HoD, ECE Department. The other members of the committee are Dr. Pratap Kumar Swain, HoD, PCES Department and Dr. Susanta Maity, HoD, Mathematics Department.

### 9.6. Liaison Officer

In compliance with the instructions issued by the Govt. of India on reservation of posts for persons belonging to SC/ST/OBC/PH category in government services, Shri Koj Sambyo, Assistant Professor, CSE Department has been designated to function as the common Liaison Officer of the Institute. He is to oversee compliance of the reservation orders issued in favour of SCs/STs/OBCs/PHs, for ensuring prompt disposal

of grievances, and to scrutinize and consolidate relevant statistical data. In the performance of his duties, he is to collect necessary information/ documents on the relevant subject from the Administration Unit of the Institute for ensuring strict compliance of the Rules and Regulations of the Govt. of India in this regard. Mobile no. is (+91)9436270039 and E-mail id of Shri Sambyo is [sambyo.koj@gmail.com](mailto:sambyo.koj@gmail.com).

### 9.7. Sports Activities

The Institute has its Sports Unit and it is conducting regular sports activities for promoting physical and mental standard of the students by organizing regular programmes in games and sports like, football, volleyball, badminton, basket ball, cricket etc. The Unit also ensures active participation in the inter-NIT sports meet every year and also conducts intra-institutional sports events, athletic meet, cultural programme in the Institute as per academic calendar.

### 9.8. Annual Report

The Institute started functioning in 2010 under the mentorship of NIT-Durgapur and the arrangement continued till 31.10.2011. The Annual Reports of 2010-2011, 2011-12, 2012-13, 2013-14 and 2014-15 prepared by the Institute and approved by the Board of Governors in its 5th, 8th, 11th and 13th meeting respectively, have been forwarded to the Ministry of Human Resource Development, Government of India. Dr. Pratap Kumar Swain, Assistant Professor, PCES Department is the Chairman of the Committee set up in respect of the Annual Reports of this Institute.

### 9.9. Celebrations

The Institute celebrates the Independence Day Ceremony on 15th August and Republic Day Ceremony on 26th January every year in a colourful manner. The National Flags are hoisted with due honour in the presence of dignitaries. Photographs of the celebrations are attached below:





**Independence Day Celebration**

### 9.10. National Integration

In the National Institute of Technology, students of all the States and Union Territories of India are studying as per the existing scheme of admission approved by the Government of India. NIT-Arunachal Pradesh has become a miniscule India with students from all the parts of the country. The students arrange various cultural programmes which provide a wide range of colourful regional flavour with an overall fusion of national taste and federal character. The students from all the parts of the country are mixing up with each other and they share various ethnic cultures, regional practices, ethical norms, societal behaviour and religious experiences while promoting the spirits of National Integration. This is the stepping stone to become the perfect citizens of India.





**SECTION - B**





## 10. INSTITUTE'S AUTHORITIES (2015-16)

### I – Board of Governors

<b>Chairperson</b>	1	Dr. Gangan Prathap, Chairperson, Board of Governors, NIT-Arunachal Pradesh and Director, NISCAIR, New Delhi E-mail ID: <a href="mailto:gp@niscair.res.in">gp@niscair.res.in</a>
<b>Member (Ex-officio)</b>	2	Prof. (Dr.) C T Bhunia Director, NIT-Arunachal Pradesh, Po - Yupia, Dist. -Papum Pare, Arunachal Pradesh - 791112. E-mail ID: <a href="mailto:directornitap@gmail.com">directornitap@gmail.com</a>
<b>Members</b>	3	Additional Secretary (T), D/o. Higher Education, MHRD, Govt. of India, Shastri Bhawan, "C" Wing, New Delhi E-mail: <a href="mailto:technicalsection3@yahoo.co.in">technicalsection3@yahoo.co.in</a>
	4	Joint Secretary (IFD), D/o. Higher Education, MHRD, Govt. of India, Shastri Bhawan, "C" Wing, New Delhi E-mail: <a href="mailto:internalfinance1@gmail.com">internalfinance1@gmail.com</a>
	5	Dr. Tejum Padu, Director of Higher Education, Govt. of Arunachal Pradesh, Itanagar, Arunachal Pradesh, E-mail ID: <a href="mailto:tejum_arunachal@yahoo.com">tejum_arunachal@yahoo.com</a>
	6	Dr. Rita Chowdhury, Associate Professor, Cotton College, Guwahati, Assam, E-mail: <a href="mailto:reetachowdhury@gmail.com">reetachowdhury@gmail.com</a>
	7	Er. Bora Ete Chief Engineer, PWD,

Govt. of Arunachal Pradesh, Itanagar,  
Arunachal Pradesh  
E-mail ID: [boraete@gmail.com](mailto:boraete@gmail.com)

- 8 Dr. Mihir Kumar Shome  
Associate Professor,  
NIT- Arunachal Pradesh  
E-mail: [prof.mihir.shome@gmail.com](mailto:prof.mihir.shome@gmail.com)
- 9 Dr. Pinaki Chakraborty  
Assistant Professor,  
NIT- Arunachal Pradesh  
E-mail ID: [pinakichk@gmail.com](mailto:pinakichk@gmail.com)
- 10 Air Cmde (Retd.) Ajay Kumar  
Registrar, NIT Arunachal Pradesh  
E-mail : [deputyregistrar@nitap.in](mailto:deputyregistrar@nitap.in)

## II - SENATE

### Chairman

- 1 Prof. (Dr.) C T Bhunia  
Director, NIT-Arunachal Pradesh,  
Po - Yupia, Dist. - Papum Pare,  
Arunachal Pradesh - 791112.  
E-mail ID: [directornitap@gmail.com](mailto:directornitap@gmail.com)

### Members

- 2 Prof. Dr. Dilip Kumar Sinha  
Former Vice-Chancellor,  
Visva Bharati University,  
Santiniketan, West Bengal, India  
E-mail ID:  
[dilipkumarsinha@rediffmail.com](mailto:dilipkumarsinha@rediffmail.com)
- 3 Prof. Dr. Swapan Bhattacharjee  
Professor, Computer Science &  
Engineering, Jadavpur University,  
Kolkata & Director, NIT-Suratkal  
E-mail: [bswapan2000@yahoo.co.in](mailto:bswapan2000@yahoo.co.in)
- 4 Dr. Surabhi Banerjee  
Former Vice-Chancellor,  
Central University of Odisha  
E-mail ID:  
[surabhibanerjee2008@gmail.com](mailto:surabhibanerjee2008@gmail.com)

- 5 Dr. S. Bandyopadhyay (Invitee)  
Former Vice-Chancellor,  
WBUT, Kolkata  
E-mail ID: [skb1@vsnl.com](mailto:skb1@vsnl.com)
- 6 Prof. Dr. R. N. Bera (Invitee)  
Sr. Professor, Sikim Manipal  
University, Sikim  
E-mail ID: [rbera50@gmail.com](mailto:rbera50@gmail.com)
- 7 Dr. Mihir Kumar Shome  
Associate Professor,  
NIT Arunachal Pradesh,  
E-mail: [prof.mihir.shome@gmail.com](mailto:prof.mihir.shome@gmail.com)
- 8 Dr. Pinaki Chakraborty  
DIC (R&D), Asst. Professor, Physics,  
NIT Arunachal Pradesh  
E-mail ID: [pinakichk@gmail.com](mailto:pinakichk@gmail.com)
- 9 Dr. Nabakumar Pramanik (Invitee)  
DIC (F&A), Asst. Professor,  
Chemistry, NIT Arunachal Pradesh  
E-mail ID: [pramaniknaba@gmail.com](mailto:pramaniknaba@gmail.com)
- 10 Dr. U. K. Saha (Invitee)  
DIC (A&E), Asst. Professor,  
Mathematics, NIT Arunachal  
Pradesh  
E-mail ID: [uksaha.math@nitap.in](mailto:uksaha.math@nitap.in)
- 11 Sri Mohit Kumar De (Invitee)  
Assistant Librarian, NIT- Arunachal  
Pradesh  
E-mail: [mohitde79@gmail.com](mailto:mohitde79@gmail.com)
- 12 Air Cmde (Retd.) Ajay Kumar  
Registrar, NIT Arunachal Pradesh  
E-mail : [deputyregistrar@nitap.in](mailto:deputyregistrar@nitap.in)

