

## SECTION-1 DIRECTOR'S SUMMARY

It is a privilege to write a foreword to this 25<sup>th</sup> Annual Report 2011-2012 of NERIST which gives a glimpse of various activities of this Institute during the last one year. In this period, we have worked together to develop and improve the infrastructure and strived hard to give a responsive and transparent administration.

In this endeavour the Institute shall always remain indebted to the President of the Society for NERIST, Gen (Retd.) J.J. Singh, PVSM, AVSM, VSM, His Excellency the Governor of Arunachal Pradesh for his guidance and support. The Institute has also got its new Chairman of Board of Management, Mr. M.P. Bezbaruah, IAS (Retd.) since 9<sup>th</sup> March, 2012 who is a constant source of inspiration and guidance. However the Institute shall also remain grateful to Prof. Gautam Baruah, Director, IITG, its former Chairman, Board of Management, for his contribution in making the administration stronger. In this connection, the Institute shall also like to thank the Technical Bureau, IFD and other offices of MHRD for their support and cooperation from time to time.

The Institute got its new Director Prof. Dipankar Pal who joined on 24<sup>th</sup> October, 2011. Under his leadership and with support from all concerned, a number of new academic and infrastructure development initiatives have been taken. The Institute has decided to go for a University level collaboration with American University of Sharjah, UAE, which would be the first of its kind in the history of NERIST. The IT- service has seen a paradigm shift in the right direction. Some new academic programmes have been taken up. TEQIP activities with World Bank funding are going on in full-swing and the administration is ever alert to offer transparency and support growth. However, there is no room for complacency and the Institute shall work even harder to achieve a still higher standard and try to meet targets for more than what has been expected of it so far.

The Institute has a highly qualified, motivated, and relatively young faculty and a devoted group of non-teaching employees. NERIST students are disciplined, motivated and sincere and have successfully competed with the students from some of the best institutions of the country in different competitive examinations in their respective fields. They have also earned laurels for themselves and for the Institute in India and abroad. The Institute has carried out successfully many prestigious sponsored research projects from reputed external funding agencies.

The placement record of the Institute has been reasonable though not spectacular. The Training & Placement Cell has been doing its best to invite Govt./Semi Govt./Public Enterprises to the Institute to conduct placement interviews for our students.

**Prof. Dipankar Pal**  
**Director**

## SECTION-2 INTRODUCTION

### 2.1 The Institute

#### General

Perched in the untrammled beauty of the “land of the rising sun” the North Eastern Regional Institute of Science and Technology (NERIST) was set up by the Government of India, initially as a pilot project of the North Eastern Council, Shillong under the Ministry of Home Affairs, Govt. of India to create a base of technical manpower, aimed at meeting the challenges at various level of development in the region. The Campus of the Institute is located at Nirjuli, Itanagar, the capital city of Arunachal Pradesh and is well connected to Guwahati by road, air and rail.

The Institute came under the direct control of Ministry of Human Resource Development (MHRD), Government of India, from 1<sup>st</sup> April, 1994. It has been conferred with the “Deemed to be University” status on May 31<sup>st</sup>, 2005, by the MHRD under Section-3 of UGC Act, 1956.

The Institute follows a modular pattern of education, having a multiple entry and exit system and is producing skilled man-power in different levels, i.e. Certificate, Diploma and Degree, through its innovative educational programmes. The system of education adopted at NERIST is aimed at enabling the region consisting of eight states comprising of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura, to bridge the technology gap with the rest of the country, and also to increase the pace of socio-economic development in the region. The state ‘Sikkim’ has been included as the eight beneficiary state of the Institute in the year 2006.

The Institute has demonstrated successful implementation of modular pattern of education, which has been able to provide skilled manpower at nine Certificate courses; six Diploma courses and seven Degree courses, being offered by the different departments, namely, Agricultural Engineering, Civil Engineering, Computer Science and Engineering, Electrical Engineering, Electronics & Communication Engineering, Mechanical Engineering and Forestry. Chemistry, Physics, Mathematics, Humanities & Social Sciences also have a pivotal role as supporting departments. Although the Institute admits students at a tender age (after Class-X) having heterogeneous academic standards, but its academic and administrative set up has been quite effective to ensure appreciable academic growth including development of different traits of personality amongst the students

The Post-Graduate academic programs were started in 1996-97 in two fields viz., Information and Technology and Environmental Science & Engineering with due approval of AICTE and MHRD. After acquiring ‘Deemed University’ status in 2005, PG and Ph.D. programmes, both part time and regular basis, in all Engineering departments and M.Sc. in Physics, Chemistry and Mathematics w.e.f. 2009-10 sessions have also started. Full time, as well as part time Ph.D programmes has been started in all 11 departments since 2006

including MBA. NERIST has the distinction of being the first institute in the state of Arunachal Pradesh to start M Tech and MBA programmes.

### Objectives

- To provide suitable and efficient institutional facilities for the training of technical and scientific manpower in different disciplines with particular reference to the special need of the North Eastern States; to help them in the proper exploitation of the available resources for economic development;
- To prepare skilled manpower/technicians required for the execution of developmental schemes through certificate/diploma courses;
- To train specialised skilled manpower through graduate level courses;
- To offer highly specialised post-graduate courses;
- To conduct research; and
- To provide industrial consultancy.

### Vision

To contribute to the development of the north eastern region in particular and the country in general by increasing the competency levels of the people and creation and dissemination of scientific and technical knowledge relevant to the needs of the society.

## 2.2 Administrative set up

The Institute is registered as a Society under Societies Registration Act of 1860. At present, the Hon'ble Governor of Arunachal Pradesh is the ex officio President of NERIST Society and Mr. M.P. Bezbarua is the Chairman of Board of Management (BoM) of the Institute.

## 2.3 Salient Features

- Modular Technical Education System;
- Multi-point entry and exit system;
- Unconventional and innovative academic programme to create technical manpower at various levels for the development of NE Region;
- Development of knowledge, skills and value based education system;
- Highly qualified faculty and dedicated staff;
- P.G. and Ph.D. programme;
- Well equipped laboratories and workshops;
- Fully residential campus;
- Dedicated service for development of NE Region.

## SECTION – 3 ACADEMIC PROGRAMMES

### 3.1 A Brief Profile of the Section

Academic Section is the backbone of any Academic Institute/University. Present Academic Branch is divided in three cells viz. Undergraduate, Postgraduate and Ph.D. for better functioning. The Undergraduate cell deals with admission process, scholarships/other academic affairs of Base, Diploma & Degree Modules. The Postgraduate Cell deals with admission and other related affairs of M.Tech., MBA, M.Sc. and the Ph.D. Cell deals with all activities like admission of Ph.D. scholars, conducting DPGC, BPGS, and other activities related to Ph.D. Scholars. As on March, 2012, the numbers of UG students were 1171, PG students were 217 and Ph.D. Scholar were 134. Total student's strength at present is 1522, which reflects an appreciable increase in number as compared to the previous years.

### 3.2 Status Report regarding activities

The modular structure of curriculum at NERIST consists of three independent modules in Engineering and Technology Streams and one independent module in Forestry. These are as follows:

#### (a) Engineering & Technology Stream

1. Base (Certificate) Module
2. Diploma Module
3. Degree Module

#### (b) Forestry Stream

1. Degree Module

In the Engineering and Technology stream, the Institute runs three modules viz. Base (admitted after Class X), Diploma (admitted after Class 10+2/NERIST Base Module Course) and Degree Module (admitted after Diploma with requisite CGPA/Polytechnic Diploma with 1<sup>st</sup> Class). Each module is of 2 years duration, besides the duration of bridge courses of Degree Module admitted through NEE-III which takes to complete their degree in three years.

As per the recommendation of Academic Council in its 8<sup>th</sup> Meeting and approval of Board of Management the admission of Forestry discipline in Base Module Course was withdrawn from the academic session of 2010-2011 and the total seats were equally distributed in five engineering disciplines i.e. Agricultural, Civil, Electrical, Electronics & Communication and Mechanical Engineering. However, the 4 years Degree Programme (after class 10+2/NERIST Base Module Certificate Course) in Forestry stream exists in this Institute.

### 3.3 Courses offered for Under Graduate Programme

During 2011-12, the Institute offered the following courses in each module:

#### Base (Certificate) Module

Sl. No.	Base (Certificate) Module	Trades
1	Agricultural Engineering	Tractor Mechanic and Food Processing Technician
2	Construction Technology	Draftsman and Surveyor
3	Maintenance Engineering (Electrical)	Electrician
4	Maintenance Engineering (Electronics)	Electronic Technician
5	Maintenance Engineering (Mechanical)	Mechanical Craftsmanship and Refrigeration & Air Conditioning

#### Diploma Module (E&T Stream)

- a) Agricultural Engineering
- b) Civil Engineering
- c) Computer Science and Engineering
- d) Electrical Engineering
- e) Electronics & Electrical Communication Engineering
- f) Mechanical Engineering

#### Degree Module (E&T Stream)

- a) Agricultural Engineering
- b) Civil Engineering
- c) Computer Science and Engineering
- d) Electrical Engineering
- e) Electronics & Communication Engineering
- f) Mechanical Engineering

#### Degree Module (4-year programme in Forestry)

### 3.4 Course Offered in Post Graduate Programme

The Institute started its Post Graduate Courses and the following programmes were offered during 2011-2012.

#### M.Tech. (Part Time and Full Time)

- a) M.Tech. in Information Technology under the Department of Electronics and Communication Engineering.

- b) M.Tech. in Environmental Science & Engineering under the Department of Civil Engineering.
- c) M.Tech. in Geotechnical Engineering under the Department of Civil Engineering.
- d) M.Tech. in Power System Engineering under the Department of Electrical Engineering.
- e) M.Tech. in Computer Aided Manufacturing & Automation under the Department of Mechanical Engineering.
- f) M.Tech. in Computer Science & Engineering under the Department of Computer Science and Engineering.
- g) M.Tech. in Farm Machinery & Power under the Department of Agricultural Engineering.
- h) M.Tech. in Soil and Water Conservation Engineering under the Department of Agricultural Engineering.

### **M.Sc.**

- a) M.Sc. in Forestry under Department of Forestry
- b) M.Sc. in Physics under department of Physics
- c) M.Sc. in Chemistry under Department of Chemistry
- d) M.Sc. in Mathematics under Department of Mathematics

### **MBA**

Master of Business Administration under the Center of Management Studies.

### **Ph.D. (Part time) & Ph.D. (Full time)**

#### **Engineering streams**

- Agricultural Engineering
- Civil Engineering
- Computer Science & Engineering
- Electrical Engineering
- Electronics & Communication Engineering
- Mechanical Engineering

#### **Science, Humanities and Management streams**

- Forestry
- Physics
- Chemistry
- Mathematics
- Humanities & Social Sciences

## **3.5 Highlights**

The Academic Bye-Laws have been modified during this period.

### 3.6 Any other relevant information/data

Number of Students enrolled in July-December Semester, 2011-12 are summarized and furnished in the following tables.

#### (a) Under Graduate Programmes

**Table 1: No. of Students enrolled in 1<sup>st</sup> Year (Module-wise)**

DISCIPLINE	BASE	DIPLOMA	DEGREE
Agricultural Engineering (AE)	35	20	17
Civil Engineering (CE)	41	34	38
Computer Science & Engineering (CS)	<b>Does not exist</b>	04	14
Electrical Engineering (EE)	37	31	36
Electronics & Communication Engg. (EC)	40	34	36
Mechanical Engineering (ME)	40	28	26
<b>Total</b>	<b>193</b>	<b>151</b>	<b>167</b>

**Table 2: No. of Students enrolled in 2<sup>nd</sup> Year (Module-wise)**

DISCIPLINE	BASE	DIPLOMA	DEGREE
AE	19	15	14
CE	37	28	29
CS	<b>Does not exist</b>	10	24
EE	37	33	28
EC	32	33	34
ME	33	30	29
Forestry (FO)	--	<b>Does not exist</b>	<b>Shown separately</b>
<b>Total</b>	<b>158</b>	<b>149</b>	<b>158</b>

**Table No.3: No. of Students enrolled in Degree (Forestry)**

Year	No. of students
First	<b>29</b>
Second	<b>27</b>
Third	<b>06</b>
Fourth	<b>16</b>
<b>Total</b>	<b>78</b>

**Table 4: No. of Students enrolled in Degree Bridge Year**

Discipline	No. of students
AE	03
CE	13
CS	13
EE	10
EC	12
ME	08
<b>Total</b>	<b>59</b>

**Table 5: No. of Students enrolled as Repeaters**

DISCIPLINE	BASE	DIPLOMA	DEGREE
AE	7	01	01
CE	3	02	02
CS	Does not exist	01	-
EE	4	02	03
EC	3	06	02
ME	7	07	03
FO	4	-	-
<b>Total</b>	<b>28</b>	<b>19</b>	<b>11</b>

**Table 6: Gender-wise Detail of Students (Base Module)**

Discipline	1 <sup>st</sup> Year		2 <sup>nd</sup> Year		Repeater		Total
	Male	Female	Male	Female	Male	Female	
AE	23	12	13	06	05	02	61
CE	34	07	28	09	03	00	81
EE	28	09	28	09	03	01	78
EC	36	04	22	10	03	00	75
ME	37	03	28	05	06	01	80
FO	Course withdrawn		--	--	04	--	04
<b>Total</b>	<b>158</b>	<b>35</b>	<b>119</b>	<b>39</b>	<b>24</b>	<b>04</b>	<b>379</b>

**Table 7: Gender-wise Detail of Students (Diploma Module)**

Discipline	1 <sup>st</sup> Year		2 <sup>nd</sup> Year		Repeater		Total
	Male	Female	Male	Female	Male	Female	
AE	14	06	11	04	01	00	<b>36</b>
CE	28	06	21	07	02	00	<b>64</b>
CS	03	01	09	01	01	00	<b>15</b>
EE	26	05	25	08	01	01	<b>66</b>
EC	27	07	20	13	05	01	<b>73</b>
ME	27	01	29	01	07	00	<b>65</b>
<b>Total</b>	<b>125</b>	<b>26</b>	<b>115</b>	<b>34</b>	<b>17</b>	<b>02</b>	<b>319</b>

**Table 8: Gender-wise Detail of Students (Degree Module)**



Discipline	1 <sup>st</sup> Year		2 <sup>nd</sup> Year		Bridge		Repeater		Total
	Male	Female	Male	Female	Male	Female	Male	Female	
AE	12	05	12	02	03	00	01	00	<b>35</b>
CE	28	10	23	06	12	01	02	00	<b>82</b>
CS	11	03	18	06	10	03	00	00	<b>51</b>
EE	27	09	18	10	09	01	03	00	<b>77</b>
EC	25	11	25	09	09	03	02	00	<b>84</b>
ME	19	07	27	02	08	00	03	00	<b>66</b>
<b>Total</b>	<b>122</b>	<b>45</b>	<b>123</b>	<b>35</b>	<b>51</b>	<b>08</b>	<b>11</b>	<b>00</b>	<b>395</b>

Table 9: Gender-wise Detail of Students (Degree Module)

Discipline	1 <sup>st</sup> Year		2 <sup>nd</sup> Year		3 <sup>rd</sup> Year		4 <sup>th</sup> Year & Repeater		Total
	Male	Female	Male	Female	Male	Female	Male	Female	
FO	16	13	21	06	03	03	10	06	78
<b>Total</b>	<b>16</b>	<b>13</b>	<b>21</b>	<b>06</b>	<b>03</b>	<b>03</b>	<b>10</b>	<b>06</b>	<b>78</b>

Table 10: Category-wise Detail of Students (Base Module)

Discipline	GE	OBC	SC	ST	PH	Total
AE	13	02	03	40	03	<b>61</b>
CE	15	09	08	47	02	<b>81</b>
EE	16	12	03	46	01	<b>78</b>
EC	37	09	05	19	05	<b>75</b>
ME	34	12	04	29	01	<b>80</b>
FO	04	00	00	00	00	<b>04</b>
<b>Total</b>	<b>119</b>	<b>44</b>	<b>23</b>	<b>181</b>	<b>12</b>	<b>379</b>

Table 11: Category-wise Detail of Students (Diploma Module)

Discipline	GE	OBC	SC	ST	PH	Total
AE	07	04	01	22	02	36
CE	13	09	01	40	01	64
CS	04	02	01	08	00	15
EE	16	15	05	29	01	66
EC	46	09	01	13	04	73
ME	23	13	06	21	02	65
<b>Total</b>	<b>109</b>	<b>52</b>	<b>15</b>	<b>133</b>	<b>10</b>	<b>319</b>

Table 12: Category-wise Detail of Students (Degree Module)

Discipline	GE	OBC	SC	ST	PH	Total
AE	07	02	04	22	00	35
CE	18	09	06	49	00	82
CS	14	05	05	27	00	51
EE	27	12	02	36	00	77
EC	51	11	04	16	02	84
ME	29	09	03	25	00	66
FO	13	09	03	50	03	78
<b>Total</b>	<b>159</b>	<b>57</b>	<b>27</b>	<b>225</b>	<b>05</b>	<b>473</b>

Table 13: State-wise Detail of Students (Base Module)

Discipline	AI	AL	AM	MG	MN	MZ	NL	SK	TR	TOTAL
AE	06	19	05	05	05	07	09	04	01	61
CE	09	12	09	07	08	09	09	06	12	81
EE	08	12	08	08	07	05	09	07	14	78
EC	08	11	07	07	08	09	07	09	09	75
ME	08	08	11	12	07	05	10	07	12	80
FO	00	02	00	00	00	01	00	00	01	04
<b>Total</b>	<b>39</b>	<b>64</b>	<b>40</b>	<b>39</b>	<b>35</b>	<b>36</b>	<b>44</b>	<b>33</b>	<b>49</b>	<b>379</b>

Table 14: State-wise Detail of Students (Diploma Module)

Discipline	AI	AL	AM	MG	MN	MZ	NL	SK	TR	TOTAL
AE	05	06	02	04	07	02	05	02	03	36
CE	06	15	07	04	08	03	10	06	05	64
CS	03	01	01	01	04	03	01	00	01	15
EE	06	13	10	06	07	03	04	05	12	66
EC	09	10	12	07	08	04	08	05	10	73
ME	09	08	15	02	10	07	05	04	05	65
<b>Total</b>	<b>38</b>	<b>53</b>	<b>47</b>	<b>24</b>	<b>44</b>	<b>22</b>	<b>33</b>	<b>22</b>	<b>36</b>	<b>319</b>

Table 15: State-wise Detail of Students (Degree Module)

Discipline	AI	AL	AM	MG	MN	MZ	NL	SK	TR	TOTAL
AE	04	09	06	01	04	00	05	00	06	35
CE	06	30	14	03	07	03	07	03	09	82
CS	07	07	09	05	08	03	02	03	07	51
EE	14	12	14	06	09	06	09	02	12	84
EC	11	19	08	03	12	03	07	03	11	77
ME	09	13	15	02	06	00	07	01	13	66
FO	06	17	06	07	13	06	12	04	07	78
<b>Total</b>	<b>57</b>	<b>107</b>	<b>72</b>	<b>27</b>	<b>59</b>	<b>21</b>	<b>49</b>	<b>16</b>	<b>65</b>	<b>473</b>

## (b) Post-Graduate Programmes

Table 16: No. of Students enrolled in M.Tech. (Full Time)

Sl. No.	Name of the Dept.	Name of the Programme	No. of students admitted			Total
			1 <sup>st</sup> Year	2 <sup>nd</sup> Year	Repeater	
1	AE	Farm Machinery & Power	06	01	00	07
2	CE	Environmental Science & Engineering	17	05	01	23

3	CS	Computer Science & Engineering	04	03	00	07
4	EE	Power System Engineering	15	07	01	23
5	EC	Information Technology	09	05	00	14
6	ME	Computer Aided Manufacturing & Automation	02	04	00	06
<b>Total</b>			<b>53</b>	<b>25</b>	<b>02</b>	<b>80</b>

Table 17: No. of Students enrolled in M.Sc.

Sl. No.	Name of the Dept.	Name of the Programme	No. of students admitted			Total
			1 <sup>st</sup> Year	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	
1	PH	M.Sc. in Physics	02	03	03	08
2	CH	M.Sc. in Chemistry	01	08	00	09
3	MA	M.Sc. in Mathematics	02	04	01	07
4	FO	M.Sc. in Forestry	08	16	06	30
<b>Total</b>			<b>13</b>	<b>31</b>	<b>10</b>	<b>54</b>

Table 18: No. of Students enrolled in MBA

Sl. No.	Name of the Center	Name of the Programme	No. of students admitted			Total
			1 <sup>st</sup> Year	2 <sup>nd</sup> Year	Repeater	
1	CMS	MBA	30	32	03	65
<b>Total</b>			<b>30</b>	<b>32</b>	<b>03</b>	<b>65</b>

Table 19: No. of Students enrolled in M.Tech. (By Research &amp; Part Time)

Sl. No.	Name of the Dept.	Name of the Programme	No. of Students admitted		Total
			By Research	Part Time	
1	AE	Farm Machinery & Power	01	00	01
2	CE	Environmental Science & Engineering	00	02	02
3	CS	Computer Science & Engineering	00	03	03
4	EE	Power System Engineering	03	06	09
5	EC	Information Technology	00	01	01
6	ME	Computer Aided Manufacturing & Automation	00	02	02
<b>Total</b>			<b>04</b>	<b>14</b>	<b>18</b>

Table 20: No. of Students enrolled in Ph.D. (Part Time &amp; Full Time)

Sl. No.	Name of the Dept.	No. of Students admitted		Total
		Part Time	Full Time	
<b>Engineering Disciplines (A)</b>				
1	AE	04	02	06
2	CE	08	00	08
3	CS	05	00	05

4	EE	03	00	<b>03</b>
5	EC	05	00	<b>05</b>
6	ME	03	01	<b>04</b>
<b>Total (A)</b>		<b>28</b>	<b>03</b>	<b>31</b>
<b>Science, Humanities &amp; Management Studies disciplines (B)</b>				
7	Physics	09	05	<b>14</b>
8	Chemistry	02	02	<b>04</b>
9	Mathematics	08	07	<b>15</b>
10	Forestry	23	22	<b>45</b>
11	Humanities & Social Sciences	16	05	<b>21</b>
12	Management Studies	04	0	<b>04</b>
<b>Total (B)</b>		<b>62</b>	<b>41</b>	<b>103</b>
<b>Total (A) + (B)</b>		<b>90</b>	<b>44</b>	<b>134</b>

## Admission Policy

### a) General

In the modular concept of education adopted at the Institute, the admission is direct at the Certificate level, i.e., in Base Module. But in the next higher modules, i.e, in Diploma and Degree Module, the percentage of students who attain the minimum prescribed level of performance in the lower level, get promoted or are moved up vertically, and some percentage of seats are filled every year directly (lateral entry) though Entrance Examination.

For filling up of seats by lateral entry, there is a quota allotted to the eight north eastern states. 90% of seats are filled by candidates from within the north eastern region, and the remaining 10% are earmarked for the candidates from the rest of the country. Each state has a quota of 10% seats, and 10% seats are filled on over-all merit basis from amongst the permanent residents of the eight north eastern states. The 10% seats however, include 3% seats earmarked for physically handicapped candidates of Indian citizenship.

The direct admission is made through entrance examinations called NEE-I, II and III for Base, Diploma and Degree Modules respectively. The NEE is conducted at various examination centres in the region, covering all the eight states. Admission to P.G./Ph.D. programmes is done at departmental level, through written tests, group discussion and interview.

There is also a provision to admit in-service sponsored candidates, one each from the eight N.E. States, in Degree Module directly, provided the sponsored candidates fulfill the minimum eligibility criteria of 60% marks in their Polytechnic Diploma. One sponsored candidate from NERIST is also admitted in Degree Module every year.

The sanctioned strength (seats) in each course of each module till the academic session 2009-10 was 30(Thirty). However, on the recommendation of Academic Council in its 9<sup>th</sup> meeting, the intake of five engineering disciplines has been increased from 30 to 40 from the Academic Session 2010-11. The Forestry course in Base Module has been discontinued and intake has also been increased from 12 to 30 from the Academic Session 2010-11.

#### **b) Entrance Examination**

The NERIST Entrance Examination (NEE) is conducted by an independent body called NEE Cell which is responsible for smooth conduct of examination for admission into different modules in NERIST. The Cell is headed by a Chairman and assisted by an ex-officio Member Secretary.

**i) Admissions Through NEE** – Applications were invited through advertisement in local and national news papers on 20.12.2010 and through the Directorates of all eight North Eastern States except Arunachal Pradesh by posting admission notification for conducting NEE-2011 on 30<sup>th</sup> April & 1<sup>st</sup> May, 2011 i.e. (NEE-I on 01.05.2011 and NEE-II & III on 30.04.2011). Last date for receipt of applications was 04.03.2011. Selling of application form cum information brochure was done through the Axis Bank branches throughout the country. A total of 12,199 applications were received out of which 320 students got admitted. Results were declared on 15.05.2011. Details of candidates admitted are placed at Annexure-X.

## SECTION – 4

# DEPARTMENTS

### 4.1 DEPARTMENT OF FORESTRY

#### 4.1.1 A Brief Profile of the Department

The Department of Forestry came into existence in 1986 along with the establishment of NERIST with an object to impart forestry education to the younger generations of eight north eastern states of India. The department currently offers programmes at degree (4 years B. Sc), Post graduate (2 year M. Sc) and Ph. D levels. It is set against a large landscape of verdant scenic beauty and is equipped with infrastructure designed to produce professional personnel with management capacity and ability to take up the future challenges in the field of forestry. Forestry courses in the institute are also an attempt to conform to National Forest Policy 1988, which emphasizes forestry education in India. North-Eastern states of India are endowed with a large forest cover which requires intellectual human resources for their conservation and sustainable management. Moreover, the region is considered as a mega diversity hot spot area rich not only in biodiversity but also having many rare, endangered, threatened and endemic species, some of which may become extinct soon without human intervention. With the vast learning experience, the outgoing students would be able to accomplish the mission of maintaining a balance between preservation of the genetic resources and sustainable utilization of forest resources on one hand and development of the region on the other. The students are given exposure and training in various forest-based aspects through summer training, project and dissertation work to gain practical knowledge and skills.

The back bone of the multi-disciplinary forestry course in the institute is its “faculty”, who are specialized in frontier subjects i.e. Forest Ecology, Wood Science and Technology, Horticulture, Taxonomy, Ethnobotany, Silviculture, Biodiversity conservation, Wildlife Management, Biotechnology, Microbiology, Forest Genetics, Forest Economics and Management etc. Apart from teaching, faculty members are also actively involved in conducting research work in different field of forestry and allied subjects and guiding Ph. D. students in their respective filed of specializations. The department has produced so far more than 36 doctoral theses leading to Ph.D. degrees.

#### 4.1.2 Academic activities

Education Forestry Science and research in Forestry and its allied discipline are the major academic activities of the department. The various academic courses presently offered in Forestry sciences are:

SI. No	Name of Course	Present enrollment
1	B. Sc. Forestry (4 Years)	80
2	M. Sc. (2 years)	28
3	Ph.D. programme (minimum three years with one year course	41

	work)	
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All the important aspects of Forestry viz, Forest management, conservation, protection and utilization, Forest policy and planning, Forest Biology, Wildlife management, Silviculture, Wood Sciences & Technology, Application of GIS and Remote Sensing, Soil biology and management, Microbiology and Biotechnology etc have been covered along with related interdisciplinary subjects like Biochemistry, Bio-statistics, Surveying, Marketing etc. particularly in B. Sc. Forestry. The department has the potential to do justice with the Forestry education in NERIST. Industrial training for 50 days is an integral component of B.Sc. forestry course wherein students are attached with forest departments, zoological parks, research institutions across the country and in non-government organisations such as M. S. Swaminathan Research Foundation; WIMCO, PRADAN, etc. The major topics undertaken in industrial training are natural resource management, wildlife management, tea cultivation and management, rural management, remote sensing, NWFP and ecology, etc.

The Department has to its credit of more than 50 projects completed and about 10 ongoing projects. The students working in the research projects have also got the opportunity to register for Ph.D. by which several young scientists are being produced by the Department and the department has already produced more than 36 Ph. D. scholars. The faculty members working in different areas of forestry and allied disciplines have contributed significantly to the over all knowledge dissemination through publications in scientific journals of national and international repute.

The Institution has a strong collaboration at national and international level with various national and international institutes.

#### **4.1.3 Laboratories and Laboratory development**

The Department has 8 well equipped laboratories for conducting practical classes and R & D activities inside the department beside three field labs (Nursery, Net house & Mist chamber). The Research Laboratory of the Department caters to the need of research activities of the department. It may be mentioned that the department has undertaken more than 70 research projects (completed/ongoing) sponsored by several funding agencies like MHRD, DST, CSIR, MOEF, UNESCO, GBPIHED, ICAR, ICFRE, DBT, ISRO, DSIR, FNDP etc. Laboratories of Forestry are well equipped with conventional and sophisticated instruments and apparatus like seed germinator, BOD incubator, portable leaf area meter (Licor), laminar air-flow chamber, rotary shaker, refrigerated centrifuge, refrigerator, deep freezer, hot air oven, muffle furnace, spectrophotometer, flame photometer, colony counter, autoclave, electronic balance, research microscopes (Leica), stereo microscope (Zeiss), wood microtome, circular saw, automatic weather station, PCR systems, Gas Chromatograph, Socs Plus and Fibra Plus, Kelplus etc. for conducting different experiments for student practices at various modules as well as research activities. Well developed departmental computer centre and Library provides the resources to students and faculties to carry out their academic and research activities. The department has good number of computers with internet on LAN and printing facilities.