### III - FINANCE COMMITTEE

#### Chairman

- 1 Dr. Gangan Prathap  
Chairperson, Board of Governors,  
NIT- Arunachal Pradesh and Director,  
NISCAIR, New Delhi,  
E-mail ID: [gp@niscair.res.in](mailto:gp@niscair.res.in)

<b>Member (Ex-officio)</b>	2	Prof. (Dr.) C T Bhunia Director, NIT-Arunachal Pradesh, Po - Yupia, Dist. - Papum Pare, Arunachal Pradesh - 791112. E-mail ID: <a href="mailto:nitarunachal@gmail.com">nitarunachal@gmail.com</a>
<b>Members</b>	3	Additional Secretary (T), D/o. Higher Education, MHRD, Govt. of India, Shastri Bhawan, "C" Wing, New Delhi E-mail: <a href="mailto:technicalsection3@yahoo.co.in">technicalsection3@yahoo.co.in</a>
	4	Joint Secretary (IFD), D/o. Higher Education, MHRD, Govt. of India, Shastri Bhawan, "C" Wing, New Delhi E-mail: <a href="mailto:internalfinance1@gmail.com">internalfinance1@gmail.com</a>
	5	Dr. Bubu Bhuyan, Associate Professor and Head, Department of Information Technology, NEHU, Shillong E-mail ID: <a href="mailto:b.bhuyan@gmail.com">b.bhuyan@gmail.com</a>
	6	Prof. P. P. Sahu Professor, Electronics and Communication Engineering Tezpur University, Tezpur, Assam, E-mail ID: <a href="mailto:pps@tezu.ernet.in">pps@tezu.ernet.in</a>
	7	Dr. Nabakumar Pramanik DIC (F & A), Asst. Professor, Chemistry, NIT Arunachal Pradesh, E-mail ID: <a href="mailto:pramaniknaba@gmail.com">pramaniknaba@gmail.com</a>
	8	Sri S. P. Kar Accountant, NIT- Arunachal Pradesh E-mail ID: <a href="mailto:satyapriyakar04@gmail.com">satyapriyakar04@gmail.com</a>

**IV - BUILDING AND WORKS COMMITTEE**

- |                 |    |  |
|-----------------|----|--|
| <b>Chairman</b> | 1  | Prof. (Dr.) C T Bhunia<br>Director, NIT- Arunachal Pradesh,<br>Po - Yupia, Dist. - Papum Pare,<br>Arunachal Pradesh - 791112.<br>E-mail ID: <a href="mailto:nitarunachal@gmail.com">nitarunachal@gmail.com</a> |
| <b>Members</b>  | 2. | Representative of the MHRD   |
|                 | 3  | Dr. Binoy Singh, Director,<br>Professor, NERIST,<br>Arunachal Pradesh<br>E-mail ID: <a href="mailto:bsingh.nird@gmail.com">bsingh.nird@gmail.com</a>   |
|                 | 4  | Dr. A. K. Atta<br>DIC (P&D), Asst. Professor,<br>Chemistry, NIT-<br>Arunachal Pradesh<br>E-mail ID: <a href="mailto:attaananta@gmail.com">attaananta@gmail.com</a>   |
|                 | 5  | Er. S.P. Singh<br>Chief Engineering, CPWD,<br>Govt. of India<br>E-mail ID: <a href="mailto:cencz04@yahoo.co.in">cencz04@yahoo.co.in</a>  |
|                 | 6  | Er. S. R. Kumar, PHED, Western<br>Zone, Govt. of Arunachal Pradesh,<br>Itanagar<br>E-mail ID: <a href="mailto:srk.1052@gmail.com">srk.1052@gmail.com</a>   |
|                 | 7  | Air Cmde (Retd.) Ajay Kumar<br>Registrar, NIT Arunachal Pradesh<br>E-mail: <a href="mailto:deputyregistrar@nitap.in">deputyregistrar@nitap.in</a>  |
|                 | 8  | Sri Gautam Roy (Invitee)<br>Asst. Registrar, NERIST,<br>Arunachal Pradesh<br>E-mail: <a href="mailto:gautam3roy@yahoo.co.in">gautam3roy@yahoo.co.in</a>  |

**V - BOARD OF STUDIES****Department of Computer Science & Engineering**

- |                              |   |  |
|------------------------------|---|--|
| <b>Chairman (Ex-Officio)</b> | 1 | Head, Department of Computer<br>Science & Engineering<br>(at the grade of Professor only),<br>National Institute of Technology-<br>Arunachal Pradesh |
|------------------------------|---|--|

<b>Members</b>	2	Prof (Dr.) Ajit Pal Department of Computer Science & Engineering, IIT-Kharagpur,
	3	Prof (Dr.) Atal Chowdhury Department of Computer Science & Engineering, Jadavpur University, Kolkata
	4	Prof (Dr.) Bubu Bhuyan Associate Professor and Head of the Department of Information Technology, NEHU, Shillong
	5	Prof (Dr.) Samir Roy Department of Computer Science & Engineering, NITTTR, Kolkata, West Bengal

#### Department of Electronics & Communication Engineering

<b>Chairman (Ex-Officio)</b>	1	Head, Department of Electronics & Communication Engineering (at the grade of Professor only), National Institute of Technology-Arunachal Pradesh
<b>Members</b>	2	Prof. (Dr.) P.P.Sahu Head of the Department, Electronics & Communication Engineering, Tezpur University, Tezpur, Assam
	3	Prof. (Dr.) A. Hussain Department of Electronics & Communication Engineering, NERIST, Nirjuli, Arunachal Pradesh
	4	Prof. (Dr.) Monojit Mitra Department of Electronics & Communication Engineering, BESU, Shibpur, West Bengal
	5	Prof. (Dr.) P. K. Basu Department of Radio Physics & Electronics, Calcutta University, Kolkata, West Bengal

### Department of Electrical Engineering

<b>Chairman (Ex-Officio)</b>	1	Head, Department of Electrical Engineering (at the grade of Professor only), NIT-Arunachal Pradesh
<b>Members</b>	2	Prof. (Dr.) U.K.Sharma Former Professor Electrical Engineering & Former Director, NERIST, Nirjuli, Arunachal Pradesh
	3	Prof. (Dr.) P. Sarkar Department of Electrical Engineering NITTTR, Salt Lake, Kolkata, West Bengal
	4	Prof. (Dr.) S.S. Pattanaik Department of Electrical Engineering NITTR-Chandigarh
	5	Prof. (Dr.) S. Sen Department of Radio Physics & Electronics, Calcutta University, Kolkata, West Bengal

### VI - BOARD OF RESEARCH

<b>Chairperson</b>	1	Prof. (Dr.) C T Bhunia Director, NIT- Arunachal Pradesh, Po – Yupia, Dist. – Papum Pare, Arunachal Pradesh – 791112. E-mail: <a href="mailto:nitarunachal@gmail.com">nitarunachal@gmail.com</a>
<b>Members</b>	2	Prof. Gautam Ghose Professor, ECE, IRP & Electronics, CU, Kolkata E-mail: <a href="mailto:gogglre.rpe@gmail.com">gogglre.rpe@gmail.com</a>
	3	Dr. P. Kothari Director General, J. B. Group of Educational Institutions E-mail ID: <a href="mailto:dg@jbggroup.org.in">dg@jbggroup.org.in</a>
	4	Prof. R. N. Bera Professor & Head, ECE, SMU E-mail: <a href="mailto:rbera50@gmail.com">rbera50@gmail.com</a>

- 5 Prof. M. V. Pitke  
Former Professor, CSE, TIFR, Mumbai  
E-mail ID: [pitke@vsnl.com](mailto:pitke@vsnl.com)
- 6 Prof. Ajit Pal  
Professor, CSE, IIT Kharagpur  
E-mail ID: [apal@cse.iitkgp.ernet.in](mailto:apal@cse.iitkgp.ernet.in)
- 7 Dr. Bubu Bhuyan  
Reader & Head, IT, NEHU  
E-mail: [b.bhuyan@gmail.com](mailto:b.bhuyan@gmail.com)
- 8 Prof. Promod Pathak  
Professor, DMS, ISM, Dhanbad  
E-mail ID:  
[pramod\\_ism@rediffmail.com](mailto:pramod_ism@rediffmail.com)
- 9 Dr. Pinaki Chakraborty  
DIC (R&D) & Dy. DDO,  
Asst. Professor, Physics,  
NIT Arunachal Pradesh  
E-mail ID: [pinakichk@gmail.com](mailto:pinakichk@gmail.com)

# 11. News Paper Cuttings (different events performed by NIT-Arunachal Pradesh in 2015-2016)



# ARUNACHAL FRONT

The People's Daily

Homeless people face age-related conditions earlier

Hockey: Indian eyes through Scotland 3-0

Thursday 03 March 2016

## Produce academic engineers: Bhunia

NATIONAL WORKSHOP

By A.P. M. K. Bhunia

Producing academic engineers is a challenge, but it is a necessary one. The National Institute of Technology, Arunachal Pradesh, is committed to producing high-quality academic engineers who can meet the needs of the state and the nation. The workshop, organized by the Ministry of Human Resource Development, aims to discuss the challenges and opportunities in the field of academic engineering. The participants, including faculty members and students, will discuss the current state of academic engineering and explore ways to improve the quality of education. The workshop is a significant step towards producing academic engineers who can meet the needs of the state and the nation.

# ARUNACHAL FRONT

The People's Daily

Homeless people face age-related conditions earlier

Hockey: Indian eyes through Scotland 3-0

Thursday 03 March 2016

## 6 NE cities proposed as 'solar cities'

### Ita project with GoI, NIT runs on solar energy

By A.P. M. K. Bhunia

Six cities in the Northeast are being proposed as 'solar cities' by the Government of India. The project, known as the 'Solar Cities' project, aims to harness the power of the sun to generate electricity and provide a sustainable source of energy. The cities selected for the project are Guwahati, Shillong, Imphal, Dispur, Kohima, and Itanagar. The project is being implemented in partnership with the Government of India and the National Institute of Technology, Arunachal Pradesh. The NIT is currently running seven 4-year B.Tech programmes and seven 2-year PG programmes in M.Tech & MS besides several PhD programmes. Two students will be awarded PhD degrees, 23 PG students and 80 UG students will get their degrees.

# ARUNACHAL FRONT

The People's Daily

Homeless people face age-related conditions earlier

Hockey: Indian eyes through Scotland 3-0

Thursday 03 March 2016

## NIT, Arunachal hosts workshop on renewable sources of energy

By A.P. M. K. Bhunia

The National Institute of Technology, Arunachal Pradesh, has organized a workshop on renewable sources of energy. The workshop, held on November 11, was attended by faculty members, students, and experts in the field. The workshop focused on the importance of renewable energy sources and the role of technology in harnessing them. The participants discussed the challenges and opportunities in the field of renewable energy and explored ways to improve the efficiency and effectiveness of energy production. The workshop is a significant step towards promoting renewable energy and sustainable development.

# The Arunachal Times

SATURDAY, NOVEMBER 21, 2015

Iran to address NIT convocation

IRANAGAR, Nov 20: Union Human Resource Development Minister, Smriti Zubin Shreya, will deliver the convocation address at the 2nd convocation of the National Institute of Technology, Arunachal Pradesh on Nov 27 at Itanagar.

Ministry of State for Home, Kiren Rijjand Chief Minister Nabam Tuki are likely to be present in the Convocation.

The NIT is currently running seven 4-year B.Tech programmes and seven 2-year PG programmes in M.Tech & MS besides several PhD programmes.

Two students will be awarded PhD degrees, 23 PG students and 80 UG students will get their degrees.

# ARUNACHAL FRONT

The People's Daily

Homeless people face age-related conditions earlier

Hockey: Indian eyes through Scotland 3-0

Thursday 03 March 2016

## NIT convocation

IRANAGAR, Nov 20: Union Human Resource Development Minister Smriti Zubin Shreya has announced to deliver the 2nd convocation address of National Institute of Technology, Arunachal Pradesh, scheduled here on November 27.

Chief Minister Nabam Tuki and Union Minister of State for Home, Kiren Rijjand are likely to be present in the convocation.

The NIT of national importance currently runs seven 4-year B.Tech programmes & two-year PG programmes in M.Tech & MS, besides several PhD programmes. Two students will be awarded PhD degrees, 23 PG students and 80 UG students will get their degrees during the convocation, according to a NIT release.

# ARUNACHAL FRONT

The People's Daily

Homeless people face age-related conditions earlier

Hockey: Indian eyes through Scotland 3-0

Thursday 03 March 2016

## NIT-Arunachal growth splendid

IRANAGAR, Nov 20: The National Institute of Technology, Arunachal Pradesh, has achieved a significant milestone in its growth and development. The institute has successfully completed its 2nd convocation, marking a major achievement in its history. The convocation ceremony was held on November 27 at Itanagar, and was attended by Union Minister Smriti Zubin Shreya, Chief Minister Nabam Tuki, and other dignitaries. The NIT has a strong track record of producing high-quality graduates who are well-equipped to meet the needs of the state and the nation. The institute's growth and development are a testament to the commitment and hard work of its faculty, staff, and students.

**ANNUAL REPPORT  
PART - II**





NAME OF EDUCATIONAL INSTITUTION NATIONAL INSTITUTE OF TECHNOLOGY  
ARUNACHAL PRADESH, YUPIA - 791112  
BALANCE SHEET AS AT - 31ST MARCH, 2016

SOURCES OF FUNDS		Amount in Rupees	
	Schedule	Current Year	Previous Year
CORPUS/CAPITAL FUND	1	2,934,436,966.37	1,856,752,903.71
DESIGNATED/ EARMARKED / ENDOWMENT FUNDS	2	-	6,851,543.00
CURRENT LIABILITIES & PROVISIONS	3	27,097,922.00	-
<b>TOTAL</b>		<b>2,961,533,887.37</b>	<b>1,863,404,446.71</b>

APPLICATION OF FUNDS		Amount in Rupees	
	Schedule	Current Year	Previous Year
<b>FIXED ASSETS</b>	4A		1,820,690,779.00
Tangible Assets		39,700,6889.4	-
Intangible Assets		13836539	-
Capital Works-in-Progress		2522443201	-
<b>INVESTMENTS FROM EARMARKED / ENDOWMENT FUNDS</b>	5		8,851,543.00
Long Term		-	-
Short Term		-	-
<b>INVESTMENTS - OTHERS</b>	6		-
<b>CURRENT ASSETS</b>	7	2847257.71	-
<b>LOANS, ADVANCES &amp; DEPOSITS</b>	8	-	36062124.71
<b>TOTAL</b>		<b>2,961,533,887.45</b>	<b>1,863,404,446.71</b>