### Existing Laboratories

Lab No.	Name of lab and facilities	In-charge
Lab 1	Wood science & Forest products	M. Sharma
Lab 2	Plant Microbe Interaction and Microbial Biotechnology	K. Shrivastava
Lab 3	Forest Systematic Ethnobotany & Horticulture	P. R. Gajurel
Lab 4	Environment, NRM and Restoration Ecology.	G. Pangging
Lab 5	Silviculture, Forest Ecology and Biodiversity	O.P.Tripathi & L.B.Singha
Lab 6	Wildlife conservation	A. Kumar
Lab 7	Remote sensing and GIS lab	O. P. Tripathi
Facility 1	Computing Facility	L. B. Singha
Facility 2	Department library	A. Kumar
Facility 3	Forest Nursery	P. R. Gajurel
Facility 4	Forestry Herbarium	P. R. Gajurel
Facility 5	Bioinformatics centre	S S. Singh

#### 4.1.4 Project Completed by UG/PG/Ph.D. Students

##### (a) UG Students

Sl. No.	Name of students	Project Title	Name of Project Guide.
1.	Ruokuovolic Dziivichu.	“Studies of Ficus species diversity in Papum pare district of Arunachal Pradesh.”	P. Rethy
2.	Leishimi Zimik	“Comparative study of homegardens of Assam and Arunachal Pradesh in terms of species diversity and plant utilization pattern.”	M. L. Khan
3.	Mr. Rajat Sarkar	“Estimation of bark and timbers of Terminalia arjuna.”	C. L. Sharma
4.	J. Debbarma	“Studies on Population Distribution, Status and Conservation of Indian Bison (Bos gaurus) in Trishna Wildlife Sanctuary, Tripura, India.”	P.P. Mary & A. Kumar
5.	Michel Lalwalswa	“Microscopic features of some timbers of Mizoram.”	M. Sharma
6.	Adangnaro Jamir	“Ethnobotany on Angami & Ao community of Nagaland.”	P R. Gajurel
7.	Ms. Projjolita Mahanta	“Spectral un mixing of Landsat TM data for sub-pixel level biomass estimation of Albizia lebbeck (L.) Benth. of tea garden: A case study of Lakhimpur district, Assam.”	OP Tripathi



8.	Jeje Bhutia	Lhamu	“Current Distribution, Population Status, Habitat Characteristics and Conservation of Red Panda in Barsey Rhododendron Sanctuary, Sikkim, India.”	A. Kumar
9.	Pawan Tiwari	Kumar	“Study the significance of shade trees in tea garden: A case study in Arunachal Pradesh and Assam.”	G. Pangging

### (b) Post-Graduate Students

Sl. No.	Name of students	Project Title	Name of Project Guide.
	Wahengbam Deepanita Devi.	“Vegetative propagation through soft-wood cutting by using growth hormone.”	P. Rethy
	Arambam Satyabrata.	“Documentation of Non-Timber forest product yielding plants species of Arunachal Pradesh.”	P. Rethy
	Hutoka Y. Jakha	“Tree diversity, population structure and regeneration status of tree species in Intangki National park, Nagaland.”	M. L. Khan
	T. Anupam Singh	“Study on phytosociology and regeneration pattern of tree species in two sacred groves of Manipur.”	M. L. Khan
	Nani Yasse	“Xylotomy of conifers of Ziro and adjoining areas.”	C. L. Sharma & M. Sharma
	Subhashish Das	“Wood properties variation in Duabanga grandiflora Walp. In relation to complete tree utilization.”	C. L. Sharma & M. Sharma
	Norita N Sohlang	“Study of anatomical wood characteristics of some hardwoods of Meghalaya.”	M. Sharma & C. L. Sharma
	Asha Rana	“Studies on Winter Habitat Utilization and Diet composition of Capped Langur (Trachypithecus pileatus) in Fragmented Forest Stand in Balipara Reserve Forest, Assam, India.”	Mary P.P. & A. Kumar
	Hage Kani	“Studies on activity pattern and time budget of Eastern Hoolock Gibbon in Biological Park, Itanagar, Arunachal Pradesh, India.”	Mary P.P. & A. Kumar
	Taw Yallar	“Studies of morphological variation in fruit and seed in Leguminosae family of Itanagar area Arunachal Pradesh.”	P. R. Gajurel
	Techi Begi	“Status of Diversity, distribution and management of medicinal plants of Lohit, Lower Dibang Vally of Arunachal Pradesh.”	P. R. Gajurel
	Amit Tripura	“Study on woody species diversity, community characteristic and population structure in disturbed and undisturbed	O.P. Tripathi

		forest of Sepahijala Wildlife Sanctuary, Tripura.”	
	S. Kikhi	“Land-use-land-cover dynamics and community characteristics of Sepahijala Wildlife Sanctuary, Tripura, India.”	O.P. Tripathi
	Niwancy Barea	“Genome characterization and molecular analysis of wild and cultivated bananas (Mussa sp.) in Meghalaya, North East India.”	S. S. Singh
	Joel Gangmei	“Development of North East forest resource database (NEFRED).”	S. S. Singh
	Soyala Kashung	“Study on Distribution Pattern and Population Status of Threatened Mammalian Species in Sepahijala Wildlife Sanctuary, Tripura, India.”	A. Kumar
	Diana Ethel Amonge	“Assessment of Small and Medium Sized Mammalian Species in Isolated Fragmented Forest Stand in Balipara Reserve Forest, Assam, North-East India.”	A. Kumar
	Shanskem Passah	“Natural Resource Management in Arunachal Pradesh: A case study in fringed villages of Doimukh Forest Range.”	G. Pangging
	Marry Thangjam	“Study on the eco-restoration of watershed area: A case study of cluster of villages near Loktak lake.”	G. Pangging

## (c) Ph.D. thesis awarded

Guide	Title	Student
M. L. Khan	“Population structure and conservation practices of <i>Aquilaria malaccensis</i> Lam. in homegardens of upper Assam and its prospects in socio-economic development.”	Purabi Saikia
K. Shrivastava	“Studies on yeast diversity of traditional fermented beverages of Arunachal Pradesh: Biochemical and molecular aspects.”	Greeshma A.G.
P.Rethy & P.R.Gajurel	“Taxonomic studies on tree flora of Papum Pare District of Arunachal Pradesh with reference to the locally utilized species.”	Bhabajit Doley.

## (d) Ph. D. thesis completed (pre submission seminar held)

Guide	Title	Student
O.P Tripathi & M L Khan	“Inventory, conservation and sustainable utilization of agrobiodiversity at agricultural landscape in East Siang district of Arunachal Pradesh, Eastern Himalaya.”	Jimmy Yebjeny Yumnam.
A. K. Shukla	“Studies on fungal diversity associated with	Tasso Tabin

(RGU) & K. Shrivastava	Aquilaria agallocha Roxb. and their role in the formation of agarwood.”	
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#### 4.1.5 Short-term courses/seminars/workshops/conferences organized

Coordinator(s)	Title of the course	Duration/ Date	Funding agency
Binay Singh & C. L. Sharma	Six days Training programme on “Management of Social Forestry for sustainable livelihood.”	25 <sup>th</sup> April - 30 <sup>th</sup> April, 2011	NIRD-NEC, Guwahati
Binay Singh & C. L. Sharma	Six days Training programme on “Capacity Building for Rural Development Functionaries of North Eastern Region.”	21 <sup>st</sup> Nov. - 26 <sup>th</sup> , Nov. 2011	NEC, Shillong
C.L. Sharma & O. P. Tripathi	One day workshop on “Intellectual Property Rights Awareness.”	23 <sup>rd</sup> March, 2012	MHRD IPR Chair, Tezpur University
S.S.Singh	“4 <sup>th</sup> North East Bioinformatics Network (NEBInet) Coordinators Meeting”, held at NERIST	10-11 <sup>th</sup> November 2011	DBT , New Delhi
G. Pangging	Final workshop of UNESCO-MacArthur funded project: “Cultural Landscapes: The Basis for Linking Biodiversity Conservation with Sustainable Development in Arunachal Pradesh.”	26 <sup>th</sup> April, 2011	UNESCO and MacArthur foundation
C. L. Sharma, O. P. Tripathi, A. Kumar & S. S. Singh	Statistical data analysis using SPSS	31 <sup>st</sup> Oct-4 <sup>th</sup> Nov 2011	CSS centre, ISI, Kolkata and Dept. of Forestry, NERIST

#### 4.1.6 Short-term courses/seminars/workshops/conferences attended by the faculty

C. L. Sharma, M. Sharma, K. Shrivastava, O.P. Tripathi, S. S Singh attended short term course on ‘2<sup>nd</sup> One - Day INDEST User Convention’ sponsored by INDEST-AICTE consortium held at NERIST on 10<sup>th</sup> Sept., 2011.

C. L. Sharma, M. Sharma, A. Kumar attended short term course on ‘Intellectual property rights’ organised by MHRD IPR chair, Tezpur University and NERIST on 23<sup>rd</sup> March, 2012.

Mary P.P. attended short term course on ‘Adaptive Management of Ecosystem: The knowledge Systems of Societies for Adaptation and Migration of Impacts of Climate Change organized by the Centre for Ecological Economics and Natural Resources, ISEC, Bangalore on 19<sup>th</sup> -20<sup>th</sup> Oct, 2011.

K. Shrivastava attended short term course on 'Role of scientists in natural resources & environment management' held at Indian Institute of Forest Management, Bhopal, MP, from 5<sup>th</sup> - 9<sup>th</sup> Dec, 2011.

K. Shrivastava attended short term course on 'Role Microbes in health and agriculture' held at School of Life Sciences, JNU, New Delhi from 12-13<sup>th</sup> March, 2012.

P. R. Gajurel attended short term course on 'Consultative workshop on Bio-Resources of North-East India- Through a network among North Eastern States' organized by Deptt. of LIFE SC., Manipur University, 12-13<sup>th</sup> March, 2012.

P. R. Gajurel attended short term course on 'International Conference on Global Food Security-2011' organized by RGU, Doimukh 13- 15<sup>th</sup> Feb., 2012.

L.B. Singha attended short term course on 'International seminar on Tribes, Resources and State' organized by McGill Institute for Global Food Security, McGill University, Qc, Canada, 4-6<sup>th</sup> Oct., 2011.

L.B. Singha attended short term course on 'International Symposium on Quebec Centre For Biodiversity Science' organized by Biology Dept., McGill University, Qc, Canada, 7-9<sup>th</sup> Dec., 2011.

L.B. Singha attended short term course on 'Rendez-Vous Bioinformatique 2011- Computational biology: enabling genomics and next-generation sequencing' organized by Genome Quebec, McGill University, Qc, Canada, 8<sup>th</sup> Dec., 2011.

L.B. Singha attended short term course on 'International Symposium on Integrative Genomics: From Microbes to Humans' organized by The Centre for Structural and Functional Genomics, Concordia University, Qc, Canada, 22<sup>nd</sup> Feb., 2012.

O.P. Tripathi attended National Seminar on 'Climate change, development and social transition in north east: impact and issues' organized by Rajiv Gandhi University, Arunachal Pradesh 10-12<sup>th</sup> Nov., 2011.

O.P. Tripathi presented a paper on 'Decadal NAP success of Arunachal Pradesh (2001-10)' organized by RC-NAEB, NEHU, Shillong, NERIST, 21-22<sup>nd</sup> Feb., 2012.

O.P. Tripathi attended short term course on 'Social Mobilization for Rural Development-Concept and case study' organized by Capacity Building for Rural Development Functionaries of North Eastern Region sponsored by NERC, NIRD, Guwahati 21-26<sup>th</sup> Nov., 2011.

S. S Singh attended summer School on: Tools for Biodiversity Conservation organized by Dept. of Biotechnology, IIT-Guwahati, Assam, 10-15 July, 2011.

S. S Singh attended Consultative Meeting of Institutes: Biotechnology in NE India organized by Dibrugar University, Assam, 17<sup>th</sup> July, 2011.

S. S Singh attended 24<sup>th</sup> IPS-National Symposium on: Microorganisms and Plant Growth organized by Dept. of Botany, Gauhati University, Assam, 4-5<sup>th</sup> Nov., 2011.

S. S Singh attended 4<sup>th</sup> NEBINet Coordinators Meeting organized by Dept. of Forestry, NERIST, 10-11<sup>th</sup> Nov., 2011.

S. S Singh attended National Symposium on Bioinformatics organized by Bioinformatics Centre, University of Jammu, J & K, 2<sup>nd</sup> Feb., 2011.

S. S Singh attended 23<sup>rd</sup> All India Annual Biotechnology Information System Network (BTISNet) Coordinators Meeting organized by Bioinformatics Centre, Sri Mata Vaishnu Devi University, Katra, J & K, 3-4<sup>th</sup> Feb. 2011.

A. Kumar attended short term course on Cheetahs Conservation Biology organized by Cheetah Conservation Fund, Otjiwarongo, Namibia from 5<sup>th</sup> June - 3<sup>rd</sup> July, 2011.

A. Kumar attended short term course on Statistical data analysis using SPSS Organized by CSS centre, ISI, Kolkata and Dept. of Forestry, NERIST from 31<sup>st</sup> Oct-4<sup>th</sup> Nov., 2011.

A. Kumar attended National conference on Liquid Crystals organized by Dept. of Physics, NERIST from 15-17<sup>th</sup> Nov., 2011.

A. Kumar attended short term course on Tribes, Resources and State held at Rajiv Gandhi University, Itanagar, from 13-15<sup>th</sup> Feb., 2012.

A. Kumar attended short term course on Planet Under Pressure held at International Convention Center (ICC), Excel London, UK, from 25-29<sup>th</sup> March, 2012.

#### 4.1.6 New Degrees/Professional Memberships obtained by the faculty

A. Kumar has become a Life member of Population-Environment Research Network

#### 4.1.7 Achievements/awards/recognition earned by the faculty

Faculty	Achievements/awards/recognition
M. L. Khan	On the Editorial Board of the Journal: Scientific World Journal (Ecology) Section
P. R. Gajurel	Selected as a member of Editorial board for the journal Pleionea
L.B. Singha	DBT Overseas Fellow for One-year exposure to International Laboratory in the Biology Department of Concordia University, Montreal, Quebec, Canada
O.P .Tripathi	Associate Editor: Asian Journal of Agriculture Sciences
	Associate Editor: Research Journal of Environmental and Earth Sciences
	Reviewer: Research Journal of Environmental and Earth Sciences
S. S. Singh	Best Research Poster Award in the National Symposium in Bioinformatics held on 2 <sup>nd</sup> Feb, 2012 at University of Jammu, J & K

## 4.1.8 Projects sanctioned by outside Agencies to the faculty

PI & Co PI	Title of the project	lakhs)	Agency /	Fund received during the year (Lakhs.)
B. Singh P. Rethy PR. Gajurel	Mapping, Management and Analysis of Medicinal plants using GIS, Phytochemical and Molecular Techniques”	200.12	NEC, Shillong	37.97
P. Rethy (PI) & P.R.Gajurel (Co-PI)	“Documentation & Conservation of Wild edible, Aromatic and Medicinal plants of Arunachal Pradesh and adjoining state of the Region.”	24.00	NEC, Shillong, 13 <sup>th</sup> Sept 10	10 (April 2011)
P.R.Gajurel (PI) & P. Rethy, Co-PI	“Studies on Diversity Taxonomy and population status of Endemic & rare medicinal plants for promotion of Conservation in Arunachal Pradesh.”	26.50	NEC, Shillong, 22 <sup>nd</sup> Oct. 10	10 (April 2011)
P.R.Gajurel (PI) P. Rethy (Co-PI)	“Development of a digital database on Bio-Resources of North-East India- Through a network among North Eastern States.”	27.00	DBT Nov 2012	13.77
P.R.Gajurel (PI)	“Botanical & Ecological Survey of four MPCA (Medicinal Plants Conservation Area) areas of Arunachal Pradesh.”	8.40	APSMPB Itanagar, Sept 2012	3.36
L.B. Singha (Coordinator)	“Modernization of Plant Biotechnology and Biochemistry Laboratory.”	07.00	AICTE, New Delhi	07.0
O.P .Tripathi (PI)	“AICRP on Sacred Grove Ecosystem Services Assessment in Arunachal Pradesh.”	36.0	MoEF, New Delhi, 3-years	8.8656
S. S Singh	“Recurring grant Bioinformatics Infrastructure Facility (BIF), Dept. of Forestry, NERIST.”	4.00	DBT, Govt. of India (1yr)	4.0
S. S Singh (Project Coordinator & PI) & P.R. Gajurel (CO-PI)	DBT-Twining Project on “Computational and biochemical approaches for in silico screening and discovery of drug-like leads: Antidiabetic and antihypertensive compounds from Clerodendrum	22.96	DBT, Govt. of India (1yr)	-

	spp. occurring in NE India.”			
A. Kumar (Co-PI)	“Development of digital database on bio-resources of north-east India: Through network approach among North Eastern States.”	27.00	DBT, New Delhi, Nov 2012	13

#### 4.1.8 Research Publications

##### a) Refereed Journals

Saikia B., **Rethy P., Gajurel. P. R. & Doley B.**, (2012): Exotic wild edible plants from Sonitpur District, Assam. *J. Bio. Sci. Res.* vol3 (1):71-75.

Bharali S., Paul A., **Khan M.L. and Singha L.B.** (2012): Survival and growth of seedlings of two *Rhododendron* tree species along an altitudinal gradient in a temperate broad leaved forest of Arunachal Pradesh, India. *International Journal of Plant Research* 2(1): 39-46. DOI: 10.5923/j.plant.20120201.06, ISSN: 2163-2596 (print); ISSN: 2163-260X (electronic).

Bharali S., Paul A., **Khan M.L. and Singha L.B.** (2012): Impact of altitude on population structure and regeneration status of two *Rhododendron* species in a temperate broad leaved forest of Arunachal Pradesh, India. *International Journal of Ecosystem* 2(1): 19-27. DOI: 10.5923/j.ije.20120201.04, ISSN: 2165-8889 (print); 2165-8919 (electronic).

Saikia P. and **Khan M.L.** (2012): *Aquilaria malaccensis* Lam.: A red listed and highly exploited tree species in Assamese homegarden. *Current Science* 102(4), 546. ISSN. 0011-3891.

Barbhuiya A.R., Arunachalam A., Pandey H.N., **Khan M.L.** and Arunachalam K. (2012): Fine root dynamics in undisturbed and disturbed stands of a tropical wet evergreen forest in northeast India. *Tropical Ecology* 53(1): 67-77. ISSN: 0564-3295.

Saikia P., Choudhury B.I. and **Khan M.L.** (2012): Floristic composition and plant utilization pattern in homegardens of Upper Assam, India. *Tropical Ecology* 53(1): 105-118. ISSN: 0564-3295.

**Sharma, C. L., Sharma, M.** Carter, M.J. and Kharkongor, B. M. (2012): Inter species wood variation of *Castanopsis* species of Meghalaya. *Journal of Indian Academy of Wood Science* .Doi 10.1007/S 13196-012-0031-1.

Yumnam J Y and **Tripathi OP** (2012): Traditional knowledge of eating raw plants by the Meitei of Manipur as medicine/nutrient supplement in their diet. *Indian Journal of Traditional Knowledge*, 11:45-50. (ISSN: 0975-1068).

**Karuna Shrivastava**, Greeshma A. G. & B. Srivastava (2012): Biotechnology in Tradition-Methods of starter preparation for alcoholic beverages employed by different tribal communities of Arunachal Pradesh. *Indian Journal of Traditional Knowledge*, 11(1), 194-201. ISSN: 0975-1068 (Online); 0972-5938 (Print).

**Karuna Shrivastava**, Greeshma A. G. & B. Srivastava (2012): Biotechnology in Tradition – A process technology of alcoholic beverages practiced by different tribes of Arunachal Pradesh, North East India. *Indian Journal of Traditional Knowledge*, 11 (1), 81-89. ISSN: 0975-1068 (Online); 0972-5938 (Print).

Bharali S., Paul A., **Khan M.L. and Singha L.B.** (2011): Species diversity and community structure of a temperate mixed *Rhododendron* forest along an altitudinal gradient in West Siang District of Arunachal Pradesh, India. *Nature and Science* 9(12): 125-140. ISSN: 1545-0740.

Bharali S. and **Khan M.L.** (2011): Climate change and its impact on biodiversity, some management options for mitigation in Arunachal Pradesh. *Current Science* 101(7): 855-860. ISSN: 0011-3891.

Deka J., **Tripathi O.P. and Khan M.L.** (2011): A multi-temporal remote sensing approach for monitoring changes in spatial extent of freshwater lake of Deepor Beel Ramsar Site, a major wetland of Assam. *Journal of Wetland Ecology* 5: 40-47. ISSN: 2091-0363.

Saikia P. and **Khan M.L.** (2011): Diversity of medicinal plants and their uses in homegardens of upper Assam, Northeast India. *Asian Journal of Pharmaceutical and Biological Research* 1(3): 296-309. ISSN: 2231-2218 (online).

Yumnam J.Y., Bhuyan S.I., **Khan M.L. and Tripathi O.P.** (2011): Agro-diversity of East Siang-Arunachal Pradesh, Eastern Himalaya. *Asian Journal of Agricultural Sciences* 3(4): 417-426. ISSN: 2041-3890.

Yumnam JY, Bhuyan SI, **Tripathi OP and Khan ML** (2011): Study on ethano-medicinal plants used by Adi tribe of East Siang district, Arunachal Pradesh. *Journal of Economy and Taxonomic Botany*, 35: 369-377. (ISSN: 2050-9768).

**Singh S. S.**, Tiwari S.C., Dkhar M. S., Schloter M. and Gattinge A. (2011): Microbial community structures of degraded and undegraded humid tropical forest soils as measured by phospholipid fatty acid [PLFA] profiles. *Journal of Biodiversity and Ecological Sciences*, 1(3):197-212 (Published in Iran, ISSN: 2008-9287).

**Sorokhaibam S. Singh**, Michael Schloter, Subhash Chandra Tiwari and Mamta S. Dkhar (2011): Diversity of Community Soil DNA and Bacteria in Degraded and Undegraded Tropical Forest Soils of North-Eastern India as Measured by ERIC-PCR Fingerprints and 16S rDNA-DGGE Profiles, *Journal of Biological and Environmental Sciences*, 5(15), 183-194(Published in Turkey, ISSN: Printed :1307-9530 Online:1308-2019).



**Pangging, G.**, Arunachalam, A., Mawphlang, I.S.L., and Biswas, S. (2011): Traditional management practices of natural resources of forest dependent communities in Arunachal Pradesh- A case study of fringe villages in Banderdewa forest range. Indian Journal of Traditional Knowledge, Vol. (10) 2. April 2011. P 269-275.

### (b) Conference Abstract

**Gajurel P. R.**, Potsangbam S. & Rethy P. (2012), "Common Potential Forest Resources for Socioeconomic Upliftment of the Rural People of Assam and Arunachal Pradesh" at Choiduwar College, Gohpur, Assam.

Paul, A., **Khan, M.L. and Tripathi, O.P.** (2012), "Conservation and management of *Taxus wallichiana* and *Illicium griffithii* – two economically important medicinal tree species in Arunachal Himalaya" in International Conference on Global Ecosystems, Biodiversity and Environmental Sustainability in the 21<sup>st</sup> Century (ICGEBEnS). Feb 15 – 17, 2012. Department of Ecology and Environmental Science, Assam University, Silchar, Assam.

Saikia M., **Shrivastava K., Singh S. S.**, (2012), "Large scale propagation of Agarwood tree, the liquid gold of North East India and biological control of *Heortia vitessoides* Moore, its serious defoliator" in Proc. National Symposium on "Plant Biology and its role in sustainable food and energy production, Dept. of Botany, GGU, Bilaspur (17-18, March, 2012).

**Shrivastava K.**, Tabin T. & Fanai Lalchhuanliana, "Arbuscular mycorrhizal associations in relation to properties of rhizospheric soils supporting *Aquilaria agallocha* Roxb. in Arunachal Pradesh" , Abstract no.MHAP-17, Pp. 72. Presented in National Symposium on "Microbes in health and agriculture" held at School of Life Sciences, JNU, New Delhi from 12th-13th March, 2012.

**Shrivastava K.**, Priyabala Y., **Singh S. S. & M.L. Khan**, "Occurrence of fungi in Arsenic contaminated groundwater of border area adjoining Assam and Arunachal Pradesh", Abstract no.MHAP-97, Pp. 152. Presented in National Symposium on "Microbes in health and agriculture" held at School of Life Sciences, JNU, New Delhi from 12th-13th March, 2012.

Niwancy Bareh, **Singh S. S.**, and Chongtham Roshan (2012), "Genome characterization and phylogenetic analysis of wild and cultivated bananas (*Musa* spp.) of Meghalaya, North East India using morphological, molecular and bioinformatics approaches" in Proc. National Symposium on Bioinformatics- Challenges in the Post Genomic Era, University of Jammu, Jammu .

**Kumar A.** and Solanki (2012), "Utilization Pattern of Wildlife Resources by Tribal Societies of Western Arunachal Pradesh, Northeast India" in International seminar on 'Tribes, Resources and State' held from 13-15<sup>th</sup> Feb, 2012 at Rajiv Gandhi University, Itanagar, Arunachal Pradesh.

**Kumar A.**, Sarma K., Krishna M., **Tripathi O.P. & P.R. Gajurel** (2012). "Impact of forest fragmentation on population and conservation status of Eastern hoolock gibbon

(Hoolock leuconedys) in low land tropical forest of Lower Dibang Vally district of Arunachal Pradesh, Northeast India”. presented in International conference on “Planet Under Pressure” held from 25-29<sup>th</sup> March 2012 in London, UK.

Amarjit Lahkar<sup>1</sup> and **Kumar A.** (2012). “Assessment of Human-Elephant Conflict and Conservation issues in Golaghat District of Upper Assam, Northeast India” in National seminar at Nalbari college, Nalbari, Assam.

Buragohain R., **Rethy P., Gajurel P.R., Singh B.** and Potsangbam S. (2011), “Study of Taxonomic Diversity of Moraceae in Arunachal Pradesh, India” Annual conference of India Association for Angiospermic taxonomy (IAAT) and national seminar on Biodiversity conservation and climate change (BCCC-11), December 2-4, at Environment & Sustainability Department CSIR- institute of Minerals and Materials Technology, Bhubaneswar, odisha, India.P.p.150.

**Gajurel P. R.,** Potsangbam S., **Rethy P.** & Buragohain R. (2011), “High value Non Timber Forest Produces (NTFPs) for livelihood support to the Tribal Communities in Arunachal Pradesh” at RGU, Doimukh, Itanagar.

Paul, A., **Khan M.L.,** Das, A.K. and **Tripathi, O.P.** (2011), “Rhododendrons in Western Arunachal Himalaya: Priority Site for Conservation” Proceeding of the National Seminar on Emerging Trends in Biosciences and Future Prospects on 29 – 30 November 2011 at Pachhunga University College, Aizawl, Mizoram, organized by Department of Zoology, PUC, in collaboration with the Department of Zoology, Mizoram University. Sponsored by University Grants Commission (NERO) and North Eastern Council.

Bhuyan, S.I., Yumnam, J.Y., **Tripathi, O.P. and Khan M.L.,** (2011), “Soil fertility status of two different agro-ecosystems in Mebo, East Siang district of Arunachal Pradesh” International Seminar on Bioresources and Human Sustenance, 20-22<sup>nd</sup> October, 2011. Cotton College, Guwahati, Assam.

**L.B. Singha,** A.R Barbhuiya, B.I. Choudhury, **Khan M.L.,** and S. Dayanandan (2011), “Molecular Systematics of Bamboo Resources in Eastern Himalayas of Northeast India” in: International Symposium on Quebec Centre For Biodiversity Science, 7-9 Dec 2011, organized by Biology Dept., McGill University, Qc, Canada. Pp. 73.

**Mary P.P.,**”Habitat characteristics of the critically endangered Pigmy Hog (*Porcula salvania*) of Manas National Park and Rajiv Gandhi Orange National Park in Assam state, North Eat India.”

Saikia M., **Shrivastava K., Singh S. S.,** (2011), “In-vitro induction of callus from leaf explants of agarwood (*Aquilaria malaccensis* Lam.)-a commercially important tree species” in: Proc. International Conference on New Horizons in Biotechnology, 21-24<sup>th</sup> Nov, 2011 (Held at RRL (CSIR), Trivandrum).

Saikia M., **K. Shrivastava & Singh S. S.,** (2011), “An efficient protocol for callus induction in *Aquilaria malaccensis* Lam. using leaf explants at varied concentration of su-

crose” in International Conference on Agricultural, Biosystems, Biotechnology and Biological Engineering, 25-26<sup>th</sup> Dec, 2011 (Held at Bangkok, Thailand).

Chongtham, R., Gurumayum, R., Khanikar, C., Hussain, S.T., Hussain, G., **Singh, S.S. and Shrivastava, K.**, (2011), “Antagonistic activities of *Trichoderma koningii* Oudem. and *Trichoderma viride* Perx. ex. Gray: Highly potential biocontrol agents against selected plant pathogenic fungi” in Proc. IPS-National Symposium on “Microorganisms and Plant Health”, Department of Botany, Gauhati University.

Bhuyan, S.I. and **Tripathi, O.P.**, (2011), “Soil fertility management in different agricultural systems of Arunachal Pradesh” Proceeding (online) of the 3<sup>rd</sup> National Conference on Young Ecologist Talk and Interact – 2011, 13-15<sup>th</sup> Dec, 2011. Indian Institute of Technology, Guwahati, Assam, India.

Bhuyan, S.I., Paul, A, Kikhi, S. and **Tripathi, O.P.**, (2011) “Land-use-land-cover dynamics and community characteristics of Sepahijala Wildlife Sanctuary, Tripura, India” in National Seminar on Climate change, development and social transition in north east: impact and issues. 10-12<sup>th</sup> Nov 2011, Rajiv Gandhi Arunachal Pradesh.

Yumnam, J.Y. and **Tripathi, O.P.**, (2011), “Semi-domesticated plants and wild leafy vegetables of East Siang – Arunachal Pradesh, Eastern Himalaya: A source of future food security” in: National Seminar on Climate change, development and social transition in north east: impact and issues. 10-12<sup>th</sup> Nov 2011, Rajiv Gandhi University, Arunachal Pradesh.

Sarma K., Krishna M. and **Kumar A.**, (2011), “Anthropogenic Impact Assessment on biodiversity in and around Mehao Wildlife Sanctuary: with special reference to conservation of Eastern Hoolock Gibbon (*Hoolock leuconedys*) in Arunachal Pradesh, Northeast India” Poster presented in “Student Conference on Conservation Science” held on 14<sup>th</sup> to 16<sup>th</sup> Sep, 2011 at Bangalore, India.

Sarma K., Krishna M. and **Kumar A.**, (2011), “Local hunting, habitat destruction and conservation of mammalian species: with special reference to eastern hoolock gibbon (*Hoolock leuconedys*) in lowland tropical forest in eastern Arunachal Pradesh, Northeast India” in the “International Seminar on Biodiversity & Human Sustenance” organized by Zoology department Cotton College & Zoological Society of Assam held on 19<sup>th</sup> to 21<sup>st</sup> Oct, 2011 at Cotton College, Guwahati, Assam.

**Kumar A.**, Krishna M. and Sarma K., (2011), “Impact of Logging and Fragmentation on Population Abundance of Wreathed Hornbill (*Aceros undulatus*) and Great Pied Hornbill (*Buceros bicornis*) and their Conservation in Lowland Tropical Forests of Eastern Arunachal Pradesh, Northeast India” in “International conference on Indian Ornithology” held from 19-23<sup>rd</sup> November 2011 at SACON, Coimbatore, Tamilnadu, India.

### (c) Paper published in Books/proceedings

Saikia P. and **Khan M.L.** 2012. Status, distribution and socio-cultural uses of some selected homegarden plants of upper Assam, Northeast India. In: Proceedings of 35<sup>th</sup>

Indian Social Science Congress organized by Indian Academy of Social Sciences in association with Mahatma Gandhi Antarrashtriya Hindi Vishwavidyalaya at Wardha, Maharashtra (in press).

Tripathi R. S., **Khan M. L.** and Yadav A. S. 2012. Biology of Mikania micrantha H.B.K. – a review. CAB International 2012. Invasive Alien Plants: An Ecological Appraisal for the Indian Subcontinent (eds. Bhatt et al.) (in press).

#### 4.1.9 Interaction of faculty/departments with outside agency

Faculty	Organization associated with
P.Rethy	Executive committee member of Pleione official journal of EHSST.
M. L. Khan	Member of the Research Advisory Group Meeting of Rain Forest Research Institute, ICFRE, Jorhat, Assam.
	Member of Multidisciplinary Committee for implementation of Environment safeguard measure, NEEPC, Arunachal Pradesh.
	Member of Advisory Management Committee of Regional Centre, National Afforestation and Eco-Development Board (MOEF), NEHU, Shillong.
	On the panel of experts of Inter-Academy Advisory Panel of INSPIRE Programme of DST, New Delhi.
	On the panel of experts of MOEF, Govt. of India to celebrate "International Year of Biodiversity."
	Member of the Committee for Biodiversity Strategy and Action Plan, State Pollution Control Board, Climate Change Action Plan and Medicinal Plant Board of Govt. of Arunachal Pradesh.
	Included in the Genome India International (GII) "Member-in-Spotlight" hosted at <a href="http://genome-india-intl.org/spotpage.htm">http://genome-india-intl.org/spotpage.htm</a>
O.P. Tripathi	Joint interaction is undergoing with the AP pollution control Board for evaluation of water quality of major river basins of the state in the form of project (proposal has been submitted to CPCB, New Delhi).
	Represented the Forest Department of Arunachal Pradesh in its FDA Decadal achievements meeting at Shillong organized by RC-NAEB, Shillong.
S. S. Singh	Member, National Steering cum Negotiation Committee of DBT-Electronic Library Consortium (DeLCON) under DBT, Govt. of India, New Delhi (2012).
A. Kumar	Member, in the Technical Committee of State level Vulture Conservation Action Plan.
P. R. Gajurel	Working as expert member of APSMPB, Govt of Arunachal Pradesh for GEF-UNDP, GOI

#### 4.1.10 Consultancy Project Undertaken

Sl. No.	Agency	Title of consultancy project	Total amount	Faculty associated
1.	Dept. of Forest & Wildlife, Govt. of Arunachal Pradesh	Monitoring the development activities of Wildlife Sanctuaries and National Parks of Arunachal Pradesh	Rs. 6.78 lakhs	M. L. Khan A. Kumar

## 4.2 DEPARTMENT OF AGRICULTURAL ENGINEERING

### 4.2.1 A Brief Profile of the Department

Agricultural Engineering is the application of engineering principles in agriculture. Agricultural Engineering deals with the use of engineering tools and practice to solve crop production, handling and processing problems for food and fiber along with the production to consumption chain. It includes the application of scientific knowledge in diverse and multidisciplinary activities for the overall development of the nation and farming community under protective environment.