SIGNIFICANT ACCOUNTING POLICIES 23  
CONTINGENT LIABILITIES AND NOTES TO ACCOUNTS 24

10.06.2016

*[Signature]*  
Asstt. Dean  
Finance & Accounts  
National Institute of Technology  
Arunachal Pradesh  
Yupia, Arunachal Pradesh

*[Signature]*  
10.06.2016  
Registrar  
National Institute of Technology  
Arunachal Pradesh, Yupia  
Yupia, Arunachal Pradesh

*[Signature]*  
Director  
National Institute of Technology  
Yupia, Arunachal Pradesh

*[Signature]*  
Chairperson (add)  
National Institute of Technology  
Yupia, Arunachal Pradesh

**SCHEDULE - 1. CORPUS/CAPITAL FUND**

		Amount in Rupees	
Particulars		Current Year	Previous Year
	Balance at the beginning of the year	-	1,196,345,355.38
Add:	Contributions towards Corpus/Capital Fund	-	-
Add:	Grants from UGC, Government of India and State Government to the extent utilized for capital expenditure	120,00,00,000	68,80,00,000
Add:	Assets Purchased out of Earmarked Funds	-	-
Add:	Assets Purchased out of Sponsored Projects, where ownership vests in the institution	-	-
Add:	Assets Donated/Gifts Received	-	-
Add:	Other Additions	-	-
Add:	Excess of expenditure over income transferred from the Income & Expenditure Account	-	-
<b>Total</b>		<b>3,05,67,52,904</b>	<b>1,894,345,355.38</b>
(Deduct)	Deficit transferred from the Income & expenditure Account	(-)122316938.63	(-)27592451.67
<b>Balance at the year end</b>		<b>2,934,435,965.37</b>	<b>1,866,752,903.71</b>

10.06.16

10.06.2016  
 Registrar  
 National Institute of Technology  
 Arunachal Pradesh, Yupia

10.06.2016  
 Director  
 National Institute of Technology  
 Yupia, Arunachal Pradesh

10.06.2016  
 Chairperson  
 National Institute of Technology  
 Yupia, Arunachal Pradesh

**SCHEDULE 3- CURRENT LIABILITIES & PROVISIONS**

	Current Year	Amount in Rupees Previous Year
<b>A. CURRENT LIABILITIES</b>		
1. Deposits from staff	-	-
2. Deposits from students	-	-
3. Sundry Creditors	-	-
a) For Goods & Services	-	-
b) Others	-	-
4. Deposit-Others (including EMD, Security Deposit)	14,285,027.00	-
5. Statutory Liabilities (GPF, TDS, WC TAX, CPF, GIS, NPS):	12,548,669.00	-
a) Overdue	-	-
b) Others	-	-
6. Other Current Liabilities	-	-
a) Salaries	-	-
b) Receipts against sponsored projects	-	-
c) Receipts against sponsored fellowships & scholarships	264,226.00	-
d) Unutilised Grants	-	-
e) Grants in advance	-	-
f) Other funds	-	-
g) Other liabilities	-	-
<b>Total (A)</b>	<b>27,097,922.00</b>	<b>-</b>
<b>B. PROVISIONS</b>		
1. For Taxation	-	-
2. Gratuity	-	-
3. Superannuation Pension	-	-
4. Accumulated Leave Encashment	-	-
5. Trade Warranties/Claims	-	-
6. Others ( Specify)	-	-
<b>Total (A+ B)</b>	<b>27,097,922.00</b>	<b>NIL</b>

Note: Unutilized grants & other include grants received in advance for next year.


10-06-2016  
 Asstt. Dean  
 Finance & Accounts  
 National Institute of Technology  
 Arunachal Pradesh, Yupia

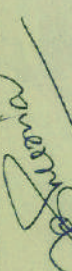
10-06-2016  
 Director  
 National Institute of Technology  
 Arunachal Pradesh, Yupia

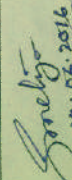
10-06-2016  
 Registrar  
 National Institute of Technology  
 Arunachal Pradesh, Yupia

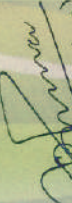
SCHEDULE 4A PLAN Amounts in Rupees

Sl. No.	Assets Heads	Gross Block			Depreciation for the Year			Net Block			
		Op Balance 01.04.....	Additions	Deductions	CI Balance	Dep Opening Balance	Depreciation for the Year	Deductions / Adjustment	Total Depreciation	31.03.2016	31.03.....
1	Land	1.00			1.00						
2	Site Development										
3	Roads & Bridges	5,76,72,096			5,76,72,096		1,153,441.92			56,518,654	
4	Tuberwells & Water Supply										
5	Sewerage & Drainage										
6	Electrical installation and equipment	7,884,288.00			7,884,288.00		3,94,214			7,490,074	
7	Plant & Machinery	17,49,715			17,49,715		87,495.75			1,662,229	
8	Scientific & Laboratory Equipment	14,17,44,734	7,19,54,935		21,36,99,669		12,116,100.71			201,583,569	
9	Office Equipment	53,91,245	18,58,225		7,249,470.00		5,43,710			6,705,760	
10	Audio Visual Equipment										
11	Computers & Peripherals		3,23,48,759		3,23,48,759		6,767,245.80			25,581,513	
12	Furniture, Fixtures & Fittings	2,62,90,853	51,48,003		3,14,38,856		29,57,915			29,080,951	
13	Vehicles	18,78,802	1,442,872		33,21,474		3,32,147			2,989,327	
14	Lib. Books & Scientific Journals	3,67,15,991	49,26,960		4,16,42,951		545,327.90			41,087,223	
15	Small Value Assets										
16	<b>Total (A)</b>	<b>279,327,235.00</b>	<b>11,76,79,654</b>		<b>397,006,889.37</b>		<b>2,42,87,559</b>			<b>372,709,299</b>	
17	<b>Capital Work in Progress (B)</b>				<b>2,52,80,48,346</b>						
18	<b>Intangible Assets</b>										
19	Computer Software		6,291,659.00		6,291,659		2,516,884			3,774,965	
20	E-Journals		7,344,880.00		7,344,880		2,697,952			4,406,928	
21	Patents										
22	<b>Total (C)</b>		<b>1,36,36,539</b>		<b>13,636,539.00</b>		<b>5,454,816.60</b>			<b>8,181,923.40</b>	
23	<b>Grand Total (A+B+C)</b>	<b>344,212,391.00</b>	<b>13,13,16,193</b>		<b>2,93,86,91,774</b>		<b>2,37,52,204</b>			<b>380,891,222.89</b>	

 Registrar  
 National Institute of Technology  
 Arunachal Pradesh, Yupia

 Director  
 National Institute of Technology  
 Arunachal Pradesh, Yupia

 Assst. Dean  
 Finance & Accounts  
 National Institute of Technology  
 Arunachal Pradesh, Yupia

 Charperson  
 National Institute of Technology  
 Arunachal Pradesh, Yupia

## SCHEDULE 7 – CURRENT ASSETS

	Current Year	Previous Year
Amount in Rupees		
<b>1. Stock:</b>		
a) Stores and Spares	-	-
b) Loose Tools	-	-
c) Publications	-	-
d) Laboratory chemicals, consumables and glass ware	-	-
e) Building Material	-	-
f) Electrical Material	-	-
g) Stationary	-	-
h) Water supply material	-	-
<b>2. Sundry Debtors:</b>		
a) Debts Outstanding for a period exceeding six months	NIL	-
b) Others (Loan, advances and others)	NIL	19,539,552.00
<b>3. Cash and Bank Balances:</b>		
a) With Scheduled Banks:		
- In Current Accounts	-	-
a) Cash in hand	41,808.00	41,808.00
b) Imprest	1,919.00	1,919.00
c) Bank balance on current a/c	28,403,530.71	16,478,845.71
- In term deposit Accounts	-	-
- In Savings Accounts	-	-
b) With non-Scheduled Banks:		
- In term deposit Accounts	NIL	-
- In Savings Accounts	NIL	-
<b>4. Post Office- Savings Accounts</b>		
	NIL	-
<b>TOTAL</b>	<b>28,447,257.71</b>	<b>36,062,124.71</b>

Note: Annexure A shows the details of Bank Accounts

10.06.2016

Asstt. Dean

Finance & Accounts

National Institute of Technology

Arunachal Pradesh

10.06.2016

Registrar

National Institute of Technology

Arunachal Pradesh, Yupia

10.06.2016

Director

National Institute of Technology

Yupia, Arunachal Pradesh

10.06.2016

Chairperson

National Institute of Technology

Yupia, Arunachal Pradesh

**SCHEDULE: 23  
SIGNIFICANT ACCOUNTING POLICIES (ILLUSTRATIVE)**

**1. BASIS FOR PREPARATION OF ACCOUNTS**

The accounts are prepared under the Historical Cost Convention unless otherwise stated and generally on the Accrual method of accounting.

**2. REVENUE RECOGNITION**

- 2.1 Fees from Students (except Tuition Fees), Sale of Admission Forms, Royalty and Interest on Savings Bank account are accounted on cash basis. Tuition Fees collected separately for each semester is accounted on accrual basis.
- 2.2 Income from Land, Buildings and Other Property and Interest on Investments are accounted on accrual basis.
- 2.3 Interest on interest bearing advances to staff for House Building, Purchase of Vehicles and Computers is accounted on accrual basis every year, though the actual recovery of interest starts after the full repayment of the Principal.

**3. FIXED ASSETS AND DEPRECIATION**

- 3.1 Fixed assets are stated at cost of acquisition including inward freight, duties and taxes and incidental and direct expenses related to acquisition, installation and commissioning.
- 3.2 Fixed assets are valued at cost less accumulated depreciation. Depreciation on fixed assets is provided on Straight line method, at the following rates:

**Tangible Assets:**

1. Land	0%
2. Site Development	0%
3. Buildings	2%
4. Roads & Bridges	2%
5. Tube wells & Water Supply	2%
6. Sewerage & Drainage	2%
7. Electrical Installation and equipment	5%
8. Plant & Machinery	5%

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16/06/16

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Accountant  
National Institute of Technology

*[Signature]*  
10.06.2016  
Finance & Accounts  
National Institute of Technology

*[Signature]*  
Registrar  
National Institute of Technology  
Arunachal Pradesh

*[Signature]*  
DIRECTOR  
National Institute of Technology  
Yupia, Arunachal Pradesh  
Chairperson  
National Institute of Technology  
Yupia, Arunachal Pradesh

9.	Scientific & Laboratory Equipment	8%
10.	Office Equipment	7.5%
11.	Audio Visual Equipment	7.5%
12.	Computers & Peripherals	20%
13.	Furniture, Fixtures & Fittings	7.5%
14.	Vehicles	10%
15.	Lib. Books & Scientific Journals	10%

**Intangible Assets (amortization):**

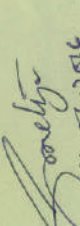
1.	E-Journals	40%
2.	Computer Software	40%
3.	Patents and Copyrights	9 years

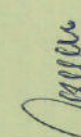
3.3 Depreciation is provided for the whole year on additions during the year.


3.4 Where an asset is fully depreciated, it will be carried at a residual value of Re.1 in the Balance Sheet and will not be further depreciated. Thereafter, depreciation is calculated on the additions of each year separately at the rate of depreciation applicable for that asset head.


3.5 Assets created out of Sponsored Projects, where the ownership of such assets vests in the Institution, are setup by credit to Capital Fund and merged with the Fixed Assets of the Institution. Depreciation is charged at the rates applicable to the respective assets. Assets created out of Sponsored Project funds, where the ownership is retained by the sponsors but held and used by the Institution are separately disclosed in the Notes on Accounts.

3.6 Assets, the individual value of each of which is Rs. 2000 or less (except Library Books) are treated as Small Value Assets, 100% depreciation is provided in respect of such assets at the time of their acquisition. However physical accounting and control are continued by the holders of such assets.

 10.06.2016  
 Registrar  
 National Institute of Technology  
 Arunachal Pradesh, Yupia, Arunachal Pradesh

  
 Asstt. Dean  
 Finance & Accounts  
 National Institute of Technology  
 Arunachal Pradesh, Yupia, Arunachal Pradesh

  
 DIRECTOR  
 National Institute of Technology  
 (Established by Ministry of Human  
 Resource Development, Govt of India)  
 Yupia, Arunachal Pradesh

  
 Chairperson  
 National Institute of Technol  
 Yupia, Arunachal Pradesh

#### 4 Intangible Assets: Patents and copy rights, E Journals and Computer Software are grouped under Intangible Assets.

4.1. Electronic Journals (E-Journals) are separated from Library Books in view of the limited benefit that could be derived from the on-line access provided. E-journals are not in a tangible form, but temporarily capitalized and in view of the magnitude of expenditure and the benefit derived in terms of perpetual knowledge acquired by the Academic and Research Staff; Depreciation is provided in respect of E-journals at a higher rate of 40% as against depreciation of 10% provided in respect of Library Books.

4.2 Expenditure on acquisition of software has been separated from computers and peripherals, as apart from being intangible assets, the rate of obsolescence in respect of these is very high. Depreciation is provided in respect of software at a higher rate of 40% as against depreciation of 20% provided in respect of Computers & Peripherals.

5. **STOCKS:** Expenditure on purchase of chemicals, glassware, publications and other stores is accounted as revenue expenditure, except that the value of closing stocks held on 31<sup>st</sup> March is set up as inventories by reducing the corresponding Revenue Expenditure on the basis of information obtained from Departments. They are valued at cost.

#### 6. RETIREMENT BENEFITS

The Institute provide leave encashment to retiring employees out of the budgetary grant received from MHRD. The expenses incurred in this regard is accounted for under staff payments & benefits (Establishment expenses).

#### 7. INVESTMENTS

- Long term investments are carried at their cost or face value whichever is lower. However any permanent diminution in their value as on the date of the Balance Sheet is provided for.
- Short Term investments are carried at their cost or market value (if quoted) whichever is lower.

#### 8 GOVERNMENT GRANTS

- Government Grants and UGC grants are accounted on realization basis. However, where a sanction for release of grant pertaining to the financial year is received before 31<sup>st</sup> March and the grant is actually received in the next financial year, the grant is accounted on accrual basis and an equal amount is shown as recoverable from the Grantor.
- To the extent utilized towards capital expenditure, (on accrual basis) government grants is transferred to the Capital Fund.

15/06/16  
Accountant  
National Institute of Technology  
Arunachal Pradesh, Yupia

10.06.2016  
Registrar  
National Institute of Technology  
Arunachal Pradesh, Yupia

10.06.2016  
Chairperson  
National Institute of Technology  
Arunachal Pradesh, Yupia

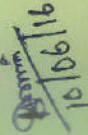
**9 SPONSORED PROJECTS**

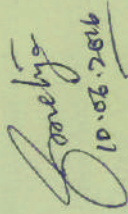
9.1 In respect of ongoing Sponsored Projects, the amounts received from sponsors are credited to the head "Current Liabilities and Provisions –Current Liabilities –Other Liabilities –Receipts against ongoing sponsored projects." As and when expenditure is incurred /advances are paid against such projects, or the concerned project account is debited with allocated overhead charges, the liability account is debited.