The Agricultural Engineering Department started its B. Tech program in Agricultural Engineering in the year 1986. The department adopts modular pattern of education leading to the degree of B.Tech. in Agricultural Engineering, in three modules viz., base (in two separate trades of (i) Food Processing and (ii) Tractor Mechanic), diploma and degree. Each module provides terminality corresponding to an occupational level and at the same time provides entry to the next higher module finally leading to degree in Agricultural Engineering. After B.Tech they join postgraduate programmes and Ph.D. At present one student is registered in M. Tech.(Farm Machinery and Power),06 students in M. Tech. (Soil & Water Conservation Engineering)and 05 in Ph. D programme.

At present department has 13 faculty members. Besides MODROB projects, Department runs 04 sponsored research projects on emerging areas of Agricultural Engineering. Presently two All India Coordinated Research Projects viz; AICRP on Human Engineering and Safety in Agriculture, ICAR, New Delhi and NAIP, project on Livelihood Improvement and Empowerment of Rural Poor through Sustainable Farming Systems in North Eastern Region operated at Upper Subansiri District in Arunachal Pradesh, ICAR, New Delhi are operative under the Department.

### 4.2.2 Laboratories and Laboratory Development

Equipments purchased for laboratories were - Exhaust gas analyzer, Biomass gasifier, Saybolt viscometer , Solar lighting system, High vacuum pump, Bomb calorimeter, Arc welding machine, Digital water current meter, Digital soil moisture meter, Automatic siphon type of rain gauge, Rice sheller, Rice polisher (with timer), Lab. Aspirator, Rice sizing device, Universal moisture meter, Seed sieve shaker.

### 4.2.3 Project completed by the PG and UG students

#### (a) M. Tech. project

S.No	Title of the project	Name of the guide	Name of the student
1	Development of data base and mathematical models for engine performance parameters using bio-diesel	Dr. P. K. Pranav Mr. T.. Patel	Mr K. Padameshore Singh

#### (b) Degree projects

S.No	Title of the project	Name of the guide	Name of the student
1	Analysis of trends in temperature over Thar desert	Mr Deepak Jhajharia Dr. S. K. Shrivastava	Ms. J. Gosh Mr K. Dutta Mr. D. Nandi
2	Modelling of dehumidified air drying of some vegetables	Dr. B. Srivastava	Ms Teiheile Hegee Ms. Deepika Mandal
3	Study on mechanization, automation and energy conservation in tea industry	Prof. L. S. Yadav Mr. M. U. Singh	Mr Deep Jyoyti Dutta Mr Akash Mitra Mr Sumit Kr Deb
4	Variation in linkage geometry and performance parameters of 3-point hitch system of Indian tractors	Dr. Prasanna Kr. G.V.	Mr Pdamdhar Mili Mr Rajeev Ranjan Ms. Baishkhi
5.	Challenges faced by farmers in purchase, utilization and repair & maintenance of different makes and models of tractors	Prof. L. S. Yadav Mr. M. U. Singh	Mr Ritesh Ranjan Mr Debottom Chakraborty
6.	Development of Arc GIS tool bar for trend analysis of meteorological parameters in north east India	Dr.A. Bandyopadhyaya	Mr Anubhab Pal Mr Subajit Debnath
7.	Flood hazard mapping in Dikrong basin	Dr. Aditi Bhadra	Ms.Sutapa Choudhury Ms. Daita Kar
8.	Spatial temporal analysis of climatic variables of Purvanchal ( Foothills of Himalaya) and their teleconnection	Mr Deepak Jhajharia Dr. S. K. Shrivastava	Mr Nani Tade Mr. Ngahorza Chipang Mr Karipong Walling

#### (c) Diploma projects

S.No	Title of the project	Name of the guide	Name of the student
1	Study on energy conservation in tea industry	Prof. L. S. Yadav Mr. M. U. Singh	Mr K. S. Chamuah Mr. K. Purkayastha
2	Trends in solar radiation over Jodhpur Rajasthan	Mr Deepak Jhajharia Dr. S. K. Shrivastava	Ms H. Thomson Ms. Subu Monia

3	Development of dehumidified air dryer using rotor disc desiccant	Dr. B. Srivastava	Mr.Spondan Chelleng Mr Jayabrata Das
4	Estimation of evapotranspiration in different station of Arunachal Pradesh	Dr A. Bandyopadhyay Dr. A. Bhadra	Mr. Debyani Roy Ms.Grace Nengzouzam
5	Development of sticky belt test stand the measurement of precision of seed metering devices	Dr. Prasana Kumar G. V.	Mr.Takutoshi Jamim Mr Y. Phamnaiba
6	Installation of hydraulic dynamometer for PTO testing	Dr. P. K. Pranav	Mr A. B. Jamir Mr Lakhyajit Das
7	Performance evaluation of temperature based Penman-Monteith(TPM) model under the climatic condition of Umaiam ( Meghalya)	Mr. P. K. Pandey	Mr Mai Aram Mr. Lenon Tayeng
8.	Soil temperature variation and relationship with crop yield of Megalyaya	Mr. D. Jhajharia Dr. S. K. Shrivastava	Mr Hage Tapu Mr Sankar Bagnang

#### 4.2.4 Short-term courses/seminars/workshops/conferences attended by the faculty

Dr. L.S. Yadav had attended national seminar organized by Chaiduar College (Guwahati University) on 19-20 November, 2011 at Gohpur, Sonitpur (Assam).

Dr. P. P. Dabral, attended the workshop on “Management of Social Forestry for sustainable lively hood” sponsored by NIRD, Guwahati at NERIST from April 25-30, 2011.

Mr D. K. Syamal had attended the workshop on “Intellectual Property Rights” organized by MHRD IRP chair, Tezpur University in collaboration with Forestry Department NERIST, Nirjuli on 23-3-2012.

Mr D. Jhajharia had attended the International Conference “The ENSURE 2012 (Environmentally Sustainable Urban Ecosystems)” at IIT Guwahati, Guwahati, Assam, India from 24 and 26 February 2012.

Dr. P. K. Pranav attended International Congress on Renewable Energy, at Tezpur University, Tezpur from 2-4 November, 2011.

Mr P. K. Pandey had attended the STTP on “Teaching & Learning Methodology using SPSS” Oct, 31, 2011 – November, 4 2011.

Mr D. K. Syamal, Dr. P. Anand Kumar, Dr. P. K. Pranav and Ms. Aditi Bhadra attended the TEQIP sponsored FDP on “Computational and experimental aspects in thermal science” at ME department NERIST from 27-02-2012 to 2-3-2012.

Mr T. Patel had attended National conference on emerging trends and applications in computer science from 30-31 March, 2012 at Shillong.

Mr D. K. Syamal, Dr. P. K. Pranav, Dr. A. Bhadra, Dr. A. Banyopadhyay, Mr. T. Patel and Mr P. K. Pandey had attended the AICTE sponsored STTP On “Recent advances in mechanics and their application in nano engineering and technology”, from 01-12 August, 2011 organized by ME department, NERIST.

#### 4.2.5 New Degrees/Professional Memberships obtained by the faculty

Prof. L. S. Yadav had been elected fellow of Indian Academy of Social Sciences.

Dr. Salil Kumar Shrivastava obtained Ph. D. degree from Department of Hydrology, Indian Institute of Technology, Roorkee (Uttarakhand).

Mr D. Jhajharia obtained the membership of World Association of Soil and Water Conservation (WASWC Secretariat, Ministry of Water Resources, Jia 1, Fuxinglu, Beijing 100038, P. R. China).

#### 4.2.6 Achievements/awards/recognition earned by the faculty

Prof. P.P. Dabral acted as reviewer for the (i) Tropical Ecology and (ii) Journal of Indian Water Resources Society.

Mr. D. Jhajharia acted as reviewer of the (i) Journal of Hydrology (Elsevier) (ii) Agricultural and Forest Meteorology (Elsevier) (iii) Water Resources Research American Geophysical Union) (vi) International Journal of Climatology (Wiley Inter Science) (v) Indian Journal of Radio & Space Physics (vi) Agricultural Systems (Elsevier)

Ms. Aditi Bhadra has been awarded IDO-US Research Fellowship 2012.

#### 4.2.7 Projects sanctioned by outside agencies to the faculty of the department

P.I. A. Bandyopadhyay and co- P.I. Ms. Aditi Bhadra “ Vulnerability of north-east India to climate change for hydrological extremes of floods and droughts, INCOH-MoWR, 26 March 2012, Rs 30,71,880/-

#### 4.2.8 Publications:

##### (a) Referred Journal

**Yadav, L.S.** (2011). Energy requirement for tea production in north east India. International Journal Bioherald(1)2: 163-168.

**Yadav, L. S.**(2011). Need of optimum size tractors for replanting in tea gardens of north east India. International Journal of Crop Research, (42) 1 & 2&3 : 363-367.



**Yadav, L. S.**(2011). Beneficial aspects and mechanized replanting of tea in north east India. *International Journal Bioherald*(1)2: 153-155.

**Yadav, L. S.**(2011). Tractor hiring centre: a sustainable sector for entrepreneurship development in north east tea growing area, *International Journal New Agriculturist*, (22)2:203-206.

**Yadav, L. S.**(2011). Importance of geographical indication and traditional knowledge in tea production. *International Bioved* (22)2:251-254.

**Yadav, L. S.**(2011). Small tea farms need mechanization in north east India. *International Journal Bioherald*(1)1:65-66.

McVicar, T.R., Roderick, M.L., Donohue, R.J., Li, L.T., Van Niel, T.G., Thomas, A., Grieser, J., **Jhajharia, D.**, Himri, Y., Mahowald, N.M., Mescherskaya, A.V., Kruger, A.C., Rehman, S., Dinpashoh, Y., (2012). Global review and synthesis of trends in observed terrestrial near-surface wind speeds: Implications for evaporation. *Journal of Hydrology-Elsevier*, Vol. 416-417, 182-205. doi:10.1016/j.jhydrol.2011.10.024.

**Jhajharia D.**, Yadav, B.K., Maske, S., Chattopadhyay, S., Kar, A.K., (2012). Identification of trends in rainfall, rainy days and 24 hours maximum rainfall over sub-tropical Assam in northeast India. *Comptes Rendus Geoscience-Elsevier* (Impact Factor: 1.708), Vol.344, 1-13. doi:10.1016/j.crte.2011.11.002.

**Jhajharia D.**, Dinpashoh, Y., Kahya, E., Singh V.P., Fakheri-Fard, A., (2012). Trends in reference evapotranspiration in the humid region of northeast India. *Hydrological Processes-Wiley Inter Science* vol. 26 (3), 421-435. doi:10.1002/hyp.8140.

Chattopadhyay, S., **Jhajharia D.**, Chattopadhyay, G., (2011). Trend estimation and univariate forecast of the sunspot numbers: Development and Comparison of ARMA, ARIMA and Autoregressive Neural Network models. *Comptes Rendus Geoscience-Elsevier*, Vol. 343, 433-442, doi:10.1016/j.crte.2011.07.008.

**Jhajharia D.**, Singh V.P., 2011. Trends in temperature, diurnal temperature range and sunshine duration in northeast India. *International Journal of Climatology*, Vo. 31: 1353-1367. doi:10.1002/joc.2164.

**Pranav, P. K.**, Tewari, V. K., Pandey, K. P. and Jha, K. R.(2012). Automatic wheel slip control system in field operations for 2WD tractors. *Computers and Electronics in Agriculture*. Vol 84, pp1-6.

**Pankaj Kumar Pandey**, Vanita Pandey(2012). Lysimeter based crop coefficient for estimation of crop evapotranspiration of black gram in sub humid region. *International Journal of Agricultural and Biological Engineering* (DOI: 10.3965/j.issn.1934-6344.2011.04.050-058).

**Banyopadhyay, A.**, **Bhadra, A.**, Swarnkar, R. K. Raghuwanshi, N. S. Singh, R. (2012). Estimation of reference evapotranspiration using a user –friendly decision support

system : DSS\_ET. Elsevier Agricultural and Forest Metrology,154-155:19-29, ISSN:0168-1923, DOI:10.1006/j.agrformet.2011.10.013.

Gupta, S., **Bandyopadhyay, A.**, Kumar, M. Raguwanshi, N. S., Singh, R.(2011). Modelling of evapotranspiration using artificial neural networks, IAH Hydrology Journal, 34(1&2):22-32.

### (b) Conference papers

**Patel T., Pranav, P. K.** and Singh, P. K.(2011). Development of database for biodiesel in visual basic environment. International Congress on Renewable Energy,2-4 Nov,pp7-15.

**Patel, T.**, Karmakar, S. and Chakravorty, A.(2012). Software for performance prediction and matching of tractor-implement system. National conference on emerging trends and applications in computer science, 30-31 March, pp 262-269.

**Pranav, P. K., Patel, T.** and Singh, P. K.(2011). Development of mathematical models for predicting engine performance parameters using biodiesels. International Congress on Renewable Energy,2-4 Nov,pp55-62.

**Bandyopadhyay, A.**, Pal, A., Debnath, S.(2011). Development of ArcGIS Toolbar for trend analysis of climate data. Proc. Int. Conference on Agricultural Biotechnology, Biosystems & Biological Engineering(ABBBE), Phuket, Thailand, December21-23,2011,WASET,60:563-570.

**Bhadra, A.**, Choudhury, S., Kar, D.(2011).Flood hazard mapping in Dikrong basin of Arunachal Pradesh(India). Proc. Int. conference on Agricultural, Biotechnology, Biosystems & Biological Engineering(ABBBE), Phuket, Thailand, December21-23,2011,WASET,60:530-535.

### (c) Chapters in Books

**Bandyopadhyay, A., Bhadra, A.**( 2011). Development of an ANN Model for Runoff Prediction. Chapter 17. In: Flores, J.A. (Ed.). Focus on Artificial Neural Networks, Nova Science Publishers Inc., NY, USA. ISBN: 978-1-61324-285-8.

#### 4.2.9 Interaction of faculty/department with outside agencies

Dr. S. K. Shrivastava and Ms. Aditi Bhadra appointed as Nodal Officer of NERIST for National Water Mission(NWM), New Delhi on climate change impact studies on river basin( Brahmaputra and Barrack basins).

Dr. A. Bandyopadhyay acted as member of Governing Council, Meghalaya Water Resources Development Agency.

#### 4.2.10 Any other relevant information

Prof. P. P. Dabral acted as member of selection board of APSC, Arunachal Pradesh.

### 4.3 DEPARTMENT OF CIVIL ENGINEERING

#### 4.3.1 A Brief Profile of the Department

The Department of Civil Engineering came into existence as a part of the Institute since its inception in 1985. Over the years, the Department has developed and is recognized as one of the major engineering departments in the north-eastern region of the country. The main objectives of the Department are to develop high quality technical manpower at Certificate, Diploma and Degree levels and to cater to the needs of the North Eastern Region in particular, and the nation in general. It has started offering PG programmes and research activities leading to PhD, after the Institute attaining the Deemed-to-be University status.

The Department has capability of imparting quality education to the students through well-qualified faculty and staff. Presently, the Department has 17 well-qualified faculty members with specialization in different areas of Civil Engineering. Two faculty members, Sri S. K. Sahu and Ms. Y. B. Devi are on leave to IIT Delhi and IIT Guwahati respectively for PhD programme under QIP programme and one faculty member Mr. K. K. Singh is on leave for M. Tech Programme at IIT Guwahati, under QIP Programme.

The Department has two Senior Instructors GR II, three Laboratory Assistants, two Skilled Workers and five Laboratory Attendants. The staff members are well trained. Mr. P SivaKumar, Lab Assistant, after passing AMIE examinations, and M.Tech in Hydraulics and Water Resources Engineering from IT,BHU, Varanasi, is now pursuing Ph. D. from the department.

The laboratories of the department are well equipped to meet the requirements of undergraduate as well as postgraduate courses. The Department offers courses in Structural Engineering, Geotechnical Engineering, Structural Dynamics, Earthquake Engineering, Computational Methods in Civil Engineering, Advance Mechanics of Solids, Hydraulics and Water Resources Engineering, Fluid Mechanics, Environmental Engineering, Transportation Engineering, Geodetic Surveying, Engineering Graphics and Drafting, Building Science, Town Planning, Planning, Estimation and Valuation etc . Projects offered to the Diploma and Degree final year students keep in view the academic advances, requirements of the industry as well as the local needs. The Department has the competency of carrying out challenging consultancy works and sponsored research projects. The Department organizes workshops and short-term courses to disseminate the knowledge to the teaching community, Government officials particularly of Arunachal Pradesh, NGOs as well as village level community of the state.

#### **The Department at present has the following laboratories:**

1. Computer Lab
2. Drawing and Drafting Section, including CAD facilities
3. Engineering Geology Lab

4. Environmental Engineering Lab - I
5. Environmental Engineering Lab - II
6. Field Engineering Lab
7. Geotechnical Engineering Lab -I
8. Geotechnical Engineering Lab -II
9. Highway Engineering Lab
10. Material Testing Lab
11. Structures Lab
12. Surveying Lab
13. Water Resources Engineering Lab

In addition, it has a Seminar Hall equipped with audio visual teaching and presentation facilities. All the labs are equipped with modern equipments used for both teaching and research and rendering consultancy services.

#### 4.3.2 Academic Activities - Curricular Development:

##### (a) Introduction of new programmes

The Department is running the MTech programme in Environmental Science and Engineering. The MTech programme in Geotechnical Engineering was started in the academic session 2011-2012.

#### 4.3.3 Laboratory Development

##### (a) List of new equipments procured

Procurement of new equipments such as Universal Testing Machines, dedicated computers for newly created CAD of drafting section, softwares like Lingo 12 of Rs. 1.53 lakhs and Abacus of Rs. 7.64 lakhs have procured by the department during the year. Thus, lab equipment of approximately 22 lakhs has been purchased during the year. The following are the list of equipment procured during the year.

Sl. No.	Name of Labs	Name of equipment	Quantity	Make	Total Cost (Rs.)
1.	Geotechnical Lab	Pycno meter	06	AIMIL	2760.00
2.	Geotechnical Lab	Electronic Balance	01	Delmer	18000.00
3.	Computer Lab	Super Lingo 12.13	01 (4 users)	Software	153665.00
4.	Computer Lab	Abaqus Software	01	Software	765460.00
5.	Drafting Section	Workstation Z 400	01	HP	110930.00

6.	Drafting Section	Monitor (HPZR22W)	01	HP	21227.00
7.	Drafting Section	Computer with Monitor	06	HP	224994.00
8.	Drafting Section	Scanner (G2410)	01	HP	4199.00
9.	Drafting Section	Printer(Laserjet)	01	HP	7279.00
10.	Drafting Section	Drawing Table	20	-	56880.00
11.	Drafting Section	Wooden Stool	20	-	23300.00
12.	Highway Lab	Water Bath	01	AIMIL	10500.00
13.	Material Testing Lab	I.S. Sieves	17 Nos.	HICO	10030.00
14.	Material Testing Lab	UTM 400 kN	1 No.	AIMIL	665000
15.	Material Testing Lab	Electronic Balance	1 No.	AIMIL	25575
16.	Seminar Room	Lap Top	1 No.	Dell	35350

#### 4.3.4 Projects completed by the UG students

##### (a) B. Tech. Projects completed

Sl. No.	Title	Submitted in	Guide
1	Design, Implementation and Evaluation of a Domestic Slow Sand Filter	May 2011	Prof. S. K. Singh
2	Effect of Brick Infill Walls on Storey Softness or Storey Weakness in RCC Residential Buildings	May 2011	Dr. S. Baishya
3	Study of Strength Characteristics of Coir-Fiber Reinforced Soil	May 2011	Dr. H. P. Singh
4	Study of Losses in Piping System	May 2011	Dr. R. K. Prasad
5	Requirement of Cement in Concrete Under Different Degree of Quality Control	May 2011	Dr. S. Mishra
6	Comparative Study of Different Chemicals used as Coagulants in Water Treatment Plants	May 2011	Dr. Ajay Bharti
7	Geomorphologic Analysis of Barapani Watershed and Estimation of its Unit Hydrograph	May 2011	Mr.K.James Singh
8	A Study on Performance Improvement of Expansive Soil using Red Soil and Cement	May 2011	Dr.Monowar Hussain
9	Analysis of the Capacity of Hilly Roads Under Mixed Traffic Conditions	May 2011	Mr. Dibyendu Pal

##### (b) Diploma Projects completed

Sl.	Title	Submitted	Guide
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No1		in	
1	Traffic Accident analysis at Capital Complex Itanagar	May 2011	Ms. Y.Tamut
2	To study the strength and durability of normally compacted concrete with self compacted concrete having similar W/C ratio with the use of SIKAMENT-170 as super plasticizer	May 2011	Mr.K.K.Singh
3	Monitoring of water quality supply to NERIST campus	May 2011	Ms.Y.B. Devi
4	Hydrological parameter of River Ranganadi	May 2011	Ms. M. Puming
5	Determination of runoff coefficient for Barapani basin based on land cover	May 2011	Mr.K.J.Singh
6	Compaction and strength characteristics of red soil blended with fly ash and cement	May 2011	Ms. A. Kalita
7	Flexible Pavement distress in NH-52 A::A case study	May 2011	Mr. N. G. Sorum
8	A study on the relationship between density and occupancy	May 2011	Mr. D. Pal
9	Influence of cement on plastic behavior of soil	May 2011	Md. M. Hussain

### (c) M. Tech Projects Completed

Sl. No.	Name of Student	Year	Title of the Dissertation	Name of the Supervisor
1	Mr. Amit Kumar Dey	2009-11	Performance Evaluation for Laboratory Scale Anaerobic Composting of MSW	Dr. Ajay Bharti
2	Mr. Kenli Bagra	2009-11	Study of Quantity, Composition and Energy Associated with MSW Management in Papumpare District in Arunachal Pradesh	Dr. Ajay Bharti
3	Ms. Omem Paron	2009-11	A Study of Aluminium Toxicity in Water Treatment Plant Itanagar	Dr. Ajay Bharti
4	Ms. Yabom Kamsi	2011	Use of Fly ash Reinforced with geogrid Sheets as a Pavement Subgrade	Dr. H.P. Singh
5	Ms. Kenyum Paddu	2011	Strength Characteristics of Coir Fiber Reinforced Fly ash	Dr. H.P. Singh
6	Mr. Omo Yachang	2011	Improvement in CBR value of soil Reinforced with Jute geo-textile Sheet	Dr. H.P. Singh

#### 4.3.5 Short term courses/seminars/workshops attended by the faculty

Dr. H.P. Singh Participated and presented a paper in the International conference held at Hong Kong, China from 23-28 May, 2011.

Dr. Ajay Bharti attended AICTE sponsored Staff Development Programme on “Recent Advances in Mechanics and their Application in Nano Engineering and Technology” from 1<sup>st</sup> August to 12<sup>th</sup> August, 2011, organized by Department of Mechanical Engineering, NERIST, Nirjuli, Arunachal Pradesh.

Dr. Ajay Bharti, Mr. K. James Singh participated in the Faculty Development Programme on “Computational and Experimental aspects in Thermal Science” organized by Department of Mechanical Engineering, NERIST, Nirjuli, Arunachal Pradesh during February 27<sup>th</sup> to March 2<sup>nd</sup>, 2012.

Dr. S. Mishra, Mr. N. G Sorum attended 2nd National seminar on Renewable Energy Technology: Issues and Prospects (RETIP-2011) Organised by Mechanical Engineering Department, NERIST during September 2nd & 3rd, 2011.

Dr. R. K. Prasad, Mr. N. G Sorum attended AICTE sponsored staff development programme on Recent Advances in Mechanics and their application in Nano Engineering and Technology, NERIST, Aug1-Aug 12, 2011.

Ms Ajanta Kalita has attended International Conference on ENSURE 2012 held at IIT Guwahati from 24-26 February, 2012.

Mr. N. G Sorum attended 2nd one day INDEST User COvention, organised by NERIST on Sept. 10, 2011

#### 4.3.6 New Degrees/Professional Memberships obtained by the members of faculty

Mr. Dibyendu Pal obtained Membership of Indian Roads Congress (IRC), New Delhi.

Mr. Dibyendu Pal obtained Life Membership of Indian Society for Technical Education (ISTE), New Delhi.

Mr. N. G Sorum obtained Life Member of ISTE, and Life member of IRC

#### 4.3.7 Special achievements/awards/recognition earned by the members of faculty

Prof S K Singh is a member of the Advisory Committee of NERIST, which has been constituted as per rule 10 of MoA of NERIST. The Vice Chairman of UGC is the Chairman of this committee.

Prof S K Singh is a member State Level Committee (vide order of Directorate of Higher and Technical Education, Govt of Arunachal Pradesh) for processing all matters related to Diploma Education in the State of Arunachal Pradesh.

Dr. Ajay Bharti is a member in the Socio-Academic committee “Mahamana Malviya Foundation”, Varanasi, Uttar Pradesh.

Dr. Ajay Bharti is a member in the “State Level Action Plan Committee for Climate Change” for the working group Public Health Engineering & Water Supply Department, Arunachal Pradesh.

Dr. Ajay Bharti attended the State Level Scrutiny committee (SLSC) meeting as a member on 20<sup>th</sup> January 2012 for review of applications from Gram Panchayats of Arunachal Pradesh for Nirmal Gram Puraskar-2011.

#### 4.3.8 Publications

##### (a) Refereed Journals

**Singh, H.P.** (2011). “Strength Characteristics of Fly ash Reinforced with Geosynthetic Fiber” International Journal of Earth Sciences and Engineering 4(6),969-71.

**Bharti, A.** and Saha, B. (2011) “Carbon Credit from Composting of Municipal Solid Waste”, Int. J. Environmental Technology and Management, Vol. 14, Nos. 1/2/3/4, pp. 203–219.

**Mishra, S.** and Kumar, K (2011) “Energy requirement in buildings-issues and challenges” IJESR, Vol. 03, special issue 01: Feb. 2012 pp 566 to 570.

**Mishra, S.** Tripura, H. and Podder, M. (2011)“Requirement of cement for M20 and M25 grade concrete under different degree of quality control” InJoREST, special issue –II, October-2011, pp.07-13.

**Pal, D.** (2012), “Analysis of the Capacity of Hilly Roads Under Mixed Traffic Conditions-A Case Study” International Journal of Advances in Management, Technology & Engineering Sciences (IJAMTES), Vol. 1, Issue 6(1), March 2012, pp.11–15.

**Pal, D.** and Jha, S. K. (2012), ‘Study of Acceleration Noise Behavior in Indian Heterogeneous Traffic Streams’ International Journal of Engineering Sciences and Research (IJESR), Vol. 03, Special Issue 01, February 2012, pp.622–626.

Sujit Kumar Dash and **Monowar Hussain** “Lime Stabilization of soils-A Reappraisal” Journal of Materials in Civil Engg, ASCE (Accepted, Nov. 2011)

##### (b) Conference Papers



**Singh, H.P.**, Maheshwari, B.K., and Saran Swam (2011). “Liquefaction Studies on Medium Dense Reinforced Sand” 14thAsian Regional Conference on Soil Mechanics and Geotechnical Engineering” held at Hong Kong, China,May 23-27,,Paper Number 119.

**Singh, H.P.**, Maheshwari, B.K. and Saran Swami (2011). “Effects of Surcharge Loads on Liquefaction Parameters of Pond Ash”, International Conferences on Advances in Materials and Techniques for Infrastructure Development (AMTID),June 28-30, Paper Number G020.

**Singh, H.P.**, Sharma, A. and Chanda, N. (2011).” Strength Characteristics of Coir Fiber Reinforced Soil” , International Conferences on Advances in Materials and Techniques for Infrastructure Development (AMTID June 28-30, Paper Number G002.

**Singh, H.P.** (2011).” Strength Characteristics of Fly ash Reinforced with Jute Geotextile”, International Conference on Frontiers of Infrastructure Finance, December 28-30, held at IIT kharagpur, Paper No. 112.

SivaKumar, P and **Prasad, R. K.** (2012).“Analysis of water distribution Network Using EPANET and VERTEX Method” International Conference on Environmentally Sustainable Urban Ecosystems (ENSURE 2012) during Feb 24-26, 2012 at IIT Guwahati, paper No. 114.

SivaKumar, P and **Prasad, R. K.** (2012).“Optmal Reservoir Operation with Environmental Flows for Ranganadi Hydroelectric Project in Arunachal Pradesh”, International Conference on Environmentally Sustainable Urban Ecosystems (ENSURE 2012) during Feb 24-26, 2012 at IIT Guwahati, Paper No. 189

Nalo Takum, Nabam Rich and **Ajay Bharti** (2011). “Biomass: An Alternativ Source of Energy In India” in a MNRE and DST, Govt. of India, New Delhi sponsored National Seminar on “Renewable Energy Technology: Issue & Prospects”, September 2-3, 2011, organized by Dept. of Mechanical and Electrical Engineering, NERIST.

Nalo Takum, Nabam Rich and **Ajay Bharti** (2011). “Carbon Credit: A Solution To Green House Gas Mitigation And Climate Change” in a MNRE and DST, Govt. of India, New Delhi sponsored National Seminar on “Renewable Energy Technology: Issue & Prospects”, September 2-3, 2011, organized by Dept. of Mechanical and Electrical Engineering, NERIST.

Rich Nabam, Takum Nalo, Rita Tiwari and **Ajay Bharti** (2011). “Impact of Landfill Gas on Climate Change” in a MNRE and DST, Govt. of India, New Delhi sponsored National Seminar on “Renewable Energy Technology: Issue & Prospects”, September 2-3, 2011, organized by Dept. of Mechanical and Electrical Engineering, NERIST.

Tiwari Rita, Nabam Rich, Takum Nalo, and **Ajay Bharti** (2011). “Aerobi Composting of MSW: A Sustainable Way to Reduce Greenhouse Gas Emission” in a MNRE and DST, Govt. of India, New Delhi sponsored National Seminar on “Renewable Energy Technology: Issue & Prospects”, September 2-3, 2011, organized by Dept. of Mechanical and Electrical Engineering, NERIST.

**Bharti, Ajay**, Omem Paron and Kenli Bagra (2012). “Aluminium Toxicity in Water Treatment Plant: A Case Study of Itanagar” in a National Conference on “Challenges for Civil Engineering Due to Environmental Degradation”, 18-19 February, 2012, organized by Birbhum Institute of Engineering and Technology in technical association with Institute of Public Health Engineers India.

**Pal D.** (2012), “Analysis of the Capacity of Hilly Roads Under Mixed Traffic Conditions-A Case Study” at International Research Conference on Management, Engineering & Technology held on March 2-3, 2012 at Bangkok, Thailand.

**Pal D.** and Jha S.K. (2011), “Study of Acceleration Noise Behavior in Indian Heterogeneous Traffic Streams” at National Seminar on Renewable Energy Technology: Issues and Prospects held on September 2-3, 2011 at NERIST, Itanagar, India.

**Hussain, M.** and Dash, S.K.(2012) “Swell characteristics of soils.” Proceeding of International Conference on Civil Engineering, 29-31, Jan., Dubai, UAE. (Accepted)

**Hussain, M.** and Dash, S.K. (2012) “Compaction characteristic of lime treated soils.” Proceedings of International Conference on Ground Improvement and Ground Control, 30 Oct.-2 Nov. University of Wollongong, Australlia. (Accepted)

**Hussain, M.** and Dash, S.K.(2011) “Swell behavior of soils.” Proceeding of the Indian Geotechnical Conference, 15-17 Dec, kochi, kerala, India.

#### (c) Books:

**Dr. Ajay Bharti**, has co-edited a book titled “Management of Organic Waste” (ISBN 978-953-307-925-7) in February, 2012.

#### 4.3.9 Interaction of faculty/department with outside agencies

The Department has several interactions with state government/other agency officials like PWD, RWD, Water Resources Department, NEEPCO, NHPC etc. These interactions were mutually beneficial. Details are as follows:

Dr. Ajay Bharti evaluated a Ph. D. thesis entitled “Performance and Kinetic Studies for Anaerobic Digestion of Municipal Solid Waste” from Jadavpur University, Kolkata in January, 2012.

Dr. Ajay Bharti reviewed the manuscript entitled “Adsorptive Removal of Resorcinol from Aqueous Solution by Activated Charcoal, Rice Husk Ash, Bagasse Ash and Wood Charcoal”, Ecological Engineering, 2011.

#### 4.3.10 Consultancy Projects undertaken

The department has earned Rs.7,84,301.00 as consultancy fee during the year. The details are as follows

Sl. No	Name of consultancy Work/Agencies	Amount	Detail of work	Faculty & Technical Staff involved
1.	Pare Hydro. Project NEEPCO, Doimukh.	260,000 /-	Geotechnical Investigation, Bearing capacity of Soil	Dr. S. Baishya, Dr H.P.Singh R. Bora
2.	R.G.University, Doimukh	900/-	C.C cube testing	Mr. N. G. Sorum Mr. A.S.R.Prasad Mr. Nabum Hari
3.	R.G.University, Doimukh	900/-	C.C cube testing Date : 01.09.2011	Mr. N. G. Sorum Mr. A.S.R.Prasad Mr. Nabum Hari
4.	Manager(C), QC/A RHEO, NEEPCO, Doimukh	9652/-	Testing Tar Steel, 12mm, i) Bend Test, ii) tensile test	Mr. N. G. Sorum Mr. A.S.R.Prasad Mr. Nabum Hari
5.	P.N.Enterprize, Naharlagun,	42,466/-	Mixdesign M30, Mixdesign M25,	Dr. S. Mishra Mr. N. G. Sorum Mr. D. Pal Mr. P. Sivakumar M.C.Bora
6.	R.G.University, Doimukh	900/-	C.C cube testing	Mr. N. G. Sorum Mr. A.S.R.Prasad M.C. Bora
7.	R.G.University, Doimukh	900/-	C.C cube testing	Mr. N. G. Sorum Mr. A.S.R.Prasad M.C. Bora
8.	Project Manager BSUP, NPCC	29,370/-	Mix design	Dr. S. Mishra Mr. D. Pal Mr. A.S.R.Prasad M.C.Bora
9.	R.G.University, Doimukh	900/-	C.C cube testing	Mr. N. G. Sorum Mr. A.S.R.Prasad M.C. Bora
10	R.G.University, Doimukh	900/-	C.C cube	Mr. N. G. Sorum

			testing	Mr. A.S.R.Prasad M.C. Bora
11	BSUP, Nirjuli, NPCC Ltd.	10,000/-	Testing of physical & Chemical properties of water	Dr. Ajay Bharti
12	UD and Housing, Govt. of A. P.	19303/-	Concrete Mix Design M25	Dr. S. Mishra and Mr. D. Pal
13	1353 Garrison Engineer (GREF)	77,210/-	Checking of Design and Drawing of Gantry Girder	Prof. S.K Singh Mr. Dibyendu Pal
14	Jully Engineering, Naharlagun	3,30,900/-	Design of Civil Works of Pagu SHP	Mr. K. James Singh Dr. R. K. Prasad Mr. P. Sivakumar

#### 4.3.11 Achievement of student

##### Students qualified for GATE 2012

Sl.No.	Name	Roll No	Marks out of 100
1	MR. SAURABH	DE/10/CE/001	42.67
2	MR. PREMSONAM	DE/10/CE/003	26.33
3	MR.SANTANU PRASAD DAS	DE/10/CE/003	24.33
4	MR. AYARMA CHOURASIA	DE/10/CE/009	38.33
5	MR. GAURAV DHUNGEL	DE/10/CE/012	35.33
6	MR. BULLO RAMBO	DE/10/CE/019	35
7	Ms. TAYAYULLU	DE/09/CE/112	25

#### 4.4 DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

##### 4.4.1 A Brief Profile of the Department

The Computer Science and Engineering Department of NERIST came into existence right at the inception of the institute in 1986. It offers a unique combination of courses and projects that helps the students to cope with the recent advancements in the computer industry and information technology. The department gives diploma and degree

in computer science and engineering in modular pattern. M.Tech in Computer Science and Engineering started in 2008.

The department offers regular courses like Computer Organization, Application Software, Operating System, Discrete Mathematics, Digital Electronics, Microprocessors, Database Management Systems, Compiler Design, Data Communications, Computer Networks, Design and Analysis of Algorithm to name a few of them. Apart from the regular courses a few of the important courses offered are Artificial Intelligence, VLSI Design, Image Processing, Fault Tolerant Computing, Information Theory, etc.

The faculty members of the department are involved in various inter-disciplinary research projects funded by agencies like CSIR, MHRD, NEC, DoE etc. The department has well equipped LAN connected laboratories System Lab, PC Lab, Microprocessor Lab, Hardware Lab, Networking Lab and Embedded Systems Lab with state-of-the art machines.

The department has 2MBPS leased line internet connectivity

#### **4.4.2 Laboratories and Laboratory Development**

##### **PC Lab**

The practical classes of Diploma Module and Base Module are held in this laboratory. The students get exposure to various types of Application Software such as Visual Basic, Dbase, LOTUS, Visual C++, etc in this lab. Basic Computer training for the students of all the Departments of NERIST is also given here. It is well equipped with Pentium III PC's (866MHz, 64MB RAM, 20GB HDD, CD ROM drive), Celeron PCs (300 Mhz, 32 MB RAM, 4.1 GB HDD), AMD-6 PCs (32 MB RAM, 4.1 GB HDD), Digital Cameras, Laserjet printers, Deskjet printers, Dotmatrix Printers etc.

##### **System Lab I**

The Systems Laboratory - I is well equipped with servers and terminals basically for working in UNIX/LINUX and Windows environment as well. However Practical classes for Diploma and Degree students are held here. Hands on exposure to various programming Software such as C, C++, FORTRAN etc and RDBMS software like Oracle and SQL Server, Visual Studio.NET are available in this lab., several HCL Infinity Global Line Servers, HP Compaq PIV and Pentium III PC's, Laserjet printers, Deskjet 840 printer, Line matrix printer, Dotmatrix printers, AS/A4 Multipen Plotter 4100, Scanners etc. . All the machines are on the institute LAN and thus have Internet access. The students are encouraged to do network related projects in this lab.

##### **System Lab II**

The System laboratory II is well equipped with a HCL Infinity Global Line Server running on Red Hat Linux 4.0 Enterprise Edition, a SUN ULTRA SPARC 10S SERVER and several HP Thin clients for working purely in UNIX/LINUX environment. Practical classes for M.Tech and Degree students are held here.

## Microprocessor & Digital Lab

Training in various types of Microprocessors and Computer hardware is imparted in Microprocessor laboratory. This laboratory is complete with different types of Microprocessor and Micro-controller Kits and hardware related equipment. It also has the facility for training in Digital Electronics, which is the heart of every Computer. Practical classes for Diploma and Degree students are held here. The lab is well equipped with Frequency counters, Oscilloscopes, Analog Multi-meters, Power supplies, Digital IC trainers, Electronic Multi-meters, Functional Generators, Audio Generators, Pulse Generators, Microprocessor Trainer Kit IMPACT, Microprocessor Trainer Kit Star 85, Microprocessor Kit 68 K, Microprocessor Trainer Kit 6802, Microprocessor Trainer Kit DYNA86, Micro-controller Kit DYNA 51, STD Based Card for Computers, Servo Controlled Voltage Stabilizers, Isolation Transformer, Bread Boards, Bush Monitors for 85 kit, Colour TVs etc.

## Hardware Lab

The Hardware lab is set up in the Computer Science and Engineering Department for subjects like peripherals, assembling of computer, fault tolerance and different hardware related topics. To carry on these classes the lab is well equipped with Pentium PCs (100 Mhz, 16 MB RAM, 2.1 GB HDD), different 386 machines like a set of PC ORG SYSTEM XT, PC ORBIT XT, PCL PC AT 386, WIPRO GENIUS 386, ESPL SUPERCHIP XT, ESPL SUPERCHIP AT, PCL-HALLMARK-II and various types of monitor like GeBBS COLOUR MONITOR, DOSL/50 MONO MONITOR, HCL GR-86 VDU, WEBEL MONITOR, one color TV, TVSE, L&T and INKJET printers, 1KV UPS and Tool kits like ISA Post Card (Hardware Diagnostic Card), Advanced Hardware Debugger Card, PC Trainer Cum Demonstrators etc.

## R & D Cell

This Cell has been developed to carry out researches that are funded by external agencies, through student projects and for faculty research. Three projects, one in Thrust Area and two in R & D scheme are presently being carried out in this cell. The cell is equipped with a HP Proliant ML150 Server and a HP Laserjet 3015 multifunction device, Pentium IV PC (2.5 GHz, 256 DDDR SDRAM, 40 GB HDD, 17" Color monitor), a Pentium IV PC (1.5 GHz, 256 SD RAM, 20 GB HDD, 17" Color Monitor), a Pentium III PC (800Mhz, 20.4 Gb HDD, 256 SD RAM). It also has a HP – Color Laser jet (4550N Networking printer), Multipurpose Office Jet (G55, Scanner cum copier cum printer).

## Embedded Systems Lab

Embedded Systems laboratory was set up with equipment like Microcontroller student Learning Kit, Code Warrior Developer Studio HCO8 Acad. Edition, Code Warrior Developer Studio HCS12(X) Acad. Edition, 16 Bit HCS12 Student Learning Kit, 16 Bit HCS12C32 Student Learning Kit, Platform Creation suite for Linux Embedded, ARM processor based 1MXL ADS with LCD.

## Network Lab

The department has set up Networking Lab and it has equipment like LAN T consisting LANT – NIU, LANT Software, LAN-T PS. It also has ISECURIT - a network and data security training system and a few numbers of PCs.

### 4.4.3 Projects Completed by the UG/PG/Ph.D students

#### M.TECH

	Title of Project	Name of guide
1.	Stego-Security	T.Tuithung
2.	MANET for Rural Community	N. Marchang
3.	Speech Recognition	K.Legoh
4.	Secure Multimedia Streaming	M.Saikia

#### DEGREE

	Title of Project	Name of guide
1.	Study on image compression techniques	T.Tuithung
2.	Localization of Security in Sensor Networks	N. Marchang
3.	Optimization of Sensor Networks using Network Coding	S.J. Borah
4.	Study of Throughput in a Wireless Network with and without Network Coding	S.J. Borah
5.	Developing an Efficient and Acurate Biometric Security system	M. Kathing
6.	Application of DNA Computing in DES	M. Kathing
7.	Security of Sensor Networks	M. Marjit Singh
8.	Information Security using Cryptography	M. Saikia
9.	Fuzzy Logic in Structural Bioinformatics and Micro-Array Data Analysis	A.K.Patra
10.	Data Mining and Applications	A.K.Patra
11.	Location Assisted Routing (LAR) in VANETs	A. Taggu
12.	A Complete Intrusion Detection System for MANETs	A. Taggu

#### DIPLOMA

	Title of Project	Name of guide
1.	Wireless Sensor Networks	N.Marchang
2.	Design of Software Application Package using JAVA	M. Kathing
3.	Office Automation	K.Legoh
4.	Web Designing	M. Marjit Singh
5.	Design of Scientific Calculator	M. Marjit Singh

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#### 4.4.4 Short term course/Seminers/Workshops/Conferences organized

12th North East Workshop on "Computational Information Processing" from 22<sup>nd</sup> to 25<sup>th</sup> February, 2012, organized by Dept of CSE, NERIST & Electronics and Communication Sciences Unit of ISI, Kolkata.

Technical Education Quality Improvement Programme (TEQIP) Sponsored by MHRD-World Bank Project, Short Term Training Programme on "Application & Operation of Computers for Office Staff", from 15<sup>th</sup> to 20<sup>th</sup> March 2012, organized by Dept of CSE, NERIST.

#### 4.4.5 Short term course/Seminers/Workshops/Conferences attended by the faculty

Tuithung, N.Marchang, S.J.Borah, K.Legoh, M.Kathing, M.Marjit Singh, A.K.Patra, Amar Taggu and M. Saikia attended 12th North East Workshop on "Computational Information Processing" from 22<sup>nd</sup> to 25<sup>th</sup> February, 2012, organized by Dept of CSE, NERIST & Electronics and Communication Sciences Unit of ISI, Kolkata.

M. Saikia attended – (1) Faculty Development program on "Computational and Experimental Aspects of Thermal Science", 27<sup>th</sup> February to 2<sup>nd</sup> March, 2012 by the Dept of Mechanical Engg, NERIST; (2) SDP (Staff Development Program) on Recent Advances in Mechanics and their Applications in Nano Engineering and Technology, sponsored by AICTE, organized by Dept of Mechanical Engg, NERIST from 1<sup>st</sup> to 12<sup>th</sup> August 2011 at Nirjuli, Arunachal Pradesh; and (3) IEEE International Conference on Image Information Processing (ICIIP 2011) held at JUIT, Shimla, Himachal Pradesh from 3<sup>rd</sup> to 5<sup>th</sup> November 2011.

Amar Taggu attended Course on Practical Approach to Networking Organized by BSNL IITK Telecom Center of Excellence & Department of Electrical Engineering IIT Kanpur during 12<sup>th</sup> - 15<sup>th</sup> April, 2012

#### 4.4.6 New Degrees/Professional Memberships obtained by the Faculty

M. Kathing has been awarded M.Tech degree in January 2012

#### 4.4.7 Achievement/Awards/Recognition earned by the faculty

M. Marjit Singh has been awarded with "INDIRA GANDHI SHIROMANI AWARD & CERTIFICATE OF EXCELLENCE-2011" for Outstanding Individual Achievements & Distinguished Services to the Nation by India International Friendship Society, New Delhi.

M.Saikia has been awarded IEI Young Engineers Award 2011-12 in the Computer Engineering discipline.



#### 4.4.8 Projects sanctioned by outside agencies

Mobile Ad Hoc Network as a Rural Community Network Funded AICTE, Govt. of India, NewDelhi. Amount - Rs.10lakhs; P.I. N. Marchang

Modernization of Network Lab with State-of-the-art Machines and Software Funded AICTE, Govt. o f India, New Delhi. Amount - Rs. 15 lakhs; P.I. T. Tuithung

#### 4.4.9 Publications

##### a) Conference papers

P. K. Singh, **K.Legoh and T.Tuithung**, "Network Centric Approach using MOVE & Application Centric Approach using TraNs for Protocols and safety in VANET", International Journal of Research and Reviews in Computer Science (ISSN: 2079-2557) :: Vol. 2, No. 1, March 2011 pp 104-110

Rig Das, **T.Tuithung**, "A Novel Steganography Network for Image based on Huffman Encoding" published in 3<sup>rd</sup> National Conference on Emerging Trends and Applications in Computer Science (NCETACS 2012) at St.Anthony's College, Shillong during 30<sup>th</sup>-31<sup>st</sup> March 2012.

Rakesh Tripathi, **Ningrinla Marchang** and Shweta Sirothiya, "Convex Hull Based Localization Mechanism", In Proc. ICCCISE 2012: International Conference on Computer, Communication and Information Sciences, and Engineering, Zurich, Switzerland during January 15-17, 2012.

**Ningrinla Marchang** and Nibedita Shial, "Effect of topology on routing performance in partially mobile ad-hoc networks", In Proc. International Conference on Computer Applications (ICCA 2010), Pondicherry, 27-31 January 2012.

Vandana Thakur, **M.Saikia**, "Comprehensive Survey of Multimedia Encryption Techniques", published in 26<sup>th</sup> National Convention of Computer Engineers, IEI (India) held in Guwahati during 3<sup>rd</sup>-5<sup>th</sup> February 2012.

**M.Saikia**, Anwar Hussain, "Robust Watermarking using extended Anti-Collusion Codes" published in IEEE International Conference on Image Information Processing (ICIIP-2011) at JUIT Shimla, during 3<sup>rd</sup>-5<sup>th</sup> November 2011.

### 4.5 DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### 4.5.1 A Brief Profile of the Department

The Department of Electronics and Communication Engg runs courses for three modules, namely Base, Diploma and Degree, giving B.Tech degree to the students who pass out degree module successfully and M.Tech in Information Technology (IT). The courses are designed by taking into consideration of present trends in technology, basic knowledge to pursue technological steps in the fields of Electronics and Communication

Engg and Information Technology and to meet the demand of man power in the technology development and support to the country. From the next session the M. Tech IT would be handed over to the department of CSE of the institute, and the department will be starting two PG programmes. The two programmes are M.Tech in VLSI and M.Tech in Electronics and Communication Engg, both full time and part time. The department of Electronics and Communication Engg also runs PhD (part time and full time) in the fields of Electronics and Communication Engg, VLSI and Information Technology. There are 11 regular faculty members in the department of which one is on QIP leave to IIT Bombay pursuing Masters.

#### 4.5.2 Academic Activities

The department conducts academic activities based on the modular patter of NERIST- certificate in Maintainace Engineering, Diploma and degree in Electronics and Communication Engg. The department had restarted M.Tech (IT) from August 2006 along with M.Tech part time and PhD programs. The department is starting M. Tech Electronics and Communication Engg and M.Tech in VLSI from the coming sesion. The department has organized workshops, seminars with technical collaboration by the faculty members /experts of other universities.

#### 4.5.3 Laboratories and Laboratory development

The department has 13 numbers of laboratories to conduct practical classes for various courses. The department has modernized the DSP laboratory with funds from MHRD. The department is also further developing the existing VLSI and Computer Networking laboratories. For VLSI laboratory already the purchase order of CADENCE software have been given with state of the art computing facility. The department has taken up steps to develop labs, both for M.Tech (VLSI) and M.Tech (ECE) courses for which Xilinx ISE series along with VHDL based kits, TI 6713 series DSP kits, etc. have been procured along with ORCAD and Microwind Design Software.

#### 4.5.4 Projects completed by the UG/PG/PhD students

##### (a) Under-graduate (B.Tech) Projects

Transmission of Multimedia Data through different fading channels [Prof. Md. Anwar Hussain]

Automatic Detection of Diabetic Retinopathy [Mr. R.K. Mangang]

Implementation of Various Image quality Metrics [Mr. A. Dinamani Singh]

Microcontroller Based Pick and place Robot [Mr. P.K. Dutta]

Comparison and Analysis of a low Power 4-Bit full-Adder in 90 Nanometer Technology [Mr. Manish Kumar]

A comparative Analysis between SVD Based and NVF Based Wavelet Image Watermarking Techniques [Mr. Swanirbhar Majumder]

Solar T4acker using Microcontroller AT89C2051 [Mr. T. Sharan]

Microcontroller Based Automated Railway Crossing Controller [Mrs. Joyatri Bora]

Performance Evaluation of dual Correlated EGC diversity receiver in Nakagami-m fading Channels with Arbitrary and non-Identical fading Parameters. [Dr. Rupaban Subadar]

#### **(b) Post Graduate (M.Tech) Projects**

"Digital Image Watermarking using Fast Walsh Transform for Hardware Implementation" [Mr. P.K. Dutta & Mr. S. Majumder]

"Wavelet based Hybrid Image Compression using DCT, SVD and Global Thresholding based Huffman Coding" [Prof. Md. Anwar Hussain & Mr. S. Majumder]

#### **4.5.5 Courses/Seminars/Workshops/Conferences Organized at the department**

IEEE EDS Calcutta Chapter and Department of Electronics and Communication Engineering jointly organised a one day seminar on Nanoelectronics / VLSI on 9<sup>th</sup> April 2011. Prof. C.K. Sarkar from Jadavpur University and Prof. Hiroshi Iwai from Tokyo Institute of Technology was the expert for the said seminar. Around 50 participants participated in the seminar from various departments.

#### **4.5.6 Short term courses/Seminars/Workshops/Conferences attended by the faculty**

SDP (Staff Development Program) on Recent Advances in Mechanics and their Applications in Nano Engineering and Technology, sponsored by AICTE, organized by Dept of Mechanical Engg, NERIST from 1st to 12th August 2011 at Nirjuli, Arunachal Pradesh [S. Majumder, M. Mishra, M. Kumar]

12th North East Workshop on "Computational Information Processing" from 22nd to 25th February'2012, organized by Dept of CSE, NERIST & Electronics and Communication Sciences Unit of ISI, Kolkata. [P. K. Dutta, S. Majumder, A. D. Singh, R. K. Mangang, M. Kumar,]

Faculty Development program on "Computational and Experimental Aspects of Thermal Science", 27th February to 2nd March'2012 by the Dept of Mechanical Engg, NERIST [S. Majumder, R. K. Mangang, M. Kumar,]

IEEE International Conference on Recent Trends in Information Technology (ICRTIT 2011) held on 3rd to 5th June 2011, organized by Madras Institute of Technology, Anna University, Chromepet, Chennai. [ S. Majumder]

IEEE International Conference on Image Information Processing (ICIIP 2011) held at JUIT, Shimla, Himachal Pradesh from 3rd to 5th November 2011. [S. Majumder]

#### 4.5.7 New Degree/Professional membership obtained by the faculty

Mr. M. Kumar and Mr. M. Mishra Completed their M. Tech Degree.  
S. Majumder– Member IEEE.  
Mr. Rupaban Subadar Completed his Ph. D. from IIT Guwahati.

#### 4.5.8 Achievements/Awards/recognition by the faculty

Mr. M. Kumar received the young Scientist Award from IEI India

S. Majumder reviewer for International Journal of Computer Engineering Research (IJCER-11-021)

#### 4.5.9 Publications

##### (a) Journals

“Performance of L-MRC receiver over equally correlated eta-mu fading channels,” Accepted for publication in IEEE Tran. on Wire. Commun. Vol. 10, No. 5, May 2011, pp.1351-1355 (**R.Subadar**, P.R. Sahu)

“Performance of L-independent and dual correlated selection combiner in Hoyt fading channels,” Accepted for publication in IEEE Tran. on Commun. Vol. 59, NO. 4, Apr. 2011, pp. 923-929. (**R.Subadar**, P.R. Sahu)

“Performance of L-MRC receiver over equally correlated Hoyt fading channels,” Submitted to IETE Journal of Research. , Vol. 57, Issue 3, pp. 232-236, 2011 (**R.Subadar**, P.R. Sahu)

“Performance of Dual MRC Receiver for M-ary Modulations over Correlated Nakagami-m Fading Channels with Non-identical and Arbitrary Fading Parameter” Journal of World academy of science, Engineering and Technology, vol. 75, 2011 (**R.Subadar**)

“Performance Analysis of EGC Receiver over Dual Correlated Nakagami-m Fading Channels with Arbitrary and Non-identical Fading Parameter” Accepted for publication in Int. J. of Recent Trends in Engineering & Technology, (**R.Subadar**)

“Glaucoma detection from color fundus images” Int. J. of Information Technology and Computer science, vol.2, Issue 6, pp 7-10, 2011. (**Madhusudhan Mishra**, Malay Nath, and Samerendra Dandapat)

##### (b) Conferences

"Design of a Low Power high Speed ALU in 45nm Technology using GDI technique and its performance comparison" pg 458-463, proceedings of international conference on advances in communication, network and computing 2011 (**M. Kumar**, **Md. A. Hussain**, L.K. Singh)

“Channel Capacity of Adaptive Receivers with L-SC Systems in Hoyt (Nakagami-q) Fading Channels” Accepted for publication in IEEE INDICON 2011 Hyderabad. (**R.Subadar, A. D. Singh**)

“ABER of Dual Pre-detection EGC Receiver over Correlated Hoyt Fading Channels” Accepted for publication in IEEE TENCON 2011 Bali. (**R.Subadar, P.R. Sahu**)

“Image processing techniques for glaucoma detection” Int. Conf. on Advances in Computing and Communications (ACC), 2011. (**Madhusudhan Mishra, Malay Nath, Nirmala S.R and Samarendra Dandapat,**)

“PCA-LDA based method for Glucoma Detection using Color Fundus images”, National System Conference 2011. (Malaya Nath, **Madhusudhan Mishra** and Samarendra Dandapat)

"DWT and SVD based Image Watermarking Scheme using Noise Visibility and Contrast Sensitivity", pg 938-942 proceedings of IEEE International Conference on Recent Trends in Information Technology (ICRTIT 2011) ISBN-978-1-4577-0590-8/11 , held on 3rd to 5th June 2011, organized by Madras Institute of Technology, Anna University, Chromepet, Chennai. (**S. Majumder, T. S. Das, S. K. Sarkar**)

"Hybrid Image Watermarking Scheme using SVD and PDFB based Contourlet Transform", proceedings of IEEE 2nd International Conference on Computer and Communication Technology (ICCCT 2011) held at MN-NIT, Allahabad from 15th-17th September 2011. (**S. Majumder, M. Saikia, T. S. Das, S. K. Sarkar**)

"On the Implementation of a Information Hiding Design based on Saliency Map", proceedings of International Conference on Image Information Processing (ICIIP 2011) IEEE ISBN: 978-1-61284-859-4 (Print), ISBN: 978-1-61284-860-0 (CDR)held at JUIT, Shimla, Himachal Pradesh from 3rd to 5th November 2011. (A. Basu, **S. Majumder, T. S. Das, S. K. Sarkar**)

"Prediction of ECG features using Neural Network for Respiration, Plethysmograph and ABP Signal" in pg 83-88 of the proceedings of IEEE National Conference on Emerging Trends and Applications in Computer Science - 2012, (NCETACS - 2012), Dept of CS, St. Anthony's College, Shillong, Meghalaya, March, 2012 (Y. Shantikumar Singh and **S. Majumder**)

### (c) Books

“Time Plane, Feature Extraction of ECG wave and Abnormality Detection”, published by LAMBERT PUBLISHERS, Germany. ISBN-13: 978-3-8473-3977-9, ISBN-10: 384733977X, EAN: 9783847339779, January 2012. (**Swanirbhar Majumder, Dr. Saurabh Pal & Prof. Madhuchhand Mitra,**)

#### 4.5.10 Any other information

Mr. P. K. Dutta and Mr. T. Sharan of our Department have been selected by the AICTE QIP committee to undergo Ph.D. programmes in Jadavpur University and MNNIT Allahabad from July 2012 and they are currently undergoing their respective contact programmes with the respective institutions

## 4.6 DEPARTMENT OF ELECTRICAL ENGINEERING

### 4.6.1 A Brief Profile of the Department

The Department of Electrical Engineering came into existence as a part of the Institute since its inception in 1985. Over the years the Department has developed and is recognized as one of the major Engineering Department of the Institute. The main objectives of the Department are to develop high quality technical manpower at Certificate, Diploma, Degree, Post Graduate and Ph.D. levels and to cater the needs of North Eastern Region in particular and country in general. The Department has capability of imparting quality education to the students through well qualified faculty and staff. Presently, the Department has 13 well qualified faculty members with specialization in different areas of Electrical Engineering.

The staff members are well qualified and trained. The laboratories of the department are well equipped to meet the requirements of undergraduate and postgraduate courses. The department offers courses in Electromagnetic Fields, Advanced Electrical Machines, Electrical Machine Design, Network Analysis, Control Engineering, Process Control & Instrumentation, Power Electronics, Power Systems, High Voltage Engineering, Digital Electronics, Microprocessor and its Application, Computer Programming, Safety and Reliability Engineering, Regulation, Safety & Contracts etc. The department has competency of carrying out challenging consultancy works and sponsored research projects. The department organized several workshops and short term courses to disseminate the knowledge to the teaching community, Government officials particularly of Arunachal Pradesh, NGO's as well as village level community of the state. The department has developed Information Security Education and Awareness sponsored by Ministry of Communication and Information Technology, Government of India.

#### **The department has the following laboratories:**

- 1 Circuits and Measurement Lab.
- 2 Control and Instrumentation Lab.
- 3 Electrical Machine Lab.
- 4 Power System and Protection Lab.
- 5 Power Electronics Lab.
- 6 PC Lab.
- 7 Digital Electronics and Microprocessor Lab.
- 8 Project and Research Lab.
- 9 Electrical Maintenance
- 10 Electrical Workshop
- 11 Energy System Lab.
- 12 High Voltage Lab.

- 13 Information Security Education and Awareness (under Grant-in-Aid Scheme of Ministry of Communication and Information Technology)

#### 4.6.2 Academic Activities

##### (a) Modification of existing courses / Course Structure

The courses offered in Base, Diploma and Degree has been modified and their syllabus also revised, which was implemented from July 2009 after approval of the Academic Council. The book list of all the courses has been updated to include the latest editions of the existing titles, and new titles published recently.

##### (b) Introduction to new electives

1. Bio-medical Instrumentation
2. Optimization techniques and Engineering Applications
3. Electrical Machine design
4. Basics of Communication Engineering
5. Flexible AC Transmission System
6. Artificial Intelligence
7. Power System Reliability

##### (c) Laboratory / workshop designed

The department has designed and developed two labs named Energy System Lab. and High Voltage Lab. during this period. The department has developed a new “High Voltage Laboratory” and up gradation of PC and power system laboratories up to P.G. level under Project sanctioned by (FIST Scheme), Ministry of Science and Technology, Government of India. The department is also going to develop Bio-medical Instrumentation.

#### 4.6.3 Laboratories and Laboratory Development

##### (a) List of newly procured equipments

Additional equipments have been procured for Energy System Lab, High Voltage Lab, Circuits & Measurement Lab, Control & Instrumentation Lab, Electrical Machine Lab, Power System & Protection Lab, Power Electronics Lab, Electrical PC Lab, Digital Electronics & Microprocessor Lab, Project & Research Lab, Electrical Maintenance and Electrical Workshop.

##### (b) Laboratory manuals developed

Laboratory manuals have been prepared for High Voltage laboratory and Digital Electronics & Microprocessor laboratory. The laboratory manuals and laboratory experiment sheets of other laboratories have been augmented to carry out practical classes in the laboratories.

#### 4.6.4 Project Completed By UG/PG/PhD Students

##### (a) B.Tech. project

Sl. No.	Project Title	Student's Name	Guide
1	Programmable Logic Controller (PLC) Based DC Motor Control.	S.Y. Farouquee Tijo Sabu	Dr. O.P.Roy & Dr. S.K.Bhagat
2	Observer-Based Controller Design of Flexible Joints.	Hage Tara Is leishangthem	Dr. R.K.Mehta
3	Modeling and Control of Missile System in Pitch Plane.	J.Laldingliana Thanglalsam	Dr. R.K.Mehta
4	Direct Torque Control of Induction Motor.	Gyati Novin P.anandjit singh	Dr. Sarsing Gao
5	HVDC Modeling.	Sagarika Paul Sachine K. Singh	Dr S. Chatterjee
6	Impulse Testing of Transformer	AnwashaYadav Sarita Bansal	Dr S. Chatterjee
7	Performance Comparison of Conventional Motors and PM Induction Motor	Ch.G Zeliang Jonathan Khing Chinku Jacinta	Dr. A.K.Singh
8	Study of Vector Controlled I.M.	Brajgopal Das N.khongwir	Dr. A.K.Singh
9	Electrical Load Forecasting using Artificial Neural Network.	Prerna Tanika Sinha	Mr. A.K.Parida
10	Study & Performance Analysis of Stepper Motor	Binod Rai Chandan Saroj	Mr. M.D.Singh
11	DPR on Electrical Design, Estimating and Costing of Solar PV System in NERIST Campus.	Sudipta Reang Sweta Suman	Mr. A.K. Das
12	Augmentation of the capacity of NERIST Sub-station (11kV/440V)	H.Jatin.K.Singh Satish Saikhom	Mr. NL Meitei Mr R Blange
13	Fabrication of Automatic Switching Device (Street Lamp).	T.Pongener Kamsang Kamei	Ms.S Hashunao Mr R Blange
14	Estimation and Costing of Electrical Installations: A Case-Study	Minge Lego A.Jamir	Ms.S Hashunao

##### (b) M. Tech project

1	Assessment and analysis of Harmonics in Power Supply of NE Region Grid	Binita Sarma	Dr. O.P.Roy P.D.Kashyap
2	Performance Evaluation of Gas Based Power Plant With Combined Cycle Operation- A Case Study	Pabitra Gogoi	Dr. O.P.Roy



3	Impulse Fault Identification using Cascade Feed Forward Neural Network Based on Wavelet Transform Analysis	RS Khwairakpam	Dr. S Chaterjee
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#### 4.6.5 Short Term Courses Organized at NERIST

Mr. A. Das and Mr. A.K Parida, Asstt. Prof., co-ordinated a STTP on Solar Photo Voltaic in collaboration with IITB in the Dept. of EE. During 12-22, December, 2011.