9.2 The Institution itself also awards Fellowships and Scholarships, which are accounted as Academic expenses.

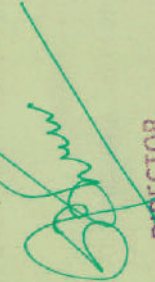
**10 INCOME TAX**

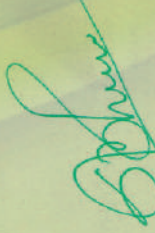
The income of the Institution is exempt from Income Tax under Section 10(23c) of the Income Tax Act. No provision for tax is therefore made in the accounts.

 10/06/16  
 Accountant  
 National Institute of Technology  
 Yupia, Arunachal Pradesh

 10.06.2016  
 Asstt. Dean  
 Finance & Accounts  
 National Institute of Technology  
 Arunachal Pradesh

  
 Registrar  
 National Institute of Technology  
 Arunachal Pradesh, Yupia  
 Arunachal Pradesh

  
 DIRECTOR  
 National Institute of Technology  
 (Established by Ministry of Human  
 Resource Development, Govt of India  
 Yupia, Arunachal Pradesh

  
 Chairperson  
 National Institute of Technology  
 Yupia, Arunachal Pradesh

## SCHEDULE: 24

**CONTINGENT LIABILITIES AND NOTES TO ACCOUNTS****1. CAPITAL COMMITMENTS**

The Value of contracts remaining to be executed on Capital Account and not provided for (Net of Advances) amounted to Rs. 112.91 as on 31.03.17 (Previous year Rs. .... Crores).

**2. EXPENDITURE IN FOREIGN CURRENCY:**

a. Travel	\$.1309.365
b. Foreign Drafts for import of chemicals etc	-----
c. Others.	\$.29121.767

**3. CURRENT ASSETS, LOANS, ADVANCES AND DEPOSITS**

In the opinion of the Management, the current assets, Loans, Advances and Deposits have a value on realization in the ordinary course, equal at least to the aggregate amount shown in the Balance Sheet.

4. The details of balances in Saving Bank Accounts, Current Accounts and Fixed Deposit Accounts with Banks are enclosed as attachment 'A' to the Schedule of Current Assets.

5. Previous year's figures have been regrouped wherever necessary.

6. Figures in the Final accounts have been rounded off to the nearest rupee.

7. Schedules 1 to 24 are annexed to and form an integral part of the Balance Sheet at 31<sup>st</sup> March-2016 and the Income & Expenditure account for the year ended on that date.

8. The New Pension Scheme Accounts are owned by the members of those funds and not by the Institution, these accounts were separated from the Institution's Accounts. The deduction from Employees as well as the Institute's contributions are regularly transfer to the National Securities Depository Limited (NSDL) – Central Record keeping Agency (CRA) against the PRA Number of individual contributor.

*[Signature]*  
10.06.16  
Accountant

Finance & Accounts  
National Institute of Technology

*[Signature]*  
10.06.2016

Registrar  
National Institute of Technology  
Arunachal Pradesh, Yupia

*[Signature]*  
DIRECTOR  
National Institute of Technology  
Established by Ministry of Higher  
Education, Government of India

*[Signature]*  
Chairperson  
National Institute of Technology  
Yupia, Arunachal Pradesh

NOTES ON ACCOUNTS1. DISCLOSURE: CHANGES OF CLOSING BALANCE 2014-15 AND OPENING BALANCE 2015-16.

The A.F.S of NIT ARUNACHAL PRADESH for the year 2014-15 was closed 31.03.2015, with the following cash balance .

- a) Cash in Hand - Rs.41,808.00  
 b) Imprest - Rs. 1,919.00  
 c) SBI - Rs. 1,64,78,845.71

However the Cash balance with SBI did not include the 20 Nos of cheque's (details given below) written on 31.03.2015, and kept aside, against a group of venders for supplying certain goods are services with immediately. The vender's could not supply the materials and the cheques expired cheque validity on completion of 3(Three Months) on date of issue:

Details of the lapsed cheques

S/n	Cheque No.	Chq. Date	Party	Particulars	Amount
1	680635	31.03.15	Maverick	CE Lab items	4223161
2	680636	31.03.15	A.K & B Associates	CE Lab items	20536
3	680637	31.03.15	Lalani International	Furniture	540000
4	680638	31.03.15	Fusion System	Chemistry Lab Items	36750
5	680639	31.03.15	Relied Enterprise	Chemistry Lab Items	138430
6	680640	31.03.15	Neofam Instruement	Chemistry Lab Items	735625
7	680642	31.03.15	Sam Technology	CE Lab items	4669668
8	680643	31.03.15	Sam Technology	ME Lab Items	7077876
9	680645	31.03.15	Cira Renewal Energy	Solar Power	1213488
10	680646	31.03.15	Naskar and Company	ME Lab Items	391025
11	680647	31.03.15	Techno System	EE Lab Items	7671500
12	680648	31.03.15	Niyo Engineers	EE Lab Items	263736
13	680649	31.03.15	Vishal Vyapar	EE Lab Items	7270750
14	680650	31.03.15	Geotech Instruement	ME Lab Items	172800

*[Signature]*  
 10.06.2016  
 Asstt. Dean  
 Finance & Accounts  
 National Institute of Technology

*[Signature]*  
 Registrar  
 National Institute of Technology  
 Sunachal Pradesh, Yupia  
 Resource Development, Goa, India

*[Signature]*  
 DIRECTOR  
 National Institute of Technology  
 (Established by Ministry of Human  
 Resource Development, Govt. of India)  
 Sunachal Pradesh

*[Signature]*  
 Chairperson  
 National Institute of Technology  
 Yupia, Arunachal Pradesh

15	796138	31.03.15	Sam Technology	CE Lab items	13211901
16	796140	31.03.15	Geotech Instrument	ME Lab items	375510
17	796141	31.03.15	Shopping Network	Fire Extinguisher	92430
18	796142	31.03.15	Green Valley	Xerox Machine	229532
19	796143	31.03.15	Maverick	ECE Lab items	416250
20	796151	31.03.15	Pixel Solution	CSE Lab items	417259
				<b>Total</b>	<b>49168227</b>

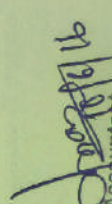
Mean while the Annual Financial Statement of NIT (Ar.P), was prepared, got finalized and submitted to Accountant General (Ar.P) for examination and vetting vide this office letter NIT/AP/Accounts/69/12-13, dated 17.06.2015.

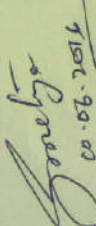
The Annual Financial Statement, as stipulated by the MHRD, was completed within 3(Three Months) after closer of the Accounts on 31.03.2015. The process of finalization account could not wait for the execution of order by vendors till the expire of the cheques.


The lapsed cheque amounting to Rs.4,91,68,227.00 (Rupees four crore ninety one lakh sixty eight thousand two hundred and twenty seven only) have been written back to the account after the expire of the validity of the cheques.


Thus the closing balance for 2014-15, which became the opening balance got increased by the lapsed cheque amount Rs.4,91,68,227.00 and became Rs.6,56,47,072.71 for the year 2015-16.

16/06/16

  
Assistant  
National Institute of Technology  
Yupia, Arunachal Pradesh

  
30.06.2016  
Asstt. Dean  
Finance & Accounts  
National Institute of Technology  
Arunachal Pradesh

  
Registrar  
National Institute of Technology  
Arunachal Pradesh, Yupia  
Resource Development, Govt of India  
Yupia, Arunachal Pradesh

  
Registrar  
National Institute of Technology  
Arunachal Pradesh, Yupia  
Resource Development, Govt of India  
Yupia, Arunachal Pradesh

## 2. UNIFORM TREATMENT OF GRANT IN AID

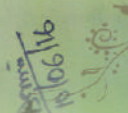
NIT (Ar.P) was inaugurated on 18.08.2010. NIT (Durgapur) was task to mentor this institute. NIT Ar.P has been receiving Grant in Aids since September 2010. First two tranche of Grant in Aids was received through NIT Durgapur. However the accounting treatment of Grant in Aids has not been uniform as it could be seen from this table.