#### 4.6.6 Short Term Courses/Seminars/workshops/conferences attended

Mr M.D.Singh participated in the One day Seminar on “Nanoelectronics / VLSI” jointly organized by IEEE EDS Calcutta Chapter and Department of Electronics & Communication Engineering, at NERIST on 9<sup>th</sup> April, 2011.

Mr M.D.Singh participated – (1) AICTE sponsored Staff Development Programme on “Recent Advances in Mechanics & their Application in Nano-Engineering & Technology” organized by the Department of Mechanical Engineering at NERIST during 1<sup>st</sup> August to 12 August, 2011; (2) “2<sup>nd</sup> One day INDEST User Convention (E-Journals, E-Resources Awareness Training” organized by the INDEST User Committee at NERIST on 10<sup>th</sup> September. 2011; (3) QIP- Short Term Course on “Digital Communication Techniques” organized by the Department of Electrical & Electronics Engineering, IIT Guwahati during 12<sup>th</sup> to 16<sup>th</sup> September, 2011; (4) Two weeks ISTE Workshop on “Solar Photovoltaics: Fundamentals, Technologies & Applications” conducted by IIT Bombay during 12<sup>th</sup> to 22<sup>nd</sup> December, 2011.

Dr. O. P. Roy, Dr. A. K. Singh. Dr. R. K. Mehta and Dr. S. K. Bhagat participated in Seminar on Nanoelectronics/VLSI organized by IEEE EDS Calcutta Chapter and Department of Electronics and Communication Engineering, NERIST, Arunachal Pradesh (India), on 09 April, 2011.

#### 4.6.7 New Degrees / Professional Memberships obtained by the faculty

Mr. M.D.Singh Life Member “Institution of Engineers (India)”, Membership No. M-14427-2 on 31<sup>st</sup> October, 2011.

Mr. M.D.Singh Life Member “Institution of Electronics & Telecommunication Engineers (IETE)”, Membership No. M- 227840 on 15<sup>th</sup> February, 2012.

Sarsing Gao, Associate Professor, awarded PhD by IIT Delhi, 26<sup>th</sup> March, 2012 and Membership, IEEE Society.

Dr. S.K.Bhagat acquired Life Membership IET, Membership No. 1100237859, 2012 and Membership IEEE Society No. 92212065;

#### 4.6.8 Publications

**Dr. Sarsing Gao**, “Estimation of Global Solar Radiation using Empirical Correlation”, International Journal of Engineering Science Research, vol. 3, Special Issue 01, Feb. 2012, pp. 571-574.

#### 4.6.9 Achievements of Students

Following students who had cleared GATE-2012

S.No.	Name of students	Percentile
1	Ms. Sudipta Reang	73.3
2	Ms. Jacinta	89.6
3	Mr. Jonathan Laldingliana	89.8
4	Mr. Hage Tara	79.77
5	Mr. Tenzuklong Pongener	88.6

## 4.7 DEPARTMENT OF MECHANICAL ENGINEERING

### 4.7.1 A Brief Profile of the Department

Department of Mechanical Engineering is run by a mix of experienced as well as young motivated well-qualified (M. Tech. and Ph. D. from reputed institutes in India and abroad like IITs, ISM, NITs, J.U., IT-BHU, BESU etc) faculty members and experienced supporting staffs to generate human resources to cater to the fast growing Industrial and academic need of the country at various levels for about 200 students (from 8 North Eastern states including Sikkim and all India). It offers courses to train the students in the art of servicing, maintenance and trouble shooting aspects in certificate Level, to impart supervisory skills to the diploma module students and to provide analytical skills in various subjects related to Mechanical Engineering and interdisciplinary areas to the degree module and PG students.

The department offers certificate course in three trades, namely, Refrigeration & Air Conditioning, Craftsmanship & Automobile servicing trades, Diploma in Mechanical engineering, B.Tech. in Mechanical engineering, M.Tech in Mechanical engineering with specialization in Computer Integrated Manufacturing & Automation (CIMA) and Thermo-Fluid Engineering (TFE) and Ph. D. in Mechanical Engineering. The course curriculum for the degree module is at par with the other premier institutions of the country. At present the department offers about 115 courses and 20 projects every year for all the modules combinedly. Elective courses from specialized, advanced and emerging fields are offered to both the UG & PG students depending on availability of faculty members.

Sixteen laboratories and six workshops in the department are equipped with advanced equipments and machines. A list along with the major equipments in respective laboratories is appended as Appendix–A. The department possesses its own computational facility with internet access and a fairly rich departmental library. Faculty-Student, Faculty-Staff & Staff-Student relationships are warm and friendly.

A series of quality U.G. Projects have been completed. Passed out students of the department are placed in reputed organizations in India and abroad. Albeit the worldwide economic recession, in the period under review the department achieved about 80% placements for the outgoing students. Some students have also qualified for higher studies in both India & abroad. During this period, the Department of Mechanical Engineering had an all-round achievement in terms of several academic as well as developmental criteria and would like to look forward for higher laurels within the scope.

#### 4.7.2 Academic Activities

The Department has started one PG programme in Computer Integrated Manufacturing and Automation (CIMA). M. Tech. with specialization in Thermo-Fluid Engineering will be started from the academic year 2012-2013 for which advertisement has been given. Besides conventional teaching methodology, the department provides facility of audiovisual sessions on select areas conducted in the departmental seminar hall through e-learning CDs.

Several proposals have been processed to streamline the course contents or credit distribution of a course. New and emerging elective courses are offered to the students. During the 2009-10 sessions, three new elective courses, namely Compressible flow, Non-conventional Energy resources and Industrial robotics, have been floated. Curriculum review process for all the modules have been completed and implemented in this period under review through Board of Studies of the department followed by deliberations at the centrally conducted workshop attended by the faculty members of the department and external expert team. The curriculum has been approved of Academic Council and the new curricula have been implemented from the 2010-2011 academic session.

Automobile servicing trade has been floated during the period under review for the first time. Vocational Training is included as a part of the curriculum for certificate and degree modules. Students of Certificate module are sent to the relevant reputed industries or repairing & maintenance shops, all over the India, for hands on training & experience on the principles they study. Job training is also a part of the curriculum for certificate module students where the repairing and maintenance of equipments are carried out by the students under the supervision of faculty members and technical staffs. Degree module students have undergone training in various reputed public sector and private organizations as a part of their curriculum requirement for the award of their degrees.

The department periodically organizes Industrial visits for the students of different modules as and when the course coordinators feel them necessary. During the period under review base and diploma module students were taken to nearby automobile repairing shops, Cold Storages and RAC plants and hydel plants for some hands on

practice. All India Industrial tour has also been organized for the degree module students during the period.

Mechanical Association of NERIST (MAN), jointly officiated by faculty, staff and students of the department, provides a platform to resolve academic issues solely related to the departments. MAN also organizes lecture series, mock interviews, technical competitions etc. for the students of NERIST in general and students of mechanical engineering department in particular. During the period under review the MAN has organized three lecture sessions.

#### 4.7.3 Workshops and Laboratory Development

Internal Combustion Engine being the important area for the Mechanical Engineering student, a separate IC Engine Laboratory has been established. New equipments has been procured and installed in the laboratory. A section in the lab is devoted to the development of bio-diesel laboratory under the supervision of Mr. P. Lingfa. Four Stroke Single Cylinder Diesel Engine, Flash and fire point apparatus. Bomb Calorimeter, Viscometer, Two Stroke Petrol Engine etc. have been installed, besides existing equipments in the Internal Combustion Engine Lab.

An Audio-Visual lab (seminar hall) is under development and the equipments were indented on priority basis during the year. Mr. Sunirmal Ray is the In-Charge for the Seminar Hall. Presently, this Audio visual lab is equipped with LCD projector, P-IV Computer, e-Learning CDs on various subject fields in mechanical engineering. It is proposed to equip the seminar hall with PA system and interactive board at the earliest.

Computational Fluid Dynamics lab is also under development under the supervision of Mr. Sunirmal Ray, since in engineering analysis of thermal fluid systems, CFD techniques plays an important and major role now-a-days. In future, the lab can be used as a Mr. Sunirmal Ray and others a lab with a view to linked with CFD

APPENDIX – A : LIST OF LABORATORIES AND MAJOR EQUIPMENTS

Sl. NO	Name of Laboratory	Major Equipments	Broad Field / Area
1.	Gas Dynamics	Wind Tunnel, Air Flow rig, Smoke tunnel, Nozzle testing apparatus, Compressor, Three component balance, Data Acquisition system	Fluid and Thermal engineering
2.	HMT & Thermal Engg.	Multipurpose air duct, Fluidized bed apparatus, Conductivity apparatus, Convection & radiation apparatus, Computer linked boiling apparatus	
3.	C.F.D.	PC & related software (Under development)	
4.	Fluid Power & Automation	Centrifugal & reciprocating pumps, Pelton wheel, Metacentric height apparatus, Hydraulic trainer, Simulators, Francis & Kaplan Turbines	
5.	IC Engine	2-stroke & 4-stroke Petrol & diesel engines	
6.	Bio-Diesel	Reactors	
7.	R&AC	Computer linked R & AC units, Vapour compression unit, Gas charger, Ice maker, Refrigerator	
8.	Dynamics & Kinematics	Universal Vibration testing apparatus, Cam analysis machine, Reciprocating & rotating mass balancing units, Gyroscope, Governor apparatus, Function generator, Digital Oscilloscope, Acoustic Insulation Test Apparatus with Amplifier	Applied Mechanics & Design
9.	Strength of Material	UTM, Torsion testing unit, Impact testing unit, Fatigue testing unit, Hardness tester, Lens Polariscope with analyzer, Polariscope and other accessories	
10.	Tribology	Hertzian Contact Apparatus, Air Bearing Apparatus, Multi Purpose Friction & Wear Tester	
11.	CADD	PC & related software	Industrial Engg. & CIM
12.	Industrial Engg.	Protek Digital Micrometer, Stop Watch, Anthropometer, Vibration Meter, DSP 80 Sound Level	
13.	CIM & Robotics (Tool Room)	Duet CNC-Cum Milling M/C , MaxTurn CNC Production CNC M/c with external turning carbide tool holder, MaxMill CNC Production Milling M/c with Tooling & Holder Adaptors	
14.	Computer Lab.	PC & related software	Others
15.	Metrology & Material Sc.	Measuring Instruments, Microscopes, Pit Furnace, Profile projector, Polishing Machine	
16.	Audio-Visual (Seminar hall)	LCD Projector, Digital Camera, e-Learning CDs on various subjects	
17.	Workshops	Different metal forming and metal removing machines & tools related to Carpentry & Pattern shop, Machine & maintenance shop, Fitting shop, Welding shop, Forging shop and Sheet Metal shop	Manufacturing & Production

Mr. Sunirmal Ray is the In-Charge for the Seminar Hall. Presently, this Audio visual lab is equipped with LCD projector, P-IV Computer, e-Learning CDs on various subject fields in mechanical engineering. It is proposed to equip the seminar hall with PA system and interactive board at the earliest.

System Lab. with Trainer, Reynolds al flow apparatus tment has been on unit and turret 1-IV, Peripherals, In-Charge. Other

#### 4.7.4 Projects completed by the UG Students

Roll Nos.	Project Title	Name(s) of Guide(s)
DE/09/ME/011 DE/09/ME/01 8 DE/09/ME/01 9	Computation & Experimental analysis of Wind rotor	Mr.B.Das & Mr. Sunirmal Ray
DE/09/ME/01 5 DE/09/ME/01 3 DE/09/ME/00 6	Water availability calculation for a hydropower site and selection of turbine	Dr. S.Sarkar
DE/09/ME/07 DE/08/ME/10 6 DE/08/ME/10 2	Hydraulic jacking and Lifting system	Mr. N.Teyi
DE/09/ME/01 6 DE/09/ME/00 2	Design of a fixture to conduct test of Galling resistance	Mr.S.Singh & Mr. S.Samanta
DE/09/ME/00 5 DE/08/ME/10 5	Study of mechanical properties of ultra fine grained and nano crystalline material	Dr. A. Mallick
DE/07/ME/01 4 DE/07/ME/01	Optimization of Multipass face milling process using Neural network	Mr. M. Chandrasekaran & Mr.A.Mandal

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DE/08/ME/10 4 DE/08/ME/10 3 DE/09/ME/01 7 DE/09/ME/02 1	Parametric study of wave bearing considering Micro-polar fluid	Dr. S. S. Gautam & Mr. N.K.Rana
DE/09/ME/01 2 DE/09/ME/00 4 DE/08/ME/10 8	Optimization of fermentation process depending on alcohol content in Bio-fuel	Mr. S.Singh & Mr.B.Das
DE/08/ME/05 1 DE/09/ME/00 8 DE/08/ME/05 2	Data exchange format for mechanical engineering applications for finite element meshing	Dr.M.P.Thaddues
DE/08/ME/10 7 DE/09/ME/00 9 DE/09/ME023	A study of entropy generation and heat transfer from a vertical shroud fins array	Dr.A.Giri
DE/09/ME/02 4 DE/09/ME/02 5 DE/09/ME/00 3	Hammering force for driving a nail through different types of wood	Mr. K.K.Mandal
DE/09/ME/02 2 DE/09/ME/02 0	Productivity analysis of automotive systems of a transport corporation by case study method	Dr.M.Muralidhar

#### 4.7.5 Short-term courses/ Seminars/ Workshops/ Conferences organized

National conference on RETIP-2011 was organized in the department during 2-3 September, 2011. The programme was sponsored by AICTE. Mr. Sunirmal Ray and Mr. Biplab Das were the organizing coordinators of the programme. Dr. Asis Giri was the organizing chairman.

Mr. Tapan Chakraborty and Mr. S. Kurian from Mechanical Department organized two weeks staff development programme on "Maintenance of Mechanical Workshop" from 6<sup>th</sup> to 17<sup>th</sup> Feb., 2012 under TEQIP. Dr. Asis Giri was the chairman of the staff development programme.

Dr. Asis Giri and Mr. Biplab Das organized five-day faculty development programme on Experimental and Computational aspects on thermal Sciences during 27<sup>th</sup> February, 2012 – 2<sup>nd</sup> March, 2012 under TEQIP.

Debabrata Maji of Mechanical Engineering Department has organized one-day Workshop on “Course Curricula Development for Capacity Building Programme’ as Workshop Coordinator held at Multi Disciplinary Training Centre [Certified by KVIC (Govt. of India)], Doimukh, Arunachal Pradesh on December 19, 2011.

Debabrata Maji and Biplab Das of Mechanical Engineering Department have organized five day Farmers’ Training Programme on ‘Bio-diesel and its Economic Benefits’ as Coordinators held at Mechanical Engineering Department, NERIST, Nirjuli, Arunachal Pradesh during January 20-24, 2012 sponsored by NABARD, Regional Office, Itanagar.

Debabrata Maji of Mechanical Engineering Department has Coordinated NERIST Exhibition Team in the State Level Exhibition held on the eve of Silver Jubilee Celebration of Statehood Day and Festival of Arunachal at Indira Gandhi Park, Itanagar during February 20-24, 2012. The theme of the NERIST Exhibition was ‘Technology for Tomorrow’s North Eastern States’ and it was inaugurated by the Chief Guest, Mr. A. K. Antony, Hon’ble Defence Minister of India.

#### 4.7.5 Short-term courses/seminars/Conferences attended by the faculty

National seminar on “Renewable energy technology issue and prospects” sponsored by AICTE, Government of India , New Delhi, organized by Dept. of Mechanical and Electrical Engineering during Sep 2-3, 2011 was attended by Mr. S. Ray, Mr. B. Das, Dr. A. Giri, Dr. M. Muralidhar, Mr. N. K. Rana, Mr. D. Maji, Dr. S. Samanta, Dr. S. S. Gautam

Debabrata Maji, attended and presented “Bio-diesel: An Historical Review” in a National Conference on ‘Water, Energy and Biodiversity with Special Reference to North East Region’, organised by The Institution of Engineers (India), Tripura State Centre, Agartala and National Institute of Hydrology, Roorkee, August 20-22, 2011.

#### 4.7.6 New Degrees / Professional Memberships obtained by the faculty

- Mr. N. K. Rana has become Life member of Arunachal Science Academy (ASA) No. SR/ITA/4698
- Mr. B. Das has become life member of ISHMT
- Dr. Asis Giri has becomes life member of ISHMT
- Dr. Sutanu Samanta achieved Ph.D. Degree in the year 2011

#### 4.7.7 Publications

##### (a) Journal

**S. Samanta** and D. Dutta, “Simulation of impact phenomena in Kevlar composite by FEM”, J. Manufacturing Technology Today, Sept., 2011, vol.10, issue:9, PP.22-27.

**S. Samanta** and D. Dutta, "Imaging of impacted Kevlar composite Armours using Data Clustering", J. of Non-destructive Testing & Evaluation, Vol-10, Issue 3, Dec., 2011, PP-44-48.

**M. Chandrasekaran**, M. Muralidhar, C. Murali Krishna, U.S. Dixit, "Online Machining Optimization with Continuous Learning "Book Chapter in Computational Methods for Optimizing Manufacturing Technology: Models and Techniques Editor: J. Paulo Davim, Portugal, ISBN 978-1-4666-0128-4

**M.Chandrasekaran**, M.Muralidhar, U.S.Dixit "An Interactive Online Finish End Milling Process Optimization", Int. J. Applied Engineering Research, Vol.6, No.5, 2011, pp. 949-959.

**M.Chandrasekaran**, S.Datta, P.P.Goswami, T.Saikia, C.M.Krishna, " A Heuristic Approach for Optimal Selection Sequence to Minimize Drill – Air Time for Increased Productivity", Int. J. Applied engineering Research, Vol.6, No.5, 2011, pp. 939-948.

**Muthumari Chandrasekaran**, Amit Kumar Singh, 'Determination of Optimal Cutting Condition for Desired Surface Finish in Face Milling Process Using Non-Conventional Computational Methods', Advances in Soft Computing Algorithms, Vol. 54, 2011, pp 185-197 (ISSN 1870: 4089).

Anjan Kumar Kakati, **M. Chandrasekaran**, Amitava Mandal, and Amit Kumar Singh, "Prediction of Optimum Cutting Parameters to obtain Desired Surface in Finish Pass End Milling of Aluminium Alloy with Carbide Tool Using Artificial Neural Network", World Academy of Science, Engineering and Technology, Vol. 81, 2011, pp 781-757.

#### (b) Conferences/Proceedings

Sumita Deb Barma, **Biplab Das and Asis Giri**, (2011). "Effect of Load Level on the Performance of a Biodiesel Run Dual Fuel CI Engine Using Second Law Analysis". Published in the proceeding of The International Conference & Utility Exhibition 2011 on Power and Energy Systems: Issues and Prospects (ICUE 2011) for Asia, 28-30 September 2011, Thailand.

D.Siddappa, **M.Chandrasekaran**, A.Mandal, "Artificial neural Network Modelling for Predicting Surface Roughness in End Milling of Al-SiCp Metal Matrix Composite and Its Evaluation", Presented and published in International Conf on Intelligent Manufacturing Systems (ICIMS 2012), Sastra University, Tanjavur, Tamilnadu, pp 119-125.

**Debabrata Maji**, "Strategic Planning of HRD" in 'Globalisation, Environment and Human Development', Markendy, S. ed., Rawat Publications, Jaipur, ISBN 81-316-0378-4, 2011, pp61-80.

**Debabrata Maji**, "Promoting Bio-fuel by Industries: A Review", in 'Energy Resources, Alternative Search and Sustainable Development', Singh, S. K., Kumar Raj, Mathur, H. P. et al. eds., Shree Publishers & Distributors, New Delhi, ISBN: 978-81-8329-395-2, 2011, pp262-280.



**Debabrata Maji**, “Detailed Project Report for Multi Disciplinary Training Centre under up-gradation of infrastructure as a part of KVIC-RID Scheme”, Doimukh, Arunachal Pradesh, December, 2011, pp1-190.

**Debabrata Maji**, “Course Curricula Development for Capacity Building Programme”, Multi Disciplinary Training Centre, Doimukh, Arunachal Pradesh, December 19, 2011, pp1-87.

**Debabrata Maji and Biplab Das** have been compiled and edited Training Manual on ‘BIO-DIESEL’ January, 2012, pp1-170.

#### 4.7.8 Interaction of faculty/department with outside agencies

Faculty of Mechanical Engineering Department participated in academia-Industry interface, organized by PetroFed India, Association with NABARD for rural development, Association with APPSC, NIT, Arunachal Pradesh for academic purposes, □ Developing Training modules for in-service professionals of NHPC jointly by Mechanical Engineering & Electrical Engineering departments. □ Faculty members are engaged in joint research with faculty members from Jadavpur University (Sunirmal Ray), IIT Guwahati (M. Chandrasekaran), Bengal Engineering and Science University (S. Samanta)

#### 4.7.9 Any other relevant information

The department has initiated the process of preparing strategic plan of the department (Departmental Vision Document) for long term development of the department through SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis.

□ MAN (Mechanical Association of NERIST) works with the broad objective of promoting technology through excellence. All the students, technical staff and faculty members of the department are members of the MAN.

Nationally coordinated project on “Establishment of Institute of Excellence through Advanced Studies, Research and Training in Mechanical Engineering” has been initiated. The principal investigator of the project is Dr. U. S. Dixit, Professor, ME Department, IIT, Guwahati with Mr. Sunirmal Ray as the investigator from NERIST to assist in the implementation of the project.

### 4.8 DEPARTMENT OF PHYSICS

#### 4.8.1 A Brief profile of the Department

The Department of Physics has Four Professors, Two Associate Professors, and Four Assistant Professors. In addition to teaching, the faculty members are actively involved in research activities and have been publishing research papers in both national and international journals. The field of specialization of physics faculty covers a wide spectrum of theoretical and experimental physics viz x-ray diffraction, polymer physics, plasma physics, experimental and theoretical nuclear physics, liquid crystals, solid state

ionics, mathematical physics, semiconductor physics, superconductivity and laser Raman spectroscopy. Also, some of the faculty members have acted as reviewers of DST and CSIR projects by other scientists for possible funding and Ph.D. thesis adjudicators.

Eleven sponsored research projects funded by DST, CSIR, MHRD and Third World Academy of science (TWAS), Italy have been completed in the field of liquid crystals and solid state ionics. One in-House mini Research project has been completed. Currently, four research projects funded by DST (2), CSIR (1) and IGNCA (1) are ongoing. One faculty member is associated with a project funded by Institute of Plasma research, Gandhinagar as external coordinator.

Two BOYSCAST fellowships of DST, New Delhi and three bilateral exchange fellowships of INSA, New Delhi-RSL & INSA-JSPS have been awarded to the faculty members of the department to pursue their collaborative research with scientists abroad.

Four Ph.D degrees (two in liquid crystals and one in solid state ionics) have been awarded to the research students worked in the projects mentioned above by NEHU, Shillong. Currently Twelve more students are working for their Ph.D. degrees in the department.

#### 4.8.2 Academic activities

The Department of Physics, fully aware of its role in training students according to their needs in physics education, offers eight core courses for the undergraduate students at different levels (Base, Diploma, and Degree modules) of Engineering and Applied Science Streams. Department also started offering M.Sc. (Physics) program from July' 2009.

#### 4.8.3 Laboratories & Laboratory Development:

**(a) Teaching Laboratories:** The department conducts practical classes of all the courses offered in three laboratories - Physics laboratory 1, 2 and 3. Two more new laboratories have been started to cater to the needs of M.Sc. Physics students. There is an Electronics laboratory and a Solid state Physics laboratory in the department as well.

**(b) Computer Facility:** The department of Physics has five computers coupled with printers (LASERJET and a dot matrix printer), one scanner and one CD writer. One PC is connected via LAN for the e-mail and internet browsing.

#### **(c) Research Laboratories:**

**(i) Liquid Crystal Research Laboratory:** Having sanctioned a first research project by D. S. T., New Delhi in 1993, Dr. P. R. Alapati had started a research laboratory for liquid crystals work in Jan. ' 1995 in an independent building provided by NERIST and over the years established the facilities for synthesis of liquid crystal materials, their characterization for liquid crystallinity and measurements of physical properties. The experimental facilities established include:

- Hot stage polarizing microscope
- Density measurement set up (bicapillary pycnometer technique --INDEGENEOUS )
- Ultrasonic velocity measurement set up
- Impedance analyzer (H-P 4192 A)
- Accessories (heating) for X-ray diffraction studies on liquid crystals using XRD facility available at Central Research facility of NERIST
- Facilities for synthesis of liquid crystal materials

**(ii) Solid State Ionics Research Laboratory:** A solid state ionics research laboratory for batteries sensors and supercapacitors has been established in 1995 by Dr. S. A. Hashmi in a building space provided by NERIST to carry out his research work on a project funded by Department of Science & Technology, New Delhi. Over the years, following facilities have been developed in the laboratory:

- Medium Frequency (40Hz-100Hz) LCR Hi Tester (HIOKI, Japan).
- Low frequency ( 1mHz-100 KHz) computer controlled impedance analyzer (HIOKI, Japan).
- Computer controlled Analytical Work Station for Cyclic voltammetry, etc. (Sycopel, UK).
- Indigenous techniques to prepare ion! electron conducting polymers and for their basic characterization.
- X- Y-t Recorder (Graphtec, Japan).

**(iii) Solid State Electronic Materials and Devices Laboratory:** Dr. H. M. Upadhyaya established a Research laboratory in the year 1999 to carry out his research on a project funded by the Department of Science and Technology, New Delhi. Some of the experimental fabrication/ measurement facilities created within the research laboratory are as follows:

- Vacuum Coating Unit (Hind Hi-Vac., Banglore, India -Model 12A 4D) with facility of IEEE 488 interface and software.
- Source - Measure Unit (Keithley Instruments, USA - Model 236) with facility of IEEE 488 INTERFACE and software.
- Chemical Bath Deposition / electrodeposition set up for the preparation of semiconducting thin films and conducting polymers.
- Solar Cell Performance measurement set up with the W-Halogen lamp with varying intensity.
- Suryamapi, a device to measure the intensity of the light.

**(iv) Material Science Laboratory:** This laboratory was set up by Dr. Arvind Pandey & Dr. Sanjay to carry out research on a project funded by MHRD. The major equipments which have been procured are:

- Keithley Electrometer
- Weighing Balance
- Hydraulic Press
- Rotary Vacuum pump
- Ball milling machine

- Microprocessor based furnace

**(v) High Temperature Furnace Facility:** Under the in-House mini Research Project Scheme and MHRD project Dr. Sanjay & Dr. Arvind Pandey have established a high temperature furnace room for preparation of ceramic/composite compounds. They have fabricated a furnace indigenously at NERIST which can operate upto 1200°C. One imported microprocessor based furnace which could be operated up to 1200°C is operational. One more furnace which can be operated upto 1000°C is also operational.

**(vi) LASER RAMAN spectroscopy laboratory** under Dr.Th G.Devi, is being set up.

#### 4.8.4 Short-term courses/seminars/workshops/conferences organized at NERIST

18<sup>th</sup> National Conference on Liquid Crystals , by Prof. P. R. Alapati during 15-17 November, 2011, 80 Numbers of participants (Under the auspices of the Indian Liquid Crystal Society).

#### 4.8.5 Short-term courses/seminars/workshops/conferences attended by the faculty

Dr. T. Karlo attended International Conference on Renewable Energy (ICORE 2011), 2-4 Nov, 2011, Tezpur University, Tezpur.

Dr. T. Karlo, Dr. A. Pandey, Dr. K. Saharia, Dr. T. Gomti Devi attended 18<sup>th</sup> National conference on liquid crystal, 15-17 November, 2011.

Dr. T. Gomti Devi attended – (1) Indian Science Congress held at KIIT University, Bhubaneshwar from 3-7 Jan, 2012, (2) “Recent advances in Mechanics and their application in Nano-Engineering & Technology” organized by Mechanical Deptt. NERIST from 01/08/2011-12/08/2011, (3) 2<sup>nd</sup> 1-day Indest user convention on 10/9/11 held at NERIST, (4) 10-day ISTE workshop on solar photovoltaic: Fundamentals, Technologies and Applications held at NERIST from 12/12/11-22/12/11, (5) Faculty development programme on “Computational and Experimental aspects in thermal Science “ organized by Mechanical Department, NERIST from 27/2/12-2/3/12, (6) Workshop on basic principles of Transmission Electron Microscopy and its applications in Material Sciences held at NEHU, Shillong from 13-15 March, 2012.

#### 4.8.6 New Degrees/Professional Memberships obtained by the faculty

Dr. M. Sengupta, Associate Professor has become Life member of Indian Association of Physics Teachers, Kanpur.

#### 4.8.7 Achievements/awards/recognition earned by the faculty

Dr. P.R. Alapati continued as Executive council member of PANE.  
Dr. Tado Karlo, Member, Asian Highway Committee, Government of India

#### 4.8.8 Publications

##### (a) Referred Journal

**Dr. Arvind Pandey – (1)** Effect of Ho substitution on the ionic conductivity of  $\text{La}_2\text{Mo}_{1.7}\text{W}_{0.3}\text{O}_9$  oxygen ion conductor, Lakhinath Borah, B. Paik, A. Pandey, *Solid State Sciences*, 14 (2012), 387-393; **(2)** Conductivity and electric modulus studies of  $\text{La}_{2-x}\text{Nd}_x\text{Mo}_{1.7}\text{W}_{0.3}\text{O}_{9.5}$  oxygen ion conductor, Lakhinath Borah, B. Paik, S.A. Hashmi, A. Pandey, *Ionics* (2012) DOI: 10.1007/S11581-012-0676-1.

**Dr.Th. Gomti Devi – (1)** Solvent dependent Raman bandshape analysis on C O containing molecules: Vibrational relaxation study, *Spectrochimica Acta Part A* 91 (2012) 106– 112; **(2)** Solvent dependent study of isotropic Raman band in C=O containing molecules: vibrational relaxation rates, *J. Laser & Optical Science*, 1, 28, 2011.

##### (b) Conference papers

Dye sensitized solar cells (DSSCs): A clean alternative to conventional solar cells, Lakshmi K. Singh, T. Karlo, A. Pandey, *Proceeding of International Conference on Renewable Energy (ICORE 2011)*, 2-4 Nov, 2011, Tezpur University, Tezpur.

Prospects of Liquid crystal applications in dye sensitized solar cells, L. K. Singh, R. Medak, T. Karlo, A. Pandey, *18<sup>th</sup> National Conference on Liquid Crystals*, 15-17 Nov., 2011.

Solvent dependence of the vibrational linewidth and shift in liquid binary mixtures, *Proceedings of the 99<sup>th</sup> session of Indian Science Congress*, p-71, 2012, T. Gomti Devi.

#### 4.8.9 Interaction of faculty/department with outside agencies

Dr. T Karlo, Associate. Professor has evaluated 35 International projects of International Fund for Agricultural Development (IFAD), a United Nations Agency. He Worked as Project Officer, National Technical Manpower Information System under Instt. of Applied Manpower Research, Govt. of India, New Delhi.

Dr. T. Karlo, Associate Professor worked with Tebtebba Foundation, Philippines on Climate Change Mitigation Research.

### 4.9 DEPARTMENT OF MATHEMATICS

#### 4.9.1 A Brief Profile of the Department

The Department of Mathematics has Four Professors, One Associate Professor and three Assistant Professors. The department offers 28 & 25 courses in 1<sup>st</sup> and IInd Semester at different level (Base, Diploma, Degree Modules and M.Sc. respectively). Most of these courses are multi-sectional. In addition to the above class load, a few of the regular courses are also offered during evening hours especially for the weaker students. One course of Mathematics is being offered for each of the five M.Tech. courses and one open elective for all Engineering Departments at the U. G level.

#### 4.9.2 Projects completed by the UG/PG/Ph.D. students

P.K. Das - (i) One M.Sc. Project on “Fuzzy Graphs”.

A.S. Rai - Two M.Sc. Projects (i) “On Curve fitting by least square method”.; (ii) “On solution of ordinary differential equations by Runge-Kulta method of order four”.

L.K.Arora - (i) One M.Sc. Project on “Basic Hypergeometric function”.

B.K. Singh - Two M.Sc.Projects (i) “Binomial distribution”; (ii) “Poisson distribution”.

M.M.Dixit - Two M.Sc. Projects on (i) “Numerical Solution of one dimensional heat equation problem by Bender Schmidt method”.; (ii) “The wavelets transform”.

J. Borah: One M.Sc. Project on Spectral theory of operator.

#### 4.9.3 Short-term courses/seminar/workshop/conferences attended by the faculty

L.K. Arora - (i) National Seminar on advances in complex Analysis and special functions March 12-13, 2011 Kishangarh (Rajasthan).

B.K. Singh - B.K. Singh and Sanjib Choudhury, 2012.” A Class of Product-Cum Dual to Ratio Estimator of Finite Population Mean in Simple Random Sampling”, Proceedings of the Annual International Conference on Computational Mathematics, Computational Geometry & Statistics (CMCGS-2012), pp.134-139. Singapore.

M.M. Dixit: Faculty development programme on Computational experimental aspects in thermal sciences 2012.

#### 4.9.4 New Degrees/Professional Memberships obtained by the faculty

P.K. Das - Life member of INDIAN Mathematical Society.

L.K. Arora - Life member of India Science Congress Associations.

J.Borah - Life member of INDIAN Mathematical Society.

#### 4.9.5 Publications

##### (a) Refereed journal

**P.K. Das** - (1) “Resultson on fuzzy soft topological Space” – Egyptian Mathematical Society ; (2) “On soft topological space via semiopen and semi closed soft sets” submitted to Kyungpook Jurnal of Mathematics.; (3) “An application of fuzzy soft sets in multicriteria decision making problem”- Intl. J. of computer Applications 38(12) (202),33-37; (4) “On Fuzzy s-closed sets”- Intl.J. of computer Applications 43(2),(2012), 17-21.

**L.K. Arora** - (1) B.K. Dutta, L.K. Arora and U.K. Saha, On generalized fractional integral operators and the Multivariable H-function, *Adv. Theor. Appl. Math* 6(4) 2011, 423-434.; (2) B.K. Dutta, L.K. Arora and J. Borah, On the solution of Fractional Kinetic Equation *Gen. Math. Notes*, 6(1),2011; (3) B.K. Dutta And L.K.Arora, Multiple Mellin and Laplace Transforms of Multiple Mellin and Laplace Transforms of I-functionsOf r variables, *J. Fract. Calc. Appl.*,1,2011, 1-8.

**B.K. Singh** - (1) B.K. Singh and Sanjib Choudhury, (2011). "An Improved Class of Ratio-Cum-Product Estimator of Finite Population Mean in Simple Random Sampling", *International Journal of Statistics and Analysis*, 1(4), pp.393-403; (2) R.V.K. Singh and B.K. Singh, (2011), "Study of Class of Product-Type Estimators Under Polynomial Regression Model", *Nigerian Journal of Basic and Applied Science*, 19(2), pp.202-207; (3) Sanjib Choudhury and B.K. Singh, (2012), "Study of a General Class of Estimators for Estimating Population Mean in Two-phase Sampling", *International Journal of Statistics and Analysis*, 2(1), pp.35-51; (4) B.K. Singh and Sanjib Choudhury, (2012). "Dual to Product Estimator for Estimating Population Mean in Double Sampling", *International Journal of Statistics and Systems*, 7(1),pp.31-39; (5)Sanjib Choudhury and B.K. Singh, "A Class of Chain Ratio-Product Estimator with Two Auxiliary Variables under Double Sampling Scheme", *Journal of the Korean Statistical Society*; (6) Sanjib Choudhury and B.K. Singh, "An Efficient Class of Dual to Product-Cum-Dual to Ratio Estimator of Finite Population Mean in Sample Surveys", *Global Journal of Science Frontier Research*, Volume 12 Issue2 Version 1.0 January 2012, pp.25-33. (7) B.K. Singh, V.K. Singh and R.V.K. Singh, (2011), Effect of Measurement Errors on a General Class of Product-Type Estimators", *Madhya Bharti*, 56(84), pp.84-97.

**M.M. Dixit:** Akhilesh Prasad, Ashutosh Mahato and M.M. Dixit, The Bessel Wavelet transform, *International Journal of Mathematical Anylysis*, 2011.

## 4.10 DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES

### 4.10.1 A Brief Profile of the Department

Engineering and technologies have become one of the predominant forces in shaping our vision of reality in the contemporary world. And the domain of humanistic learning enables a future technocrat to sustain the resilience of human spirit in all spheres of life. The department of Humanities and Social Sciences (HSS) of NERIST fulfills this vision of projecting a human content and consciousness required for the expansion of technological and scientific knowledge by synthesizing the sciences and technologies with social sciences and humanities. Coupled with Forestry, the Humanities and Social Sciences was initially tagged with the Applied Sciences group of NERIST. However, since 1993, it has been functioning as an independent department offering courses in English, Economics, Sociology, Psychology and Management. The department has earned a distinctive name for itself, primarily due to the wide-ranging experience of the members of its faculty and the application of innovative teaching methods, keeping in tune with the emerging developments in their respective fields of expertise. With the introduction of the Post Graduate Programme in the year 2006, leading to the degree of Ph. D., in various disciplines of Humanities and Social Sciences and Management, the department of HSS

has taken a giant leap in fulfilling the institutional vision of “*nurturing talent and giving wings to imagination.*” The prescribed courses apart, the department is well set to provide consultancy services to various small and medium scale industries of the North Eastern region. This is coupled with a successful hosting of various short-term and need-based programmes, seminars and special lecture series for executives, teachers and the students alike. Most of the faculty members of the department have the distinction of successfully completing research projects sponsored by such agencies as ICSSR, ICAR, McArthur Foundation, Ministry of Social Justice and Empowerment of the Government of India, Ministry of Human Resource Development, etc. Further, the faculty members are engaged in supervising research scholars on such subjects as Economics, Human Resource Management, Marketing Management, Financial Management, and Organizational Behavior, etc. leading to Ph. D. degrees. A developing technical mind must also acquire sensitivity to socio-cultural needs of human beings. With the experience of the old and the energy of the youth, the department of HSS strives to ensure that the budding technocrats and technopreneurs are armed with the quality of vision and personality which will enable them to use their skills in bridging the techno-social gap and establish a strong interface between science, technology and society.

#### **4.10.2 Laboratories and Laboratory Development**

##### **(a) Departmental Computer Laboratory**

Laboratory equipped in 05 Nos. Computers with Internet facility, Ink Jet Colour Printer, 02 Nos. LaserJet Printers, 01 No. HP Scanner use for Dept. Faculty Members.

##### **(b) Communication Skills Development Laboratory**

Department of HSS has developed Language and communication Skills Development Laboratory recently under MHRD MODROB Scheme under the leadership of Dr. B.D. Nayak (P.I.) and Shri Raju Barthakur, (Co-P.I.). This laboratory is equipped with modern and latest equipment and audio system LCD TV, LCD Projector and Computer facility. This laboratory has the capacity of accommodation for 56 students.

Department of HSS is also developing Language Laboratory under AICTE MODROB Scheme under the leadership of Dr. B.D. Nayak (P.I.) and Shri Raju Barthakur, (Co-P.I.). This laboratory is equipped with modern and latest equipment and audio system LCD TV, LCD Projector and Computer facility. This laboratory has the capacity of accommodation for 56 students.

#### **4.11 CENTRE FOR MANAGEMENT STUDIES**

##### **4.11.1 A Brief Profile of the Department**

Centre for Management Studies (CMS) came into existence on 4th November, 2009 as an independent center to offer Management Programmes. Soon after acquiring Deemed University status in the year 2005, one of the cherished dreams of starting MBA program came closer to reality. Finally, in the year July, 2006, NERIST earned the distinction of being the first institute in Arunachal Pradesh to start MBA program under the



department of Humanities and Social Sciences. The objective of the Centre for Management Studies is to impart management education to the future managers and policy makers of the region. CMS aims to pursue global vision without losing sight of local priorities and train future managers to develop a synergy between global and local value systems.

Centre for Management Studies became an independent centre to meet the growing aspirations of the region to develop quality managerial talents. Centre offers MBA program in various specialization areas i.e. Human Resource Management, Marketing Management, System Management, Finance and Entrepreneurship. Besides a full time MBA programme, other activities of the centre are as follows:

- Ph D program in Management
- Management Development Programs(MDPs) for Executives, government officers
- Personality Development Programs(PDPs) for different target groups
- Unit based Programs for industrial units at their locations
- Motivational workshops
- Consultancy in diverse areas of Management

To promote intellectual and professional activities in the Centre, The Management Forum of NERIST (MaFoN), a body comprising of students and teachers, has been organizing professional activities like conducting expert talks by eminent speakers, seminars, GDs and outdoor Management Development Activities.

Some of the eminent speakers who delivered lectures in the centre are: Prof. A.K. Dutta, Director, IIM, Shillong, Prof. S.C. Bagri, Director, Centre for Mountain Tourism & Hospitality Studies, HNB Garhwal University, Srinagar, Prof. S.S. Khanka, National Institute of Financial Management, Faridabad, Prof. K.C. Baliappa, VC, Rajiv Gandhi University, Arunachal Pradesh, Prof. C.K. Hazra, Vice Chancellor, Indira Gandhi Krishi Vishvidlaya, Chhatishgarh, Shri. D.N. Bez Baruah, Founder Editor of Sentinel. Besides the above academicians, a host of other prominent academicians, philanthropists and leaders delivered lectures in the centre. Dr. Bhaskar Choubey, a Rhodes Scholar and Dr. B.G. Mukhhopadhyaya, a Full Bright Scholar are regular visitors to the centre.

In order to provide exposure to the MBA students, "Meet the lumineries" series has been started and the first dignitary was the H.E. the Governor of Arunachal Pradesh, Gen(Retd) J.J.Singh, who invited MBA students along with CMS teachers to Raj Bhawan for a day long interaction on 20.04.2010.

The approach to develop managers with all round personality is paying the dividend and so far, two batches of students passed out from the centre have been well received by the industry.

#### 4.11.2 Academic activities

(a) Centre offers two year MBA Programme and also Ph.D.Programme in Management. Centre has already got approval to start self finance for three year part time programme.

(b) Ms. Jogita Sorokhaibam is the T&P Counsellor of CMS. Ms. B.L. Sharma, in-charge of Departmental Library.

#### 4.11.3 Labortary and Laboratory development

CMS has computer lab with 18 computers and other accessories. Mr.S.Choudhury is the Lab.Incharge of the laboratory.

#### 4.11.4 Projects completed by PG students

Sl. No.	Roll No.	Dissertation Title	Supervisor name
1	MBA/10/001	Inventory management, A study of retailers in Nirjuli, Market	Dr. R.M.Pant & Mr. T.Patel
4	MBA/10/004	An analysis of industrial Dispute and dispute resolving mechanisms in some selected organizations located in the capital complex, Arunachal Pradesh	Ms.J.Sorokhaibam
5	MBA/10/005	Kebang and its sustainability: Some HR dimensions	Dr.R.M.Pant
6	MBA/10/006	The traditional Bell and Brass metal industry of Assam: A case study on the Sarthebari town of Barpeta District	Mrs.B.L.Sharmah
8	MBA/10/008	An analysis of the manpower planning and Agricultural Strategies undertaken by the Agriculture department of the Govt of Arunachal Pradesh in Papumpare District	Ms.J.Sorokhaibam
9	MBA/10/009	Conflicting role of liquor industry towards the economic and social development of Arunachal Pradesh	Mr.S.Choudhury
10	MBA/10/010	Arunachal Pradesh on the Railway map of India-scope for HDI	Mr.S.Choudhury & Mr.N.G.Sorum
11	MBA/10/011	A comparative study of the best HR practices in selected hospitals in capital complex region	Ms.J.Sorokhaibam
12	MBA/10/012	Fund flow Analysis of HRHM, Arunachal Pradesh	Dr.R.M.Pant
14	MBA/10/014	A study of prospects & problems of Muga silk in Assam and Foster Mechanism to make it effective	Ms. J.Sorokhaibam
15	MBA/10/015	"Marketing of Traditional Local Jewellery of Arunachal Pradesh. A case study on capital complex, Itanagar"	Mrs.B.L.Sharmah
16	MBA/10/016	Organizational change strategy and its implementation for organization. A case study on pare Hydro electric project, Neepco.	Mrs.B.L.Sharmah
17	MBA/10/017	Socio-economic impact of NACO in Arunachal	Mr.S.Choudhury

		Pradesh	
18	MBA/10/018	Problem and Prospect of Agricultural Marketing in Assam- A case study on Narayanpur block of North Lakhimpur District of Assam	Mrs.B.L.Sharmah
19	MBA/10/019	Rainfall and potential for energy boost up in Arunachal Pradesh, problems and prospects	Mr.S.Choudhury & Mr.A.K.Parida
20	MBA/10/020	A study on financial performance analysis of oil India Ltd. Through ratio analysis	Dr.R.M.Pant
22	MBA/10/023	Financial performance of Arunachal Pradesh Rural Bank	Dr.R.M.Pant
23	MBA/10/024	Problems and prospects of Agricultural Marketing in papumpare district with special emphasis on Nirjuli and Naharlagun Market	Dr.R.M.Pant
24	MBA/10/025	A case study on impact of dairy farming on socio economic development at Narayanpur block, North Lakhimpur, Assam	Mrs.B.L.Sharmah
25	MBA/10/026	Managerial Intervention for agriculture mechanization in Lakhimpur district of Assam	Mr.S.Choudhury & Dr.P.K.Pranav
26	MBA/10/027	A study on online purchasing: An analysis and Evaluation of Emerging Trend in Arunachal Pradesh	Mr.S.Choudhury & Mr.A.K.Patra
27	MBA/10/028	Marketing of Bamboo products in Lohit district of Arunachal Pradesh	Dr.R.M.Pant
28	MBA/10/029	Comparative study of HR practices of selected banks in capital complex	Ms.J.Sorokhaibam
29	MBA/10/030	Analyzing the marketing penetrations and promotional strategy of ITC to launch Yippee noodles in the capital complex area of Arunachal Pradesh	Mrs.B.L.Sharmah
30	MBA/10/031	A comparative study of manpower planning Strategies of Higher Educational institutions: A case study of NEHU and RGU	Ms.J.Sorokhaibam
31	MBA/10/032	Traditional ornaments of Nyishi community: A study of Marketing and Sustainability in Papumpare District, Arunachal Pradesh	Dr.R.M.Pant
32	MBA/10/033	Role of self help groups in socio economic development of women	Mrs.B.L.Sharmah
33	MBA/10/034	"Analysis of deposits and advances: A study of Arunachal Pradesh Rural Bank	Dr.R.M.Pant
34	MBA/10/035	An Analysis of the IR scenario prevailing in Tea Estates in and around Tinsukia District, Assam	Ms.J.Sorokhaibam
35	MBA/10/036	" Fund management of Arunachal Pradesh Rural Bank"	Dr.R.M.Pant
36	MBA/10/037	A study of Marginalized Marketers of NTFPs in the capital complex of Arunachal Pradesh	Dr.R.M.Pant

#### 4.11.5 Short- term course/ seminars/workshop/conferences attended by the faculty

Mr.S.Choudhury

- TEQIP sponsored FDP on “Workshop on engineering optimisation” organised by Deptt. of Electrical engineering and Mechanical engineering, NERIST May 14-18, 2012.

Mrs.B.L.Sharmah

- “Case writing, Teaching and Research Workshop” organized by IIM, Calcutta during 14-15 June, 2012.

**4.11.6 (i) Published papers in Journals**

Dr.R.M.Pant

- Technology updation through Technology transfer: Panacea for Developing Economies’, Marketology, International Marketing Issue, Vol.6 No.1, Jan-March 2011.
- Value chain analysis: A case study on Arunachal Horticultural Processing Industrial Limited (AHPIL), Page no 46 Journal of Global Economy ISSN 0975-3931.

Mr.S.Choudhury

- Value chain analysis: A case study on Arunachal Horticultural Processing Industrial Limited (AHPIL), Page no 46 Journal of Global Economy ISSN 0975-3931.

Mrs.B.L.Sharmah

- A study on brand preference of selective cellular brands at Naharlagun Journal of Management and Science, Publisher Non-olympic Times, ISSNO.2249-1260.

**(ii) Full Papers in Conference Proceedings**

Dr.R.M.Pant

- Delivered invited lecture on ‘Social entrepreneurship for inclusive growth in Arunachal Pradesh’, In the 2<sup>nd</sup> International Conference on Sustainability, ‘SusCon 2011’, at IIM Shillong, (Sept 9-12, 2011). Paper published in the conference proceedings.

Mr.S.Choudhury

- “Accessibility and mobility as price determinant factors in vegetable market, a case study of Nirjuli Vegetable Market.” Page no-41 Full paper proceedings of XV annual international conference of Society of Operations Management (**SOM**) organized by Indian Institute of Management Calcutta (**IIM Calcutta**). Dated : December 16-18, **2011-**

**(iii) Papers presented in Conferences, Seminars, Workshops, Symposia****Dr.R.M.Pant**

- Delivered 'Key Note Address' on 'Inclusive growth and financial inclusion' at the National Conference on 'financial inclusion and Inclusive growth', organized by the Department of Commerce & Business Management, Vinoba Bhave University, Hazaribagh (March 22-23, 2012).

**Mr.S.Choudhury**

- "Futuristic IT approach towards regulatory framework of Inner Line Pass of Arunachal Pradesh"- National Conference 64<sup>th</sup> Indian Commerce Association Pondicherry University. Dated Dec 13- 15, 2011.
- "A study on Public Transportation System in Capital Complex, Arunachal Pradesh: With special reference of JnNURM" presented at International Conference on Frontiers of Infrastructure Finance organized by VGSOM and R CG School of Infrastructure Design and Management of IIT Kharagpur. Dated :December 29-30, 2011

**Mrs.B.L.Sharmah**

- "Forest resources and sustainable development: A study on the Tribal society of Arunachal Pradesh" International Seminar on Resources, Tribes and State held on 13<sup>th</sup> -15<sup>th</sup> February, 2012.
- "CPR Management for sustainable development: A study of Arunachal Pradesh" International Seminar on Resources, Tribes and State held on 13<sup>th</sup> -15<sup>th</sup> February,2012
- "A study on brand preference of selective cellular brands at Naharlagun in Arunachal Pradesh." International Conference Ever growing and never ending Managerial challenges held on October 28<sup>th</sup> -30<sup>th</sup>, 2011. Mahendra Engg. College, Namakkal, Tamilnadu.

## SECTION – 5

### CENTRAL FACILITIES, SERVICES AND ACTIVITIES

#### 5.1 CENTRAL LIBRARY

##### 5.1.1 Staff structures

a) Librarian	-	01
b) Asstt. Librarian	-	02
c) Sorter	-	01
d) Ministerial	-	02
e) Projector Operato	-	01
f) Xerox Operator	-	02
g) Helper	-	02
h) Peon	-	02

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**Total = 13**

##### 5.1.2 Books & Journals

a) Books as on 31.3.2012 =	=	57965
b) Journals as on 31.3.2012		
Indian	=	136
International	=	08

##### 5.1.3 E-Resources/Journals

Being a core member of INDEST consortium, the faculty members & students of the Institute are entitled to receive the following E-resources:

1. ACM Digital Library,
2. ASCE Journals online,
3. ASME Journals online
4. IEL Online,
5. Nature,
6. Pro Quest Science,
7. Springer Verlag's Link
8. Science Direct

NERIST library has subscribed E- resources, JSTOR website through NFLIBNET, EBSCO, ACM digital library and 10 International online journals.

**5.1.4 Book Bank:** In addition to above a Book Bank has been established in central library. It was funded by NEC initially. Later NERIST has provided the required funds for upgrading the collection with new editions and as per new syllabus. The students will get a set of text books.

No. of Text books available module- wise, are as under.

1. Base Module	:	10457 vols.
2. Diploma Module	:	11769 vols.
3. Degree Module	:	11399 vols.
4. Degree Forestry	:	2001 vols.
<b>Total</b>	<b>=</b>	<b>35626 vols.</b>

**5.1.5 Departmental Library:** Departmental library has been set up for all 11 Departments. Books have been procured by the library for the departments. No. of books purchased department wise are as under:

(a) Physics	=	29
(b) Chemistry	=	86
(c) Mathematics	=	433
(d) Humanities	=	252
(e) Agri. Engg.	=	275
(f) Civil	=	111
(g) Electrical	=	118
(h) Electronics	=	434
(i) Comp.Sci	=	234
(j) Mechanical	=	190
(k) Forestry	=	71

**5.1.6 Library Automation:** MHRD approved scheme “Modernization and removal of Obsolescence” is under progress and likely to be completed soon. It is partially Operational (OPAC).

**5.1.7 A-V Materials:** 139 nos. DVD “Video Training Programme” has been purchased for different departments.

**5.1.8 Book exhibition:** Book exhibition is being organised by the Central library NERIST very year. Reputed publisher/Suppliers from different parts of India displayed their books in the exhibition.

## 5.2 TRAINING & PLACEMENT CELL

### 5.2.1 A Brief Profile of the Section

Since its inception in 1991, T & P Cell is instrumental in counselling the final year students in securing jobs in consonance with their knowledge and skills by organizing campus interviews, while simultaneously exploring various avenues for their placement. The workshops are also organized by the Cell for the pre final and final year students providing them with the substantial exposure in the areas pertaining to their recruitment and selection and facilitate their entry into leading and highly professional organizations.

### 5.2.2 Status report regarding activities

#### (a) Training

This Cell organized Industrial Training for a period of 30 days to the B.Tech. pre-final year students of AE,CS, EE,ECE,ME & B.Sc. (Forestry) and 45 days for Civil Engineering & MBA students during 1st June to 30th June,2011 & 1<sup>st</sup> June to 15<sup>th</sup> July'11 respectively, which is a compulsory requirement in partial fulfillment of the requirements of their curriculum. Some of the organizations where NERIST students have gone for their training during summer 2011 are: IOC, OIL, ONGC, Gammon India Ltd., HCL, BSNL.

TATA TELE-SERVICE, Mother Diary, ITC, DRDO, IIT (GHY.), NESAC, NHPC, SAIL, Stock Holding Corporation of India Ltd., NRFMT & TI (Hissar), ICAR (Shillong), CIAE (Bhopal), Power Grid Corporation of India td., WWF India, Institute of Wood Sc. & Technology(Bangalore), NEIST, Ashok Leyland, CPWD, NBCC, etc.

### **(b) Placement**

This Cell also arranged in- campus and off- campus (Pool Campus) Interviews for the final year B.Sc. / M.Sc. (Forestry), B. Tech./M.Tech. and MBA students. All facilities were provided to officials of companies to conduct campus interview at NERIST. Arrangements were also made for conducting Pool campus interview at AEC, Guwahati & JEC, Jorhat also. Some of the prominent organizations that conducted campus/pool campus interviews and selected our students during the period are: Indian Army, WIPRO, Syntel, Jindal Steel & Power, Huawei Technologies, AGC Networks Ltd., etc.

### **5.3 Highlights**

This Cell organized a 02 days Workshop on “How to prepare for interviews” during the month of October, 2011, for NERIST students. Under this workshop the students were guided on aspects of communication skills, dealing with the executives from the Companies by organizing Mock Interviews, how to face Group Discussion, Viva-voce etc.. Around 81 students participated and got benefited from the workshop. This Cell also organized On-line Tests by Syntel & NASSCOM, for our final year students during the month of November & December’11 respectively. A total of 46 and 65 students appeared the test by Syntel & NASSCOM respectively. This Cell also arranged Talk by the Executives from Dell India, Hyderabad, on “Cloud Computing” and “Java on the Cloud”, on 2<sup>nd</sup> February, 2012, with financial support from TEQIP (NERIST). Their other topics were centered on ‘Career’. Final and pre-final year students and faculty from CS, ECE & EE attended the talk.

### **5.4 SPONSORED RESEARCH AND INDUSTRIAL CONSULTANCY (SRIC)**

In pursuance of approval accorded by the Board of Management in its 51<sup>st</sup> meeting held on 28.08.2001, Sponsored Research and Industrial Consultancy (SRIC) Cell was created to look after the smooth running of various sponsored research projects in the Institute. Presently the Cell is headed by an Associate Professor as Coordinator and some other supporting staff. About 58 Nos. projects are going on. Moreover, 18 Nos consultancy works were done by the Civil Engineering Department during this financial year.

### **5.5 CONTINUATION EDUCATION PROGRAMME CELL (CEP)**

#### **5.5.1 A Brief Profile of the Cell**

The objectives of the Continuing Education Programme (CEP) cell are:

1. To provide information to the bright meritorious students about Early Faculty Induction Programme (EEIP) sponsored by AICTE and other agencies



2. To provide information to faculty members regarding financial assistance from Government/Sponsoring agencies so that faculty members can get grant from these agencies for book writing/material preparation etc.
3. To provide timely information and proforma to faculty members for applying AICTE or other sponsored Short Term Training Programme etc.
4. To encourage and coordinate faculty members/departments for specially formulated self financing/sponsored short term courses for Industry, R&D personal.

### **5.5.2 Status report regarding activities**

About 74 Nos. of faculty members have attended Seminar/Workshop/Short Term courses/Conference during the period including organization of short term programme in NERIST during this period by various departments of the Institute.

## **5.6 KENDRIYA VIDYALAYA, NERIST**

The Kendriya Vidyalaya, NERIST was established in the Campus in the year 1995 and started functioning with 250 students (From Class-I to Class-V) under project mode primarily to cater the needs of the children of NERIST Employees. Subsequently the Vidyalaya was upgraded to Class-XII (Science). Since the Vidyalaya was under project mode, entire expenses of the vidyalaya are borne by the Institute as per terms and conditions with Kendriya Vidyalaya Sangathan.

## **5.7 NERIST K.G. SCHOOL**

NERIST K.G. School was established in the year 1992 with the aim of providing pre-school education and promotes healthy peer-group activities among the children of the Institute as well as nearby areas. Basic infrastructures like building, furniture etc. are being provided by the Institute.

The Management Committee is responsible for running the school. The Committee is headed by a Chairman/Chairperson nominated by the Director, NERIST. The school is self financing for its recurring expenditure and running on no-profit no-loss basis. The source of income is collection from the students by way of admission/monthly tuition fee etc.

## **5.8 CENTRAL AUTOMOBILE WORKSHOP**

### **5.8.1 A Brief Profile of the Section**

The Central Automobiles Workshop was initially developed and it was kept under the control of Mechanical Engineering and Electrical Engineering Department. The shop was developed as a part of curricula requirement. However, this workshop has been transferred to and functioning under the control to Mechanical Engineering at present. As the Institute requirements for vehicle servicing and maintenance started growing, the

transport section provides better service round the clock for institute as well as for student, staff and other official works of the Institute.

### 5.8.2 Status report regarding activities

The Transport Section is one of the most important support departments of the Institute, which runs fleet of vehicles for official purposes. The various services offered by transport section at present are as follows:

- a) Providing vehicles for in and off campus official duty;
- b) Providing School Bus service to the wards of NERIST employees;
- c) Providing vehicle to the employees and students under staff welfare and Student's welfare Scheme for religious and social functions on payment basis;
- d) Providing vehicles for campus interview, seminars, conferences, Short term course, short term training programmers, Study tours and workshops organized by faculty of various departments;
- e) Providing vehicle to various departments for conducting of Practical Training to different module students including field visits, industrial visits in and off campus for student's development;
- f) Providing vehicles to NCC cadet/NSS for attending camps and awareness camping etc.;
- g) Providing ambulance service for students and employees for emergency medical treatment; and
- h) Providing vehicles to security patrolling duty for maintaining the safe environment in the campus particularly during night time.

### 5.9 NERIST HEALTH UNIT

1. The Hospital is running with the strength of
 

(a)	Medical Officer	-	2 Nos.
(b)	Staff Nurse	-	1 No.
(c)	Pharmacist	-	1 No.
(d)	Helpers	-	4 Nos.
(e)	Lab Technician	-	1 No.
(f)	Peon	-	1 No.
(g)	Dresser	-	1 No.
(h)	Ambulance Driver	-	2 Nos.
2. The Hospital is providing free OPD treatment to all staff, their relatives, all students and even all the patients in nearby areas.
3. The Hospital is providing all medicines to the staff and all their entitled family members free of cost throughout the year.
4. A total number of around 30000 patients were examined this year. From them about 200 cases were referred to General Hospital and R.K.Mission Hospital and 20 cases were sent to Vellore Christian Medical College for specialized treatment.

5. N.H.U. proposes to improve the medical facility by keeping more observation seats apart from the existing 6 beds with all routine and biochemical investigations, Ultrasonography, ECG and X-ray facilities.
6. The Hospital has the immunization programme for all the NERIST residents and people living in the vicinity.
7. Birth control pills and condoms are issuing from the hospital to all those who requires free of cost under birth control programme.
8. Hospital is always on alert with emergency requirements for any epidemics which may break out.
9. DOT counter is running under the supervision of DOT Dept. General Hospital, Naharlagun to help the Tuberculosis patients to get their medicines easier.
10. Two blood donation camps were organized by NSS in NHU and 60 bottles of blood submitted to General Hospital, Naharlagun.
11. Round the clock ambulance service is provided to meet any emergency.
12. Facilities to do all routine pathological investigations are provided in the Hospital laboratory.
13. Regular medical camps on HTN/DM/Obesity/MCH organized in the hospital from time to time.

## **5.10 CENTRE FOR APPROPRIATE TECHNOLOGY & RURAL DEVELOPMENT**

### **5.10.1 A Brief Profile of the Department**

The Board of Management of NERIST in its 62<sup>nd</sup> meeting held on August 11, 2007 had resolved to establish the Centre for Appropriate Technology & Rural Development (CATRD) at NERIST. It is a multifunctional and multi disciplinary Centre to meet the needs of NE Region. Centre for Appropriate Technology and Rural Development started its activities from August 2007 at NERIST. It is an independent Centre of NERIST with the under mentioned objectives:

- To cater to the technical needs of the people living in Arunachal Pradesh and neighboring states of the North Eastern Region.
- To support in Technical and Vocational Educational activities of the people of the NE Region.
- To assist the development of social welfare and economic growth of the people in NE Region.
- To establish a consortium of scientific and technical talents to undertake activities that will help to promote and provide Technical Manpower base to

- cater to Non-formal Sector for Technical and Vocational Education and Training (TVET) for Rural Stakeholders
- To encourage Appropriate Technology adaptation and transfer through conducting pilot studies on specific projects.
  - To develop documentary films on the lives of the people of the region by use and application of science and technology in socio-economic growth and development.
  - To preserve rural and indigenous technologies of the NE Region and assist in technical documentation and dissemination of knowledge.
  - To conduct Certificate, Diploma, Degree, Post Graduate Diploma/Degree and Research Degrees in Appropriate Technology and Rural Development for regular or sponsored candidates for State/Central Govt., UN sponsored organizations, SAARC Countries through Multilateral & bilateral agreements under UNDP, UNEP, UNRSCO, WHO, UNIDO, NEC, ADB etc.
  - To organize and support Research, Colloquium, Seminar, Workshops, Conference on various Scientific and Technological advancements leading to the social and economic growth and progress of the region.
  - To use the concept of Remote Sensing (RS) to Sector Professionals and academic community for forecasting Disaster and ensure remedial measures.
  - To solicit, receive and accept grant from Central and State Govt. and other recognized agencies and also materials in the shape of equipments, technical knowledge, documents etc. and also from recognized international funding agencies.
  - To develop necessary infrastructure to conduct various programmed in future.