### Grant in Aid


Year	Grant in Aid	Presentation in the Annual Account	
		Balance Sheet	Income & Expenditure
2010-11	1,40,00,000.00	1,40,00,000.00	-
2011-12	7,00,00,000.00 + 1,80,00,000.00	88,00,00,000.00	-
2012-13	20,00,00,000.00	17,62,10,000.00	2,37,90,000.00
2013-14	101,50,00,000.00	98,15,00,000.00	3,35,00,000.00
2014-15	75,00,00,000.00	68,80,00,000.00	6,20,00,000.00
2015-16	120,00,00,000.00	120,00,00,000.00	-


This Grant in Aids provided for the establishment of NIT Ar.P along with all its permanent infrastructure, not merely running an ongoing Institute. Therefore it is decided to present (amount of grant revived for the completion of the establishment of the NIT Ar.P) as the promoter contribution and placed under corpus in the Balance Sheet.

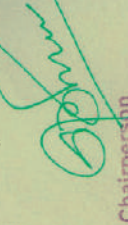
Grant in Aids received for revenue expenses will be presented in the Income & Expenditure Account of the Institute along with all other revenue income & expenditure.


  
 National Institute of Technology  
 Yupia, Arunachal Pradesh


  
 Asstt. Dean  
 Finance & Accounts  
 National Institute of Technology  
 Arunachal Pradesh


  
 Registrar  
 National Institute of Technology  
 Arunachal Pradesh, Yupia


  
 Director  
 National Institute of Technology  
 (Established by Ministry of Human  
 Resource Development, Govt. of India  
 Yupia, Arunachal Pradesh


  
 Chairperson  
 National Institute of Technology  
 Yupia, Arunachal Pradesh

NAME OF EDUCATIONAL INSTITUTION - NATIONAL INSTITUTE OF TECHNOLOGY  
ARUNACHAL PRADESH

INCOME AND EXPENDITURE ACCOUNT FOR THE PERIOD/YEAR ENDED 31ST MARCH, 2016

Particulars	Schedule	Amount in Rupees	
		Current Year	Previous Year
<b>INCOME</b>			
Academic Receipts	9	34,988,907.00	20233325.33
Grants / Subsidies	10	NIL	NIL
Income from Investments	11	NIL	NIL
Interest earned	12	4,818,579.00	5127786
Other Income	13	19,006,537.00	(-) 4881316
Prior Period Income	14	NIL	
<b>TOTAL (A)</b>		<b>58,825,023.00</b>	<b>20,379,795.33</b>
<b>EXPENDITURE</b>			
Staff Payments & Benefits (Establishment expenses)	15	61,119,883.00	57,590,485.00
Academic Expenses	16	31,788,688.00	NIL
Administrative and General Expenses	17	35,320,524.00	52,381,781.00
Transportation Expenses	18	13,663,930.00	NIL
Repairs & Maintenance	19	9,479,220.00	NIL
Finance costs	20	17,512.15	NIL
Depreciation	4A	29,752,204.48	3,656,030.00
Other Expenses	21	NIL	NIL
Prior Period Expenses	22	NIL	NIL
<b>TOTAL (B)</b>		<b>181,141,961.53</b>	<b>113,628,277.00</b>
Balance being excess of Expenditure over Income (B-A)		122,316,938.63	93,248,481.67
Transfer to / from Designated Fund			
Building fund			
Others (specify)			
Balance Being Surplus / (Deficit) Carried to Capital Fund		122,316,938.63	93,248,481.67

23 Significant Accounting Policies

24 Contingent Liabilities and Notes to Accounts

*[Signature]*  
10.06.2016  
Asstt. Dean  
Finance & Accounts  
National Institute of Technology  
Arunachal Pradesh

*[Signature]*  
10.06.2016  
Registrar  
National Institute of Technology  
Arunachal Pradesh, Yupia

*[Signature]*  
Director  
National Institute of Technology  
Yupia, Arunachal Pradesh

*[Signature]*  
Chairperson (Cash)  
National Institute of Technology  
Yupia, Arunachal Pradesh

**SCHEDULE 9 - ACADEMIC RECEIPTS**

		Amount in Rupees	
		Current Year	Previous Year
<b>FEEs FROM STUDENTS</b>			
<b>Academic</b>			
1. Tuition fee			
2. Admission fee			
3. Enrolment fee			
4. Library Admission fee			
5. Laboratory fee			
6. Art & Craft fee			
7. Registration fee		34,993,805.00	19,971,076.50
8. Syllabus fee			
<b>Total (A)</b>		<b>34,993,805.00</b>	<b>19,971,076.50</b>
<b>Examinations</b>			
1. Admission test fee			
2. Annual Examination fee			
3. Mark sheet, certificate fee			
4. Entrance examination fee			
<b>Total (B)</b>			

1066/16

*[Signature]*  
 Accountant  
 National Institute of Technology  
 Yupia, Arunachal Pradesh

*[Signature]*  
 10.05.2016  
 Asstt. Dean  
 Finance & Accounts  
 National Institute of Technology  
 Arunachal Pradesh

*[Signature]*  
 Registrar  
 National Institute of Technology  
 Arunachal Pradesh, Yupia

*[Signature]*  
 DIRECTOR  
 National Institute of Technology  
 Established by Ministry of Human  
 Resource Development, Govt. of India  
 Yupia, Arunachal Pradesh

*[Signature]*  
 Chairperson  
 National Institute of Technology  
 Yupia, Arunachal Pradesh

<b>Other Fees</b>			
1. Identity card fee			
2. Fine/ Miscellaneous fee	6102		262,248.83
3. Medical fee			
4. Transportation fee			
5. Hostel fee			
<b>Total ( C )</b>	<b>6,102.00</b>		<b>262,248.83</b>
<b>Sale of Publications</b>			
1. Sale of Admission forms			
2. Sale of syllabus and Question Paper, etc.			
3. Sale of prospectus including admission forms			
<b>Total ( D )</b>			
<b>Other Academic Receipts</b>			
1. Registration fee for workshops, programmes			
2. Registration fees (Academic Staff College)			
<b>Total ( E )</b>	<b>34,999,907.00</b>		<b>20,233,325.33</b>
<b>GRAND TOTAL (A+B+C+D+E)</b>			

**Note:**

In case fees like entrance fee, subscriptions etc are material and are in the nature of capital receipts, such amount should be recognized to the Capital Fund. Otherwise such fees will be appropriately incorporated in this schedule

16/06/16

*[Signature]*  
20.06.2016  
Asstt. Dean  
Finance & Accounts  
National Institute of Technology  
Arunachal Pradesh

*[Signature]*  
DIRECTOR  
National Institute of Technology  
(Established by Ministry of Human  
Resource Development, Govt of India  
Yupia, Arunachal Pradesh

*[Signature]*  
Chairperson  
National Institute of Technology  
Yupia, Arunachal Pradesh

**SCHEDULE 12: INTEREST EARNED**

Particulars	Amount in Rupees	
	Current Year	Previous Year
1. On Savings Accounts with scheduled banks	4,818,579.00	5,127,786.00
2. On Loans		
a. Employees/Staff		
b. Others		
3. On Debtors and Other Receivables		
<b>Total</b>	<b>4,818,579.00</b>	<b>5,127,786.00</b>

**Note:**

1. The amount against item 1, in respect of Bank Accounts of Earmarked/Endowment Funds is dealt with in Schedule 11 (First Part) and Schedule 2.
2. Item 2(a) is applicable only if Revolving funds have not been constituted for such advances.