### 5.10.2 List of Committee Members

Dr. S.K.Shrivastava	Head of the Centre
Dr. P.R. Gajurel	A.P. (Forestry)
Dr. P. Ananda Kumar	A.P. (Agril. Engg.)
Ms. B.L. Sarmah	A.P. (CMS)
Ms. Mudo Pumming	A.P. (Civil Engg.)

## SECTION – 6 MANPOWER

### 6.1 Teaching (Faculty)

Department wise break-up of faculty as on 31.03.2012 is given below:

1.	Forestry	13
2.	Agriculture Engineering	13
3.	Civil Engineering	17
4.	Computer Science & Engineering	09
5.	Electrical Engineering	13
6.	Electronics & Communication Engineering	11
7.	Mechanical Engineering	15
8.	Physics	09
9.	Chemistry	09
10.	Mathematics	08
11.	Humanities & Social Sciences	05
12.	Centre for Management Studies	04
<b>Total (a) =</b>		<b>126</b>

List of faculty members along with their terminal degrees and specializations is given in Annexure - XI

### 6.2 Non-Teaching (Officers and Staff)

The break- up of Officers, Technical, Ministerial and Group-D staff in position as on 31.03.2012 is given below:

#### 6.2.1 Officers

a	Group 'A'	06
b	Group 'B'	03
<b>Total =</b>		<b>09</b>

#### 6.2.2 Technical/Vocational Staff (Non-teaching)

a	Group 'A'	-
b	Group 'B'	-
c	Group 'C'	105
<b>Total =</b>		<b>105</b>

#### 6.2.3 Ministerial Staff

a	Group 'C'	77
<b>Total =</b>		<b>77</b>

#### 6.2.4 Group-D Staff

a	Lab Attendants/Helpers/Pump Attdnt	41
b	Security Guards	11
c	Malis, Labourers & Sweepers	18
d	Peons	30
e	Cook Helpers (Under HMC)	48
<b>Total =</b>		<b>148</b>
<b>Total (b) =</b>		<b>339</b>
<b>GRAND TOTAL (a+b)=</b>		<b>465</b>

## SECTION – 7 CAMPUS LIFE AND EXTRA CURRICULAR ACTIVITIES

### 7.1 HOSTEL MANAGEMENT COUNCIL (HMC)

#### 7.1.1 A Brief Profile of the Section

NERIST is a residential technical institute and the students are required to stay in the Hostels situated in the Campus. This helps in the development of an integrated personality and enables the students to receive training in corporate living in continuous communication with fellow students and teachers. The Hostel Management Council (HMC) is an administrative body for the management of hostel accommodation and mess facilities of seven boys' hostel and one girls' hostel.

#### 7.1.2 Status Report

The Hostels activities are being looked after by a separate establishment called Hostel Management Council (HMC). The present Chairman of the Hostel Management Council and the Chief Warden of the Hostels is Shri Deepak Jhaharia, Assistant Professor in Agricultural Engineering Department.

A brief detail of the hostels are given below:

Hostel	Capacity	No. of Residents	Wardens	Mess Managers-cum-Caretakers
<b>Block-A</b>	124	95	Mr. Nabam Teyi	Mr. Koj Taki
<b>Block-B</b>	124	105	Mr. D. Paul	Mr. Thomas Mathew
<b>Block-C</b>	124	111	Mr. A.K. Das	Mr. Dorjee Shongmu
<b>Block-D</b>	124	112	Mr. Nabam Teyi	Mr. A. Gogoi
<b>Block-E</b>	250	219	Mr. N.G. Sorum	Mr. V.P. Manikuttan
			Mr. N.L. Meitei	
<b>Block-F</b>	250	216	Mr. A.D. Singh	Mr. E.N.V. Nair
			Mr. Ukil Singh	
<b>Block-G</b>	305	290	Dr. Aditi Bhadra	Smt. M. Roychoudhury
			Ms. Y. Tamut	
			Ms. Archana Kumari	

<b>Block-P</b>	250	133	Mr. M.D. Singh	Mr. P. Barman
<b>Total</b>	<b>1551</b>	<b>1281</b>		

### 7.1.3 Highlights

Like previous years, a Hostel Level Anti-Ragging Squad was constituted to visit hostels between 8 p.m. and 12 a.m. for 20 days w.e.f. 20.07.2011 after admission of new students, to add confidence in the minds of new entrants. The squad consists of 26 faculty members including the Hostel Wardens.

The Independence and Republic Days were celebrated in all the Hostels by hoisting the National Flag by the respective Wardens/Chief Warden/Dean(SA) in the front of the respective Block.

## 7.2 NATIONAL CADET CORPS (NCC)

### 7.2.1 A Brief Profile of the Section

NERIST is having two NCC wings one is SD (Boys), which is fully funded by Non-plan of NERIST, and another one is SW (Girls), which is centrally funded by Tezpur NCC unit directly. For the academic year 2011-12 total students enrolled is given below:

<b>Cadets Enrolled</b>	<b>SD ( Boys )</b>	<b>SW ( Girls )</b>
1 <sup>st</sup> Year	93	15
2 <sup>nd</sup> Year	50	35
3 <sup>rd</sup> Year (Given extension)	11	2
<b>Total</b>	<b>154</b>	<b>52</b>

Cadets have been awarded 'B' and 'C' certificates during the period. They also attended ceremonial parades during Independence Day and Republic Day celebration. All total 03 camps were attended which includes Camp at 12 Assam Police Bn, Kusumtola, Assam; National Integration Camp (NIC), Kalpakkam, Chennai, and All India trekking expedition Kerala trek 2011-12, Kerala

## 7.2 NATIONAL SERVICE SCHEME (NSS)

### 7.2.1 A Brief Profile of the Section

The NSS Cell in NERIST is managed by a Programme Co-Ordinator with the active participation and support of Programme Officers and group leaders. This year 1016 students (Male 780 and Female 236) enrolled as NSS Volunteers.

### 7.2.2 Status Regarding Activities

NSS activities for the academic session 2011-12 took off with an orientation programme for the newly admitted volunteers on 15.8.2011. Using audiovisual demonstrations, volunteers were enlightened about the aims and objectives of NSS, significance of its motto, badge, about the role expected from an NSS volunteers etc. A

lecture was also delivered by Dr.H.S.Yadav, Dean (SA) about the aims and objectives of NSS. On the occasion of Independence Day 2011 a Blood Donation Camp Organize at NERIST Health Unit, about 35 Blood donor donated.

The Cell observed the NSS day on 24.09.2011.The occasion was marked by a function followed by plantation of tree and awareness campaign on Environment. The ceremony was attended by Program Officers, Volunteers. Speaking on the occasion the Co-ordinator of the Cell emphasized the role of the NSS for the welfare of the society. She also stated that keeping the all round developments and changes taking place around us the horizon of NSS needs to be enlarged.

Regular activity was organized on 22.10.2011, 21.1.2012, 04.2.2012 and 18.2.2012 in the main campus and degree block. Approximately 400 number of volunteers participated in it. The main activities were campus cleaning along with tree plantation of 400 saplings.

The NSS Cell of NERIST observed 143<sup>th</sup> Birth Anniversary of Mahatama Gandhi and 107<sup>th</sup> Birth Anniversary of former Prime Minister Lal Bahadur Shastri. The occasion was marked by tree plantation. Around 50 saplings of Amla (*Emblica officinalis*) and 30 seedlings of Coconut (*Coccos nucisera*) were planted along the roadside of the campus.

A Massive Blood donation camp was organised by NSS cell in coordination with Naharlagun General Hospital and Medical Health Unit, NERIST on 11.02.2012. 50 Nos of NSS Volunteers, Programme Officer and Prof. Binay Singh, Director, NIRD, Guwahati, donated blood out of which 7 were girls.

### Special Camp Report

Special camp was organized from 03.03 2012 to 04.03.2012 at the Modern Village, Naharlagu, Arunachal Pradesh. The camp was attended by around 200 student volunteers and Program officers of NERIST along with students and teachers of Govt. Middle School, Modern Village and its villagers. Around 200 saplings of amla (*Embilica indica*) and jack fruit (*Artocarpus hetrophylus*) were planted followed by campus cleaning. The plantation and the maintenance of Eco System of Modern village will be taken care of by the NSS Cell, NERIST in future. A free medical checkup for the villagers and the students was also conducted by Dr. Sushmita P.Taggu, Medical Officer NERIST Health Unit. Around 150 villagers and students availed this free medical facility.

### 7.3 ESTATE OFFICE

The Estate office has been established to look after day to day estate matter of the institute, dealing with matters like land encroachment, illegal constructions, Liaitioning with the external agencies like Dy. Commissioner Papum pare, Dy. Commissioner Capital, land & Revenue/Records officers of the state, Addl. District Magistrate Naharlagun, EAC, Naharlagun etc and dealing with legal matters related to land encroachments and others. The Estate Office works also include field visits extended to entire campus and day-to-day records keeping work, House allotments, and issue of furniture to quarters etc.



## 7.4 EDUCATIONAL TECHNOLOGY CELL

Educational Technology Cell was established as an MHRD project with an objective to improve the teaching learning process. The Cell has one seminar hall equipped with modern facilities like Audio-Video equipments, Digital Camera, LCD Projectors, Video Conferencing system, Panaboard, etc. Apart from this ET Cell looks after the Local Area Networking (LAN) of the Institute, comprising of 1500 nodes spreading various departments, Sections, Hostels and Residential area Wi-Fi. The LAN is connected to Internet through 16 Mbps bandwidth Leased Line from BSNL and 150 Mbps bandwidth from NKN to provide faster network access. This section launched new web site for institute.

## SECTION – 8 FUNDS AND AUDIT

The Institute is a Central Scheme of the Ministry of Human Resource Development and is fully funded by the Government of India through the MHRD.

At the beginning of the financial year 2011-2012, the Institute had an unspent balance of Rs.813.70 lakhs. During the year, the Institute received Rs.3673.00 lakhs as grant-in-aid and Rs.238.16 as IRG. This included grant-in-aid of 0.00 lakhs sanctioned at the fag-end of 2010-2011 but received in 2011-2012. The unspent balance as on 31.03.2012 is Rs.753.30 lakhs which shall be utilized during 2012-13. Brief break-up of fund received and expenditure incurred is given as under:-

Details of account	HEAD			Grand Total (2+3+4)
	PLAN (Capial)	PLAN (Genera I	NON- PLAN	
(1)	(2)	(3)	(4)	(5)
Previous balance	111.08	02.53	700.09	813.70
Fund received during 2011-12	559.00	140.00	2974.0 0	3673.00
IRG 2011-12	--	--	238.16	238.16
Expenditure incurred during 2011-12	597.81	33.36	3340.3 9	3971.56
Unspent Balance as on 31.03.2012	72.27	109.17	571.86	753.30

The detailed information related to the accounts of the Institute for the year 2011-12 and the audited accounts of the Institute is given in Annexure-XII.

**MEMBERS of NERIST SOCIETY as on 31.03.2012**

1. Gen. (Retd.) J.J. Singh, PVSM, AVSM, VSM H.E. the Governor of Arunachal Pradesh	-	President
2. The Hon'ble Minister, (Higher/Technical Education), Govt. of Assam	-	Member
3. The Hon'ble Minister (Higher/Technical Education), Govt. of Arunachal Pradesh	-	Member
4. The Hon'ble Minister (Higher/Technical Education), Govt. of Manipur	-	Member
5. The Hon'ble Minister (Higher/Technical Education), Govt. of Meghalaya	-	Member
6. The Hon'ble Minister (Higher/Technical Education), Govt. of Mizoram	-	Member
7. The Hon'ble Minister (Higher/Technical Education), Govt. of Nagaland	-	Member
8. The Hon'ble Minister (Higher/Technical Education), Govt. of Sikkim	-	Member
9. The Hon'ble Minister (Higher/Technical Education), Govt. of Tripura	-	Member
10. The Addl. Secretary (T), MHRD, New Delhi	-	Member
11. The Financial Adviser, IFD, MHRD, New Delhi	-	Member
12. Shri M.P. Bezbaruah, Chairman, BoM, NERIST	-	Member
13. Dr. Kamal Kant Dwivedi, Scientist 'G', DST, Technology Bhawan, New Mehrauli Road, New Delhi-16	-	Member
14. Prof. S.S. Mantha, Vice Chairman, AICTE, 7 <sup>th</sup> Floor, Chander Lok Building, Janpath, New Delhi-01	-	Member
15. Dr. (Mrs.) Seema Bawe, Head, Department of Computer Sciences, Thapar Institute of Engineering & Technology, Patiala, Punjab	-	Member
16. Shri Tsetan Chombey Kee, Village – Sela, Dist. Tawang, Arunachal Pradesh – 790 104	-	Member
17. Prof. Dipankar Pal, Director, NERIST	-	Member
18. Dr. R.P. Bhattacharjee, Registrar i/c, NERIST	-	Non-member Secretary

## Annexure-II

**MEMBERS of NERIST BOARD OF MANAGEMENT as on 31.03.2012**

1.	Shri M.P. Bezbaruah, DW-323, Niravana Country, South City II, Gurgaon – 122 018	-	Chairman
2.	Prof. Dipankar Pal, Director, NERIST	-	Member
3.	The Commissioner/Secretary (Higher/Technical Education), Govt. of Assam	-	Member
4.	The Commissioner/Secretary (Higher/Technical Education), Govt. of Arunachal Pradesh	-	Member
5.	The Commissioner/Secretary (Higher/Technical Education), Govt. of Manipur	-	Member
6.	The Commissioner/Secretary (Higher/Technical Education), Govt. of Meghalaya	-	Member
7.	The Commissioner/Secretary (Higher/Technical Education), Govt. of Mizoram	-	Member
8.	The Commissioner/Secretary (Higher/Technical Education), Govt. of Nagaland	-	Member
9.	The Commissioner/Secretary (Higher/Technical Education), Govt. of Sikkim	-	Member
10.	The Commissioner/Secretary (Higher/Technical Education), Govt. of Tripura	-	Member
11.	Lt. Gen. D.D.S. Sandhu, Vice Chancellor, Kurushetra Univ., Kurushetra, Haryana	-	Member
12.	Prof. S.K. Biswas, Deptt. Of Electrical Engg., Jadavpur University, Kolkata – 700032	-	Member
13.	The Financial Adviser, IFD, MHRD, New Delhi	-	Member
14.	Shri N. Mohan Das, Director(T), MHRD, New Delhi	-	Member
15.	Mr. Prasant Bora, Manager (Engineering), IOCL, Silchar, 1 <sup>st</sup> Floor Jagannath Apartment, Hospital Road, Silchar – 788 005, Assam	-	Member
16.	Prof. R.M. Pant, Dean (Acad), NERIST	-	Member
17.	Prof. M. Muralidhar, Dean (P&D), NERIST	-	Member
18.	Prof. P.R. Alapati, Dean (SA), NERIST	-	Member
19.	Prof. M. Hussain, Deptt. of Chemistry, NERIST	-	Member
20.	Dr. P. R. Parida, Asso. Prof. Deptt. of HSS, NERIST	-	Member
21.	Dr. H.P. Singh, Asstt. Prof., Deptt. of CE, NERIST	-	Member
22.	Dr. R.P. Bhattacharjee, Registrar i/c, NERIST	-	Non-Member Secretary

## Annexure-III

**MEMBERS OF NERIST FINANCE COMMITTEE AS ON 31.03.2012**

- |     |  |   |                                    |
|-----|--|---|------------------------------------|
| 1)  | Shri M.P. Bezbaruah, Chairman, BoM, NERIST                                     | - | Chairman                           |
| 2)  | Shri Ankur Garg, Secretary to H.E. the Governor of Arunachal Pradesh, Itanagar | - | Member                             |
| 3)  | The Vice Chancellor, Rajiv Gandhi University, Doimukh, Arunachal Pradesh       | - | Member                             |
| 4)  | The Commissioner (Education), Govt. of AP., Itanagar                           | - | Member                             |
| 5)  | The Joint Secretary, UGC Bahadur Shah Jafer Marg. New Delhi – 02               | - | Member                             |
| 6)  | Shri A.N. Jha, Additonal Secretary & FA MHRD, Govt. of India, New Delhi        | - | Member                             |
| 7)  | Shri N. Mohan Das, Director (Tech), MHRD, New Delhi                            | - | Member                             |
| 8)  | Prof. Dipankar Pal, Director, NERIST   | - | Member                             |
| 9)  | Dr. R.P. Bhattacharjee, Registrar i/c, NERIST                                  | - | Member                             |
| 10) | Dy. Registrar (Fin), NERIST  | - | Ex-officio<br>Non-Member Secretary |

**MEMBERS OF ACADEMIC COUNCIL AS ON 31.3.2012**

1.	Prof. Dipankar Pal, Director, NERIST	-	Chairman
2.	Prof. H.S. Yadav, Dean (Admn.)	-	Member
3.	Prof. R.M. Pant, Dean (Acad)	-	Member
4.	Prof. M. Muralidhar, Dean (P&D)	-	Member
5.	Prof. P.R. Alapati, Dean (SA)	-	Member
6.	Prof. Sukumar Nandi, Dean(Academic Affairs), IIT Guwahati	-	Member
7.	Prof. M. Bhuyan, Dean, School of Engg., Tezpur Univ.	-	Member
8.	Prof. H.N. Sarma, Dean, Faculty of Life Science, RGU, Doimukh, AP	-	Member
9.	Prof. S.S. Sarkar, Hed, Deptt. of Business Administration, Tezpur University, Assam	-	Member
10.	Prof. N.N. Patwari, Dean(Engg.), Gauhati University, Jalukbari, Assam	-	Member
11.	Principal, Rajiv Gandhi Polytechnic, Itanagar, AP	-	Member
12.	Er. Arung Siram, DGM, BSNL, Itanagar	-	Member
13.	Prof. J. Choubey, Deptt. of Mathematics	-	Member
14.	Prof. S.K. Singh, Deptt. of Civil Engg	-	Member
15.	Prof. Mubarak Husain, Deptt. of Chemistry	-	Member
16.	Prof. P.K. Das, Deptt. of Mathematics	-	Member
17.	Prof. R. Prasad, Deptt. of Physics	-	Member
18.	Prof. L.S. Yadav, Deptt. Agril. Engg.	-	Member
19.	Prof. H.S. Yadav, Deptt. of Chemistry	-	Member
20.	Prof. R.M. Pant, Centre for Management & Studies	-	Member
21.	Prof. M. Muralidharan, Deptt. of Mech. Engg	-	Member
22.	Prof. A. Chatterjee, HoD(Physics)	-	Member
23.	Prof. P.K. Tripathy, HoD(Chemistry)	-	Member
24.	Prof. L.K. Arora, HoD (Maths)	-	Member
25.	Prof. M.L. Khan, HoD(Forestry)	-	Member
26.	Prof. Anwar Hussain, Deptt. of ECE	-	Member
27.	Prof. M.F. Hussain, Deptt. of Chemistry	-	Member
28.	Prof. K.D. Ram, Deptt. of Chemistry	-	Member
29.	Prof. (Mrs.) P. Rethy, Deptt. of Forestry	-	Member
30.	Prof. Binay Singh, Deptt. of Forestry	-	Member
31.	Prof. P.R. Alapati, Deptt. of Physics	-	Member
32.	Prof. P.P. Dabral, Deptt. of AE	-	Member
33.	Prof. V.K. Dhar, Deptt. of Physics	-	Member
34.	Prof. S.K. Pandey, Deptt. of Mathematics	-	Member
35.	HoD, Agricultural Engineering	-	Member
36.	HoD, Civil Engineering	-	Member
37.	HoD, Computer Sc. and Engg.	-	Member
38.	HoD, Electrical Engineering	-	Member
39.	HoD (ECE)	-	Member
40.	HoD, Mechanical Engineering	-	Member
41.	HoD, Physics	-	Member

42. HoD, Chemistry	-	Member
43. HoD, Mathematics	-	Member
44. HoD, Forestry	-	Member
45. HoD, Humanities & Social Science	-	Member
46. HoC, Centre for Management & Studies	-	Member
47. HoC, CATRD	-	Member
48. Dr. P.R. Parida, Associate Professor, HSS	-	Member
49. Dr. M. Sengupta, Associate Professor, Physics	-	Member
50. Dr. C.L. Sharma, Associate Professor, Forestry	-	Member
51. Mr. S.J. Bora, Asstt. Pofessor, CSE	-	Member
52. Mr. M. Chandrasekhar, Asstt. Professor, ME	-	Member
53. Dr. B.K. Singh, Asstt. Professor, Maths	-	Member
54. Dr. R.P. Bhattacharjee, Registrar i/c, NERIST	-	Non-Member Secretary

## Annexure-V

**MEMBERS OF BUILDING AND WORKS COMMITTEE ON 31.03.2012**

- |   |                           |
|---|---------------------------|
| 1. Prof. Dipankar Pal, Director, NERIST               | : Chairman                |
| 2. Secretary, Education, Govt. of A.P                 | : Member                  |
| 3. Chief Engineer (WZ), APPWD, Govt. of A.P           | : Member                  |
| 4. Prof.M. Muralidhar, Dean (P&D), NERIST             | : Member                  |
| 5. Dr. R.K. Prasad, HoD (Civil Engg.), NERIST         | : Member                  |
| 6. Ar. Dawa Tsering, Sr.Architect, PWD, Govt. of A.P  | : Member                  |
| 7. Er. Jilek Hiri, Executive Engineer (Civil), NERIST | : Non-Member<br>Secretary |

**INSTITUTE ADMINISTRATION AS ON 31.03.2012**

1.	Director	-	Prof. Dipankar Pal
2.	Deans:		
	Administration	-	Prof. H.S. Yadav
	Academic	-	Prof. R.M. Pant
	Student's Affairs	-	Prof. P.R. Alapati
	Planning & Development	-	Prof. M. Muralidhar
3.	Registrar i/c	-	Dr. R.P.Bhattacharjee
4.	Deputy Registrars:		
	Finance	-	Dr. R.P.Bhattacharjee
	Academic	-	Dr. R.P.Bhattacharjee
	Administration	-	Shri Mai Ranjit
	Store &Purchase	-	Shri Mai Ranjit
5.	Librarian	-	Shri Ashim Kr. Gupta
6.	Assistant Workshop Superintendent i/c	-	Shri Tapan Chakraborty
7.	Security Officer	-	Shri Passang Simi
8.	Liaison Officer, SC/ST	-	Shri Doge Kamduk
9.	Executive Engineer	-	Shri Jilek Hiri
10.	Estate Officer	-	Shri Kapang Legoh
11.	Chief Medical Officer i/c	-	Dr. Popi Camdir Tok
12.	Vigilance Officer	-	Prof. P.R. Alapati
13.	Sports Officer	-	Shri B.S. Raja
14.	Hindi Officer	-	Shri Ratan Singh
15.	Head of the Departments:		
	Forestry	-	Dr. C.L. Sharma
	Agricultural Engineering	-	Dr. P.P. Dabral
	Civil Engineering	-	Dr. R.K. Prasad
	Computer Science & Engg.	-	Shri S.J. Borah
	Electrical Engineering	-	Dr. R.K. Mehta
	Electronics & Communication Engg.	-	Dr. R. Subadar
	Mechanical Engineering	-	Dr. Asis Giri
	Physics	-	Prof. M. Sengupta
	Chemistry	-	Prof. P.K. Tripathi
	Mathematics	-	Prof. L.K. Arora
	Humanities & Social Science	-	Dr. (Ms) S. Sinha
	Centre for Management Studies	-	Shri S. Choudhury
16.	Head of Centre (CATRD)	-	Dr. S.K.Shrivastava
17.	Chairmen:		
	NEE Committee	-	Dr. M.F. Hussain
	HMC	-	Mr. D. Jhajharia
	Gymkhana	-	Mr. Sandeep Singh
	Telecom	-	Shri M. Mishra
	TPT	-	Dr. S. Samanta
	Library	-	Prof. R.M. Pant
	HAC	-	Dr. R.P. Bhatacherjee



18.	Training & Placement i/c	-	Dr. Saibal Chatterjee
19.	ET Cell i/c	-	Dr. Sarsing Gao
20.	Coordinators:		
	SRIC	-	Dr. N. Deb
	NSS	-	Dr. (Mrs.) T. Tuithung
	CEP	-	Dr. C.L. Sharma
	CRF	-	Dr. P.P. Dabral
	ACCF	-	Dr. Saibal Chatterjee
	DOE	-	Dr. S.K. Bhagat
21.	Controller of Examination	-	Dr. P. Parida
22.	Secretary NEE Committee	-	Dr. R.P. Bhattacharjee
23.	NCC Officer	-	Dr. P. Anand Kumar

**MEMBERS OF LIBRARY COMMITTEE AS ON 31.03.2012**

1.	Dr. R.M. Pant	:	Chairman
2.	Dr. Tado Karlo	:	Member
3.	Dr. P.K. Tripathy	:	Member
4.	Dr. M.M. Dixit	:	Member
5.	Dr. Suresh Kumar Singh	:	Member
6.	Mr. Anu Kumar Das	:	Member
7.	Mr. Manish Kumar	:	Member
8.	Mr. A.K. Patra	:	Member
9.	Mr. K. Kiran Singh	:	Member
10.	Mr. P.K. Pranav	:	Member
11.	Mr. Raju Borthakur	:	Member
12.	Mr. S. Samanta	:	Member
13.	Shri A.K. Gupta	:	Member-Secretary

**MEMBERS OF NEE COMMITTEE AS ON 31.3.2012**

- |                           |   |                  |
|---------------------------|---|------------------|
| 1. Dr. M.F. Hussain       | - | Chairman         |
| 2. Dr. R.P. Bhattacharjee | - | Member Secretary |
| 3. Dr. Saibal Chatterjee  | - | Member           |
| 4. Dr. Nidhuban Deb       | - | Member           |
| 5. Dr. Awadesh Kumar      | - | Member           |
| 6. Dr. Ajay Bharti        | - | Member           |

**MEMBERS OF HOSTEL MANAGEMENT COUNCIL AS ON 31.3.2012****Chairman**

Mr. Deepak Jhajharia

**Wardens**

a)	Mr. Nabam Teyi	Hostel Block – A
b)	Mr. D. Paul	Hostel Block – B
c)	Shri A.K. Das	Hostel Block – C
d)	Mr. Nabam Teyi	Hostel Block – D
e)	Mr. N. G. Sorum	Hostel Block – E
	Mr. N.L. Meitei	———— do ———
f)	Mr. Ukil Singh	Hostel Block – F
	Mr. A.D. Singh	———— do ———
g)	Dr. Aditi Bhadra	Hostel Block – G
	Ms. Y. Tamut	———— do ———
	Mrs. Archana Kumari	----- do -----
h)	Mr. M. D. Singh	Hostel Block - P

## Annexure-X

## STATE-WISE LIST OF CANDIDATES ADMITTED IN THE YEAR 2011

Name of State & category	Module											
	NEE-I			NEE-II (Technology)			NEE-II (forestry)			NEE-III		
	Selecte d	Wait	Total	Selected	Wait	Total	Selecte d	Wait	Total	Selecte d	Wait	Total
<b>PRC</b>	08	07	<b>15</b>	02	01	<b>03</b>	02	-	<b>02</b>	02	02	<b>04</b>
<b>PD</b>	04	02	<b>06</b>	02	-	<b>02</b>	01		<b>01</b>	01	-	<b>01</b>
<b>Arunachal</b>	12	11	<b>23</b>	02	02	<b>04</b>	02	01	<b>03</b>	05	02	<b>07</b>
<b>Assam</b>	14	05	<b>19</b>	01	05	<b>06</b>	-	03	<b>03</b>	04	03	<b>07</b>
<b>Manipur</b>	16	04	<b>20</b>	03	04	<b>07</b>	01	01	<b>02</b>	04	02	<b>06</b>
<b>Meghalay a</b>	12	07	<b>19</b>	02	01	<b>03</b>	-	01	<b>01</b>	02	03	<b>05</b>
<b>Mizoram</b>	15	05	<b>20</b>	03	03	<b>06</b>	02	01	<b>03</b>	05	02	<b>07</b>
<b>Nagaland</b>	14	06	<b>20</b>	03	01	<b>04</b>	01		<b>01</b>	06	01	<b>07</b>
<b>Sikkim</b>	14	04	<b>18</b>	02	03	<b>05</b>	01	-	<b>01</b>	-	01	<b>01</b>
<b>Tripura</b>	07	08	<b>15</b>	02	02	<b>04</b>	03	-	<b>03</b>	06	-	<b>06</b>
<b>All India</b>	16	04	<b>20</b>	03	01	<b>04</b>	01	02	<b>03</b>	03	03	<b>06</b>
<b>Total</b>	<b>132</b>	<b>63</b>	<b>195</b>	<b>24</b>	<b>24</b>	<b>48</b>	<b>14</b>	<b>09</b>	<b>23</b>	<b>38</b>	<b>19</b>	<b>57</b>

**LIST OF CANDIDATES ADMITTED IN BASE MODULE (NEE-I)  
IN THE YEAR 2011 (STATE & BRANCH WISE)**

DISCIPLIN E	PD	PR C	AP	AS	MN	MG	MZ	NL	SK	TR	AI	TOTAL
<b>AE</b>	02	-	04	04	04	04	04	04	04	01	04	<b>35</b>
<b>CE</b>	-	04	04	04	04	04	04	04	04	04	04	<b>40</b>
<b>EC</b>	03	01	04	04	04	04	04	04	04	04	04	<b>40</b>
<b>EE</b>	-	03	04	04	03	04	04	04	04	04	04	<b>38</b>
<b>ME</b>	01	03	04	04	04	04	04	04	04	04	04	<b>40</b>
<b>TOTAL</b>	<b>06</b>	<b>11</b>	<b>20</b>	<b>20</b>	<b>19</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>17</b>	<b>20</b>	<b>193</b>

**LIST OF CANDIDATES ADMITTED IN BASE MODULE (NEE-II)  
IN THE YEAR 2011 (STATE & BRANCH WISE)**

DISCIPLIN E	PD	PR C	AP	AS	MN	MG	MZ	NL	SK	TR	AI	TOTAL
-------------	----	------	----	----	----	----	----	----	----	----	----	-------

<b>AE</b>	-	-	-	-	01	01	01	01	-	-	-	<b>04</b>
<b>CE</b>	01	01	02	02	01	01	01	01	01	01	-	<b>12</b>
<b>CS</b>	-	-	-	-	01	-	01	-	-	-	-	<b>02</b>
<b>EC</b>	01	-	-	01	02	-	01	-	-	01	01	<b>07</b>
<b>EE</b>	-	01	01	02	01	-	01	01	02	01	01	<b>11</b>
<b>ME</b>	01	-	01	01	01	01	01	01	01	01	01	<b>10</b>
<b>FO</b>	01	02	03	03	02	-	03	01	01	03	03	<b>22</b>
<b>TOTAL</b>	<b>04</b>	<b>04</b>	<b>07</b>	<b>09</b>	<b>09</b>	<b>03</b>	<b>09</b>	<b>05</b>	<b>05</b>	<b>07</b>	<b>06</b>	<b>68</b>

**LIST OF CANDIDATES ADMITTED IN BASE MODULE (NEE-III)  
IN THE YEAR 2011 (STATE & BRANCH WISE)**

<b>DISCIPLIN E</b>	<b>PD</b>	<b>PR C</b>	<b>AP</b>	<b>AS</b>	<b>MN</b>	<b>MG</b>	<b>MZ</b>	<b>NL</b>	<b>SK</b>	<b>TR</b>	<b>AI</b>	<b>TOTAL</b>
<b>AE</b>	01	-	01	-	-	-	-	01	-	-	-	<b>03</b>
<b>CE</b>	-	02	03	01	01		02	01		02		<b>12</b>
<b>CS</b>	-	01	-	01	02	02	02	01	01	02	01	<b>13</b>
<b>EC</b>	-	01	01	02	02	-	02	02	-	-	02	<b>12</b>
<b>EE</b>	-	-	03	01	01	01	01	01	-	01	02	<b>11</b>
<b>ME</b>	-	-	02	02	-	01	-	01	-	01	01	<b>8</b>
<b>TOTAL</b>	<b>01</b>	<b>04</b>	<b>07</b>	<b>07</b>	<b>06</b>	<b>05</b>	<b>07</b>	<b>07</b>	<b>01</b>	<b>06</b>	<b>06</b>	<b>59</b>

**LIST OF CANDIDATES ADMITTED IN THE YEAR 2011  
(BRANCH & GENDER WISE)**

<b>Branch</b>	<b>NEE</b>									<b>Grand Total</b>		
	<b>I</b>			<b>II</b>			<b>III</b>			<b>M</b>	<b>F</b>	<b>Total</b>
	<b>M</b>	<b>F</b>	<b>Total</b>	<b>M</b>	<b>F</b>	<b>Total</b>	<b>M</b>	<b>F</b>	<b>Total</b>			
<b>AE</b>	23	12	<b>35</b>	02	02	<b>04</b>	03	-	<b>03</b>	28	14	<b>42</b>
<b>CE</b>	33	07	<b>40</b>	12	-	<b>12</b>	11	01	<b>12</b>	56	08	<b>64</b>
<b>CS</b>	-	-	-	02		<b>02</b>	10	03	<b>13</b>	12	03	<b>15</b>
<b>ECE</b>	36	04	<b>40</b>	06	01	<b>07</b>	09	03	<b>12</b>	51	08	<b>59</b>
<b>EE</b>	29	09	<b>38</b>	10	01	<b>11</b>	10	01	<b>11</b>	49	11	<b>60</b>
<b>ME</b>	37	03	<b>40</b>	10	-	<b>10</b>	08	-	<b>08</b>	55	03	<b>58</b>
<b>FO</b>	-	-	-	12	10	<b>22</b>	-	-	-	12	10	<b>22</b>
<b>Total</b>	15	35	<b>193</b>	54	14	<b>68</b>	51	08	<b>59</b>	263	57	<b>320</b>
	8											



## LIST OF FACULTY AS ON 31.03.2012

Name of the faculty members	Date of joining	Specialization
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## A.XI.1 Department of Applied Science (Forestry)

**Professor**

Dr. (Mrs.) P.Rethy, Ph.D	31.03.09	Biosystematics
Dr. Binay Singh, Ph.D	31.03.09	Horticulture
Dr. M.L. Khan, Ph.D &(HoD)	31.03.09	Biodiversity Conservation & Silviculture

**Associate Professor**

Dr. C.L. Sharma, Ph.D	02.08.07	Wood Science
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**Assistant Professor**

Dr. (Mrs.) Mary P.P., Ph.D	31.03.09	Fish Microbiology
Dr. (Mrs.) M. Sharma Ph.D	31.03.09	Wood Science
Dr. (Mrs.) K. Shrivastava, Ph.D.	31.03.09	Microbial Aerobiology& Plant Pathology
Dr. P.R. Gajurel, Ph.D	20.06.06	Botany Taxonmy
Dr. L.B. Singha, Ph.D	23.06.06	Botany Taxonmy
Dr. O.P. Tripathi, Ph.D	26.06.06	Forest Ecology
Shri Gobinda Pangging, M.Sc	23.06.06	Forestry Economics & Mngt
Dr. Awadhesh Kumar, Ph.D.	29.06.06	Wild life Biology
Dr. K.Suresh Kr. Singh, Ph.D	13.07.06	Social Microbial Ecology

## A.XI.2 Department of Agricultural Engineering

**Professor**

Dr. L.S. Yadav, Ph.D	09.10.98	Farm Machinery and Power
Dr. P.P. Dabral, Ph.D & (HoD)	31.03.09	Social & Water Engg.

**Associate Professor**

Dr. K.N. Dewangan, Ph.D.	09.12.09	Farm Machinery & Power
Dr. Brijesh Srivastava, Ph.D	01.04.10	Process and Food Engg
Shri S.K. Shrivastava, M.Tech.	26.12.01	Soil & Water Conservation
Shri D.K. Shyamal, M.Tech.	31.12.01	Post Harv Proc. & Food Engg

**Assistant Professor**

Shri Deepak Jhalaria, M.Tech	02.08.07	Water Resource Engg
Shri Ukil Singh, M.Tech	04.07.06	Farm Machinery & Power
Shri Pankaj Kr. Pandey, ME	17.07.06	Irrigation & Water Mangt
Dr. P.K.Pranab, Ph.D.	18.07.06	Farm Machinery & Power
Shri Thaneswar Patel, M.Tech	24.07.06	Farm Machinery & Power
Dr. Aditi Bhadra, Ph.D.	28.08.06	Soil & Water Consvrn. Eng.
Dr. P. Anand Kumar, Ph.D.	28.08.06	Post Harvest Engg.



Dr. Arnab Bandopadhyay, Ph.D. 01.02.10 Thermal & spatial trends of  
ref. Evapotranspiration

### A.XI.3 Department of Civil Engineering

#### Professor

Dr. S.K. Singh, Ph.D 26.04.97 Geotechnical Engg.

#### Associate Professor

Dr. R.K. Prasad, Ph.D & (HoD) 10.12.09 Water Resource Engg.

#### Assistant Professor

Dr. S. Baishya, Ph.D 31.03.09 Geotechnical Engg.  
Dr. S. Misra, Ph.D 31.03.09 Town Planning  
Shri S.K. Sahu, M.Tech 31.03.09 Hydraulic & Water Resource  
Engg.  
Dr. H.P.Singh, Ph.D. 31.03.09 Soil Mechanics & Foundation  
Engg.  
Ms. Y. Bidyalaxmi Devi, M.Tech 20.06.06 Env. Science & Engg.  
Ms. Mudo Puming, M.Tech 26.06.06 -  
Smt. Dipika Devi, M.Tech 18.07.06 Social Mechenics & Fntrn. Engg.  
Dr. Ajay Bharti, Ph.D. 26.09.06 Environmental Engg.  
Shri K. Kiran Singh, B.Tech 23.01.09 -  
Shri Monowar Hussain, M.Tech 21.12.09 Soil Mechanic & Foundation  
Engg.  
Ms. Yamen Tamut, M.Tech 14.12.09 Transportation Engg.  
Mr. N.G. Sorum, M.Tech 09.12.09 Transportation Engg.  
Shri K. James Singh, ME 28.01.10 Wastewater Management &  
Flood Control  
Ms. Ajanta Kalita, ME 09.02.10 Soil Mechanic & Foundation  
Engg.  
Shri Dibendu Pal, M.Tech 09.02.10 Transportation Sys. Engg.

### A.XI.4 Department of Computer Science & Engineering

#### Assistant Professor

Dr. (Mrs.) T. Tuithung, Ph.D. 31.03.09 Image Processing  
Dr. Ningrinla Marchang, Ph.D. 02.08.07 Database Management Sys  
Shri Satyajyoti Borah, M.Tech(HoD) 31.03.09 Image Processing  
Shri Kapang Legoh, M.Tech 31.03.09 -  
Ms. Margaret Kathing, M.Tech 03.12.09 -  
Shri Marjit Singh, M.Tech 02.01.07 -  
Shri Aswani Kr. Patra, B.Tech 23.01.09 -  
Shri Manjul Saikia, M.Tech 11.07.07 -  
Shri Amar Taggu, M.Tech 11.12.09

**A.XI.5 Department of Electrical Engineering****Associate Professor**

Dr. O.P. Roy, Ph. D	02.08.07	Electric Drive, Micro.
Dr. S. Chatterjee, Ph. D.	09.12.09	High Voltage Engg.
Dr.R.K. Mehta, Ph.D. & HoD	10.12.09	Control Engg
Dr. Sarsing Gao, Ph. D.	02.08.07	Alternative Hydo-Energy Sys

**Assistant Professor**

Dr. S.K.Bhagat, Ph.D	31.03.09	Control System
Shri T.V. Prakash Singh, M.E	02.08.07	Control and Instrumentation
Dr. Arvind Kr. Singh, Ph.D.	02.08.07	Power System
Shri Radak Blange, M.Tech	31.03.09	Control Engg.
Shri Deben Singh, M.Tech	20.06.06	Electronic Design & Tech.
Shri Adikanda Parida, M.E	17.07.06	Industrial System & Drives
Shri Anu Kr. Das, M.Tech	12.01.07	Power & Energy system Eng.
Shri N.L. Meitei, M.Tech	24.12.09	-
Ms. Somila Hashunao, M. Tech	15.01.10	-

**A.XI.6 Department of Electronics & Communication Engineering****Professor**

Dr. Anwar Hussain, Ph.D	31.03.09	Microwave Engg Fiber optic Integration
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**Assistant Professor**

Shri R. Subadar, M.Tech & (HoD)	02.08.07	Design and Technology
Shri Tripurari Sharan, M.Tech	31.03.09	-
Shri A. Dinamani Singh, M. Tech	20.06.06	-
Ms. Joyatri Bora, M.Tech	22.06.06	Electronics Design & Tech.
Shri Ashok Kr. Ray, B.Tech	03.07.06	-
Shri S. Majumdar, M.Tech.	14.07.06	Instrumen. & Control Engg.
Shri Pranab Kr. Dutta, M.Tech	24.07.06	Electronics Design & Tech.
Shri Madhusudan Mishra, M.Tech	24.07.06	-
Shri Manish Kumar, M.Tech	09.03.07	-
Shri Rushni Kima Mangang, ME	23.02.10	Applied Electronics

**A.XI.7 Department of Mechanical Engineering****Professor**

Prof. M. Muralidhar, Ph.D	31.03.09	Foundary Engg.
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**Associate Professor**

Dr. Asis Giri, Ph.D. & HoD	22.12.09	
Shri S. Ray, M.M.E	02.08.07	Fluid Mechanicis & Hydraulics Engg

**Assistant Professor**

Shri Pradip Lingfa, M.Tech	31.03.09	Energy Studies
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Shri M. Chandrasekharan, M.Tech	31.03.09	Production Engg & System
Shri S. Mahto, M.Tech	31.03.09	CIDM
Dr. M.P. Thaddeus, Ph.D.	19.09.94	Industrial Engg.
Shri Kajal Kr. Mandal, M.Tech	02.08.07	Production Technology
Shri Sandeep Singh, M.Tech	02.08.07	Tribology
Shri Sutanu Samanta, M.E	02.08.07	Production Engineering
Shri Narendra Kumar Rana, M.E	05.07.06	Industrial Material & Metallurgy
Shri Maryom Dabi, B.Tech	06.07.06	-
Dr. Satyam Shivam Gautam, Ph.D.	03.08.06	Mechanical
Shri Amitava Mandal, M.Tech	31.01.07	Manufacturing Tech.
Shri Biplab Das, M.Tech	22.12.09	
Shri Nabam Teyi, M.Tech	11.01.10	

### A.XI.8 Department of Physics

#### Professor

Dr. Rajendra Prasad, Ph.D	26.04.97	Experimental Nuclear Physics & Plasma Theory
Dr. A. Chatterjee, Ph.D	31.03.09	X-ray, Crystallography
Dr. V.K. Dhar, Ph.D.	31.03.09	Polymer & Fiber Physics
Dr. P.R. Alapati, Ph.D.	31.03.09	Condensed matter (Liquid Cryst)

#### Associate Professor

Dr. M. Sengupta, Ph.D. & HoD	02.08.07	Theoretical Nuclear Physics
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#### Assistant Professor

Dr. Tado Karlo, Ph.D	31.03.09	Mathematical Foundation of Quantum Physics
Dr. Arvind Pandey, Ph.D	02.08.07	Superconductivity
Dr. (Mrs.) Th. Gomti Devi, Ph.D	06.07.06	Physics
Dr. Kamal Saharia, Ph.D.	22.12.09	Electrostatic Parallel Electric Fields in Plasmas

### A.XI.9 Department of Chemistry

#### Professor

Dr. Mubarak Husain, Ph.D	26.04.97	Synthetic Org. Chemistry
Dr. H.S. Yadav, Ph.D	01.09.01	Organic Chemistry
Dr. P.K. Tripathy, Ph.D & (HoD)	31.03.09	Organic Chemistry
Dr. M.F. Hussain, Ph.D	31.03.09	Physical Chemistry
Dr. K.D. Ram, Ph.D	31.03.09	Physical Chemistry

#### Associate Professor

Dr. Nidhuban Deb, Ph.D	31.10.01	Physical Chemistry
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#### Assistant Professor

Dr. A.K. Gupta, Ph.D	31.03.09	Organic Chemistry
Dr. (Mrs.) K.T. Kamal, Ph.D	31.03.09	Organic Chemistry

Shri N. Ghanashyam Singh, M.Sc. 23.12.09 Physical Chemistry

#### A.XI.10 Department of Mathematics

##### Professor

Dr. J. Choubey, Ph.D.	18.10.93	Theory of numbers
Dr.P.K. Das, Ph.D.	26.04.97	Graphtheory & combinatorics
Dr. S.K. Pandey, Ph.D	31.03.09	Continum Mechanics & Sub-Surface Flow
Dr. L.K. Arora, Ph.D & (HoD)	31.03.09	Special Functions

##### Associate Professor

Dr. A.S. Rai, Ph.D	01.09.93	Gasdynamics, Shock wave MHD
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##### Asstt. Professor

Dr. B.K. Singh, Ph.D	02.08.07	Sampling Technique
Dr. M.M. Dixit, Ph.D	25.07.06	Cont. & Discr. Bessel Wave. Transforms
Shri Jayanta Bora, M.Sc	07.07.06	Pure Mathematics

#### A.XI.11 Department of Humanities & Social Sciences

##### Associate Professor

Dr. Benudhar Nayak, Ph.D	02.08.07	Rural & Agri. Devp.Tribal Dev.& Proj.Mgmt.
Dr. P.R. Parida, Ph.D.	11.01.01	Organisational Behavious/ Managerial effectiveness

##### Assistant Professor

Dr. Shyamalee Sinha, Ph.D & (HoD)	31.03.09	Behavioural Science, HRM, Organisational Behaviour.
Shri Ranendra Prasad, M.Phil	31.03.09	Indian English fiction & literary theory
Shri Raju Barthakur, MA	06.07.06	American Literature

##### Assistant Professor (Adhoc)

Ms. Archana Kumari, MA	21.06.06	English
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#### A.XI.12 Centre for Management Studies

##### Professor

Dr. R.M. Pant, Ph.D	02.08.07	Labour Economics,HRM, Business Policy
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##### Assistant Professor

Shri S. Choudhury, MBA & HoC	18.08.06	MBA
Ms. Bijoylaxmi Sarmah, MBA.	08.12.06	MBA
Ms. Jogita Sorakhaibam, MBA.	05.01.07	MBA

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**SEPARATE AUDIT REPORT  
OF THE  
COMPTROLLER AND AUDITOR  
GENERAL OF INDIA**

**ON THE ACCOUNTS OF THE  
NORTH EASTERN REGIONAL INSTITUTE  
OF SCIENCE AND TECHNOLOGY  
(NERIST) NIRJULI,  
ARUNACHAL PRADESH**

**FOR THE YEAR ENDED  
31 MARCH 2012**

**SEPARATE AUDIT REPORT**  
of the Comptroller & Auditor General of India on the Accounts of the  
North-Eastern Regional Institute of Science & Technology, Nirjuli  
for the year ended 31 March 2012

We have audited the Balance Sheet of North-Eastern Regional Institute of Science & Technology (NERIST), Nirjuli, for the year ended 31 March 2012 the Income & Expenditure Account and Receipt & Payment Account for the year ended on that date under Section 20(1) of the Comptroller and Auditor General's (Duties, Power and Conditions of Service) Act, 1971, read with Rule 5(a) (xv) and Rule 33 (v) of NERIST, framed under Memorandum of Association of NERIST. The audit has been entrusted for the period upto 2011-12. These financial statements are the responsibility of NERIST's management and our responsibility is to express an opinion on these financial statements based on our audit.

2. This Separate Audit Report contains the comments of the Comptroller and Auditor General of India (C&AG) on the accounting treatment only with regard to their classification, conformity with the best accounting practices, accounting standards, disclosure norms, etc. Audit observations on financial transactions with regard to compliance with the Law, Rules and Regulations (Propriety and Regularity) and Efficiency-cum-Performance aspects etc., if any, are reported through Inspection Report/CAG's Audit Reports separately.

3. We have conducted our audit in accordance with auditing standards generally accepted in India. These standards require that we plan and perform our audit to obtain reasonable assurance about whether the financial statements are free from material misstatements. An audit includes examining, on a test-check basis, evidences supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audit provides a reasonable basis for our opinion.

**Based on our audit, we report that:**

- i. We have obtained all the information and explanations, which to the best of our knowledge and belief were necessary for the purpose of our audit;
- ii. The Balance Sheet Income & Expenditure Account and Receipt & Payment Account dealt with by this report have been drawn up in the format approved by the Government of India, Ministry of Finance.
- iii. In our opinion, proper books of accounts and other relevant records have been maintained by the NERIST as required under Rule 33 of NERIST, in so far as it appears from our examination of such books.
- iv. We further report that:

## 1. General

### General Observations on the Format of Annual Accounts/Schedules

1. Schedule attached to Balance Sheet – Earmarked/Endowment Fund (Schedule – 5) – was not shown in the specified format as per “Uniform Format of Accounts for Autonomous Bodies”. The Schedule showed only net figures at the end of the year for each head, whereas as per specified format, the **Balance** at the beginning of the year, **additions** during the year, **expenditure** – Capital and Revenue and **Net Balance** at the end of the year have to be shown separately for each category of fund.
2. The Schedule on Fixed Assets (Schedule – 4) also included “Plan (General) Expenditure” as an item of Fixed Assets and a Depreciation rate of 5% is specified for it. “Plan (General) Expenditure,” per se, is not an item which can be categorized as a Fixed Asset. Assets created out of this fund, if any, should be booked under an appropriate head in “Fixed Assets” or “Works in Progress,” as applicable. Inclusion of a fund among Fixed Assets is not proper.

## 2. Grants-in-Aid

The Institute is financed mainly by grants received from the Government of India (GoI). During the year, the Institute had funds of Rs. 4486.70 lakh, which included Grants-in-Aid of Rs. 3673 lakh received from Government of India, and an Opening Balance of Rs. 813.70 lakh. The Institute also had its own receipts of Rs. 238.16 lakh. From the total available funds of Rs. 4724.86 lakh, the Institute spent Rs. 3971.56 lakh, leaving a balance of Rs. 753.30 lakh as on 31 March 2012.

- v. Subject to our observations in the preceding paragraphs, we report that the Balance Sheet, Income & Expenditure Account and Receipt & Payment Account dealt with by this Report are in agreement with the books of accounts.
- vi. In our opinion and to the best of our information and according to explanations given to us, the said financial statements and subject to the significant matters stated above and other matters mentioned in Annexure to this Audit Report, give a true and fair view in conformity with accounting principles generally accepted in India.
  - a. In so far as it relates to the Balance Sheet, of the state of affairs of the NERIST as on 31 March 2012; and
  - b. In so far as it relates to the Income and Expenditure Account of the surplus for the year ended on that date.

Place – Itanagar

Date – 19<sup>th</sup> November 2012

**for and on behalf of the C & AG of India**

Sd/-

Accountant General  
Arunachal Pradesh

## ANNEXURE

### 1. Adequacy of Internal Audit System

The Institute did not have any Internal Audit Manual. No internal audit of any of the Branches/Departments of the Institute was carried out by the Internal Auditor during 2011-12. The work was confined to pre-audit only.

### 2. System of Physical verification of Fixed Assets

Audit scrutiny revealed that physical verification of assets and inventories was being done annually through a Committee constituted for this purpose.

### 3. System of physical verification of Inventories

Comments offered against Sl. No. 3 above equally apply in the case of physical verification of inventories.

### 4. Regularity in payment of Statutory Dues

The Institute was found regular in payment of statutory dues.

Sd/-  
Accountant General  
Arunachal Pradesh



**NORTH EASTERN REGIONAL INSTTIUTE OF SCIENCE AND TECHNOLOGY  
NIRJULI :: ITANAGAR :: ARUNACHAL PRADESH :: 791109**

**BALANCE SHEET AS ON 31<sup>ST</sup> MARCH, 2012**

Amount in Rs.

<b>CORPUS/CAPITAL FUND AND LIABILITIES</b>	<b>SCHEDULE</b>	<b>CURRENT YEAR</b>	<b>PREVIOUS YEAR</b>
CORPUS/CAPITAL FUND	1	990881355.91	1007148706.23
Earmarked/Endowment Funds	2	1718486.00	1489623.00
Current Liabilities & Provisions	3	25654617.75	24079233.75
<b>Total</b>		<b>1018254459.66</b>	<b>1032717562.98</b>

<b>ASSETS</b>	<b>SCHEDULE</b>	<b>CURRENT YEAR</b>	<b>PREVIOUS YEAR</b>
FIXED ASSETS	4	881340355.16	897501823.23
Investment from Earmarked/ Endowment Funds	5	301847.00	234057.00
Current Assets, Loan, Advances etc.	6	136612257.50	134981682.75
<b>Total</b>		<b>1018254459.66</b>	<b>1032717562.98</b>

Sd/-Registrar i/c  
NERIST

Sd/-Director  
NERIST

**NORTH EASTERN REGIONAL INSTTIUTE OF SCIENCE AND  
TECHNOLOGY**  
**NIRJULI :: ITANAGAR :: ARUNACHAL PRADESH :: 791109**

**SCHEDULES FORMING PART OF BALANCE SHEET  
AS ON 31<sup>ST</sup> MARCH, 2012**

Amount in Rs.		
<b>SCHEDULE-1 CORPUS FUNDS/CAPITAL FUND</b>	<b>CURRENT YEAR</b>	<b>PREVIOUS YEAR</b>
Balance at the beginning of the year	889724888.30	889724888.30
Add: Contribution towards Corpus/Capital Fund:		
Grant-in-aid received from Ministry of Human Resource Development, Department of Education, Govt. of India, vide sanction order No.		
F.No.9-2/2011 TS.IV dtd. 14-09-2011	22400000.00	35000000.00
F.No.9-2/2011 TS.IV dtd. 14-09-2011	5600000.00	20900000.00
F.No.9-2/2010 TS.VII dtd. 07-12-2011	12600000.00	14100000.00
F.No.9-2/2010 TS.VII dtd. 07-12-2011	2800000.00	30000000.00
F.No.9-2/2011 TS.VII dtd. 01-03-2012	9720000.00	
F.No.9-2/2011.TS.VII dtd 01-03-2012	2780000.00	
F.No.9-2/2011 TS.IV dtd. 14-09-2011	5600000.00	
F.No.9-2/2011 TS.VII dtd. 07-12-2011	2800000.00	
F.No.9-2/2011 TS.VII dtd 01-3-2012	2800000.00	
F.No.9-2/2011 TS.VII dtd 01-3-2012	2800000.00	
<b>Total</b>	<b>1077048706.23</b>	<b>989724888.30</b>
Add/Deduct: Balance of net (Income/Expenditure from Income/Expenditure Account)	(-) 86167350.32	17423817.93
<b>Total</b>	<b>990881355.91</b>	<b>1007148706.23</b>

<b>SCHEDULE – 2 EARMARKED/ ENDOWMENT FUNDS</b>	<b>CURRENT YEAR</b>	<b>PREVIOUS YEAR</b>
Opening balance of Funds donated by HE the Governor of Arunachal Pradesh:	229789.00	181157.00
Gold Medal : Topper of Diploma Module	82058.00	62900.00
Student Welfare Funds	1266639.00	1105566.00
Donation for SHRISTI -2009	140000.00	140000.00
<b>TOTAL</b>	<b>1718486.00</b>	<b>1489623.00</b>

<b>SCHEDULE-3 CURRENT LIABILITIES &amp; PROVISIONS</b>	<b>CURRENT YEAR</b>	<b>PREVIOUS YEAR</b>
A: Current Liabilities		
1. Caution Money of Students	10461903.00	9705248.00
2. Security Deposits and others	13215714.75	13283985.75
<b>Total (A)</b>	<b>23677617.75</b>	<b>22989233.75</b>
B: Provisions: Outstanding Expenses, Total (B)	19770 00.00	1090000.00
<b>Total (A+B)</b>	<b>25654617.75</b>	<b>24079233.75</b>

Sd/- Registrar i/c  
NERIST

Sd/-Director  
NERIST

Schedule 4 FIXED ASSETS

NORTH EASTERN REGIONAL INSTITUTE OF SCIENCE AND TECHNOLOGY  
NIRJULI :: ITANAGAR :: ARUNACHAL PRADESH

SCHEDULE FORMING PART OF BALANCE SHEET AS ON 31<sup>ST</sup> MARCH, 2012

		GROSS BLOCK				DEPRICIATION				NET BLOCK	
	Description	Cost/valuation	Addition	Deduction	Cost/valuation	As at the	Addition	Deduction	Total upto	As at the	As at the
		at beginning of the year	during the year	during the year	at end of the year	beginning of the year	during the year	during the year	the year end	current year end	Previous year end
-	<b>A.Fixed Assets</b>	-									
1	Buildings	86 56 66 782.00	2 63 43 537.00	.00	89 22 10 319.00	22 48 56 180.24	3 20 40 530.09	.00	25 68 96 710.33	63 53 13 608.67	64 08 10 601.76
2	Laboratory Equipment	28 31 34 473.46	10 93 411.00	.00	28 42 27 884.46	16 87 15 123.45	1 60 18 709.00	.00	18 47 33 832.45	9 94 94 052.01	11 44 19 350.01
3	Furniture	5 68 15 836.43	33 93 963.00	.00	6 02 09 799.43	2 13 25 484.97	35 49 035.15	.00	2 48 74 520.12	3 53 35 279.31	3 54 90 351.46
4	Vehicles	95 17 152.75	29 06 368.00	20 111.00	1 24 03 409.75	50 41 440.90	6 26 599.66	.00	56 68 040.56	67 35 369.19	44 75 711.85
5	Office Equipment	2 78 30 726.23	2 62 711.00	.00	2 80 93 437.23	1 13 99 312.63	16 43 141.36	.00	1 30 42 453.99	1 50 50 983.24	1 64 31 413.60
6	Sports Equipment	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	Medical Equipment	15 34 895.79	1 07 700.00	.00	16 42 595.79	7 21 767.03	1 13 838.03	.00	8 35 605.06	8 06 990.73	8 13 128.76
8	Hostel Equipment	5 32 381.08	.00	.00	5 32 381.08	4 93 247.24	5478.74	.00	4 98 725.98	33 655.10	39 133.84
9	Library Equipment	9 95 263.00	.00	.00	9 95 263.00	7 84 141.49	29 557.01	.00	8 13 698.50	1 81 564.50	2 11 121.51
10	Guest House Furnishing	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	Guest House Equipment	1 06 705.00	.00	.00	1 06 705.00	95 627.43	1 550.86	.00	97 178.29	9 526.71	11 077.57
12	Musical Instruments	63 593.00	.00	.00	63 593.00	61 983.21	225.37	.00	62 208.58	1 384.42	1 609.79
13	Hostel Furnishing	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	Library Books	5 35 31 679.26	12 11 362.00	.00	5 47 43 041.26	2 90 45 185.62	36 72 974.05	.00	3 27 18 159.67	2 20 24 881.59	2 44 86 493.64
15	Air Conditioner	12 04 273.22	.00	.00	12 04 273.22	10 31 585.52	17 268.67	.00	10 48 855.19	1 55 418.03	1 72 686.70
16	Conference Hall Furnishing	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	Canteen Utensils	25 842.00	.00	.00	25 842.00	21 915.25	392.68	.00	22 307.93	3 534.07	3 926.75
18	Hostel Utensils	55 090.00	.00	.00	55 090.00	54 050.85	145.48	.00	54 196.33	893.67	1 039.15
19	Bicycle	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	Club Equipment	90 200.60	.00	.00	90 200.60	83 779.76	898.92	.00	84 678.68	5 521.92	6 420.84
21	Plan (Gen) activities Expdt	1 38 46 922.00	33 35 624.00	1 71 82 546.00	.00	.00	.00	.00	.00	.00	1 3846 922.00
-	<b>TOTAL OF CURRENT YEAR</b>	<b>1 31 49 51 815.82</b>	<b>3 88 54 676.00</b>	<b>1 72 02 657.00</b>	<b>1 33 66 03 834.82</b>	<b>46 37 30 826.59</b>	<b>5 77 20 345.07</b>	<b>.00</b>	<b>52 14 51 171.66</b>	<b>81 51 52 663.16</b>	<b>85 12 20 989.23</b>
-	<b>B. Building in Progress</b>	4 62 80 834.00	2 92 67 849.00	93 60 991.00	6 61 87 692.00	.00	.00	.00	.00	6 61 87 692.00	4 62 80 834.00

-	<b>TOTAL</b>	1 36 12 32 649.82	6 81 22 525.00	2 65 63 648.00	1 40 27 91 526.82	46 37 30 826.59	5 77 20 345.07	.00	52 14 51 171.66	88 13 40 355.16	89 75 01 823.23
-	Previous Year	1 27 22 53 446.82	15 05 84 830.00	6 16 05 627.00	1 36 12 32 649.82	41 05 37 634.61	5 31 93 191.98	.00	46 37 30 826.59	89 75 01 823.23	86 17 15 812.21

<b>SCHDULE-5 INVESTMENT FROM EARMARKED/ENDOWMENT FUNDS</b>	<b>CURRENT YEAR</b>	<b>PREVIOUS YEAR</b>
1. Investment with SBI Nirjuli, Donation by HE, the Governor of Arunachal Pradesh – Gold Medal : Toppers: of Diploma Module	219789.00	171157.00
2. Investment with SBI, Nirjuli – Institute's Gold Medal	82058.00	62900.00
<b>Total</b>	<b>301847.00</b>	<b>234057.00</b>

<b>SCHDULE-6 CURRENT ASSETS, LOAN ADVANCES ETC.</b>	<b>CURRENT YEAR</b>	<b>PREVIOUS YEAR</b>
<b>A: CURRENT ASSETS</b>		
1) Cash in Hand	3966600.27	3966600.27
2) Imprest	306650.00	306650.00
Total	4273250.27	4273250.27
<b>Bank Balance with Schedule Banks</b>		
a) On Current Account with SBI, Nirjuli (Society for NERIST)	99857168.23	99857168.23
b) NERIST Entrance Exam. A/c	2135037.25	2135037.25
c) AXIS Bank	3723125.00	3723125.00
Total	105715330.48	105715330.48
<b>Total (A)</b>	<b>109988580.75</b>	<b>109988580.75</b>
<b>B: LOANS, ADVANCES AND OTHERS</b>		
1) Loan/Advances	9152276.00	9152276.00
a) Staff		
2) Transfer entry for NEE collection during 2008-10	14847726.00	14847726.00
3) Advances and other amounts recoverable in Cash or kind or for value to be received		
a) On Current Accounts		

I) United India Insurance Co. Ltd.	20000.00	20000.00
II) Advances for purchase of Lab Equipments/Office equipment/Furniture/Lib books	21557672.00	973100.00
III) Project A/c for TEQIP Equipment	1500000.00	
IV) Nodal Centre	450000.00	
V) Out standing Shop Rent	111030.00	---
III) Short Term Deposit (AXIS Bank)	3723125.00	.00
Total (B)	38173716.00	24993102.00
<b>Total A+B)</b>	<b>136612250.50</b>	<b>134981682.75</b>

Sd/- Registrar i/c  
NERIST

Sd/-Director  
NERIST

NORTH EASTERN REGIONAL INSTITUTE OF SCIENCE & TECHNOLOGY  
NIRJULI :: ARUNACHAL PRADESH

**Income & Expenditure Accounts for year ended 31<sup>st</sup> March, 2012**

(Amount