16.06.16

*[Signature]*  
 Accountant  
 National Institute of Technology  
 Yupia, Arunachal Pradesh

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 10.06.2016  
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**SCHEDULE 13- OTHER INCOME**

Items of material amounts included in Miscellaneous Income should be separately disclosed.

		Amount in Rupees	
		Current Year	Previous Year
<b>A. Income from Land &amp; Buildings</b>			
1.	Hostel Room Rent	136,893.00	
2.	License fee		
3.	Hire Charges of Auditorium/Play ground/Convention Centre, etc		
4.	Electricity charges recovered	1,815.00	
5.	Water charges recovered		
	<b>Total</b>	<b>137,708.00</b>	
<b>B. Sale of Institute's publications</b>			
<b>C. Income from holding events</b>			
1.	Gross Receipts from annual function/ sports carnival		
	<b>Less: Direct expenditure incurred on the annual function/ sports carnival</b>		
2.	Gross Receipts from fetes		
	<b>Less: Direct expenditure incurred on the fetes</b>		
3.	Gross Receipts for educational tours		
	<b>Less: Direct expenditure incurred on the tours</b>		
4.	Others (to be specified and separately disclosed)		
	<b>Total</b>		

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D. Others		
1.	Income from consultancy	25,529.00
2.	RTI fees	410.00
3.	Income from Royalty	
4.	Sale of application form (recruitment)	
5.	Misc. receipts (Sale of tender form, waste paper, etc.)	20,400.00
6.	Profit on Sale/disposal of Assets	
	a) Owned assets	
	b) Assets received free of cost	
7.	Grants/Donations from Institutions, Welfare Bodies and International Organizations	2,000.00
8.	Others (specify)	14,385,890.00
	<b>Total</b>	<b>14,434,229.00</b>
	<b>Grand Total (A+B+C+D)</b>	<b>14,571,937.00</b>
		<b>NIL</b>

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**SCHEDULE 15 – STAFF PAYMENTS & BENEFITS (ESTABLISHMENT EXPENSES)**

These shall be classified separately for teaching and non-teaching staff, adhoc staff, o Arrears of DA, Salary arrears due to increment shall be shown separately

	Current Year			Previous Year		
	Plan	Non Plan	Total	Plan	Non Plan	Total
	Amount in Rupees					
a) Salaries and Wages	56,461,615.00			49,174,173.00		
b) Allowances and Bonus						
c) Contribution to Provident Fund	7,509,745.00			3,253,291.00		
d) Contribution to Other Fund (specify)						
e) Staff Welfare Expenses	35,101.00					
f) Retirement and Terminal Benefits						
g) LTC facility						
h) Medical facility	465,271.00			2,723,049.00		
i) Children Education Allowance	233,917.00					
j) Honorarium	3,472,757.00			2,092,185.00		
l) Others (specify)						
<b>TOTAL</b>	<b>68,178,406.00</b>			<b>57,242,698.00</b>		

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**SCHEDULE 16 - ACADEMIC EXPENSES**

	Current Year			Previous Year		
	Plan	Non Plan	Total	Plan	Non Plan	Total
	Amount in Rupees					
a) Laboratory expenses	5,939,072.50			275211		
b) Field work/Participation in Conferences						
c) Expenses on Seminars/Workshops	166,420.00			378798		
d) Payment to visiting faculty						
e) Examination						
f) Student Welfare expenses						
g) Admission expenses						
h) Convocation expenses	4,007,017.00			3,855,650.00		
i) Publications						
j) Stipend/means-cum-merit scholarship	7,661,547.00			2,825,079.00		
k) Subscription Expenses	1,506,450.00					
l) Others (specify)	12,508,181.50					
<b>TOTAL</b>	<b>31,788,688.00</b>			<b>6,680,729.00</b>		

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## SCHEDULE 17 - ADMINISTRATIVE AND GENERAL EXPENSES.

	Amount in Rupees					
	Current Year			Previous Year		
	Plan	Non Plan	Total	Plan	Non Plan	Total
<b>A Infrastructure</b>						
a) Electricity and power	1,330,988.00			1,067,688.00		
b) Water charges	702,000.00					
c) Insurance						
d) Rent, Rates and Taxes (including property tax)	9,370,433.00					
<b>B Communication</b>						
e) Postage and Stationery	21,804.00			436,168.00		
f) Telephone, Fax and Internet Charges	428,952.00					
<b>C Others</b>						
g) Printing and Stationery (consumption)	1,395,305.00			1,823,573.00		
h) Travelling and Conveyance Expenses	7,127,927.00			5,250,954.00		
i) Hospitality	256,734.00					
j) Auditors Remuneration	336,557.00					
k) Professional Charges	393,216.00					
l) Advertisement and Publicity	5,585,896.00			2,455,132.00		
m) Magazines & Journals	7,344,880.00					
n) Others (specify)	1,025,832.00			45,004,296.00		
<b>TOTAL</b>	<b>35,320,524.00</b>			<b>56,037,811.00</b>		

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**SCHEDULE 18 – TRANSPORTATION EXPENSES**

Amount in Rupees

Particulars	Current Year			Previous Year		
	Plan	Non Plan	Total	Plan	Non Plan	Total
	1 Vehicles (owned by institution)				10031666	
a) Running expenses						
b) Repairs & maintenance	85620					
c) Insurance expenses						
2 Vehicles taken on rent/lease	13578310					
a) Rent/lease expenses						
3 Vehicle (Taxi) hiring expenses						
<b>Total</b>	<b>13663930</b>			<b>10031666</b>		

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## SCHEDULE 19 – REPAIRS &amp; MAINTENANCE

Amount in Rupees

Particulars	Current Year			Previous Year		
	Plan	Non Plan	Total	Plan	Non Plan	Total
a) Buildings	9,025,120.00			14,308,697.00		
b) Furniture & Fixtures	5,148,003.00			5,928,681.00		
c) Plant & Machinery	NIL			NIL		
d) Office Equipment	1,858,225.00			4,363,347.00		
e) Computers	NIL			NIL		
f) Laboratory & Scientific equipment	100,217,811.00			68,852,196.00		
g) Audio Visual equipment	NIL			NIL		
h) Cleaning Material & Services	364,100.00			NIL		
i) Book binding charges	NIL			NIL		
j) Gardening	90,000.00			NIL		
k) Estate Maintenance	NIL			NIL		
l) Others (Specify)	NIL			NIL		
<b>Total</b>	<b>116,703,259.00</b>			<b>93,452,921.00</b>		

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**SCHEDULE 20 – FINANCE COSTS**

Amount in Rupees

Particulars	Current Year			Previous Year		
	Plan	Non Plan	Total	Plan	Non Plan	Total
	a) Bank charges	17,512.15			8,392.00	
b) Others (specify)						
<b>Total</b>	<b>17,512.15</b>			<b>8,392.00</b>		

**Note:-**

If the amount is not material, the head Bank charges could be omitted and these could be accounted as Administrative expenses in Schedule 17.

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Xii. Deposits and Advances		Xiii. Closing balances		
		a) Cash in hand	41,808.00	41,808.00
		b) Imprest	1,918.00	1,918.00
		c) Bank balances	23,402,530.71	15,478,945.71
		In Current Accounts		
		In Savings Accounts		
		In Deposit Accounts		
Xiii. Miscellaneous Receipts including Statutory Receipts	26,833,696.00			
Xiv. Any Other Receipts	15,839,713.00			
<b>TOTAL</b>	<b>1,551,613,744.71</b>	<b>TOTAL</b>	<b>1,551,613,744.71</b>	<b>923,700,716.71</b>

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### Flow Chart of Total Fund Allotted and Expenditure in various financial years:

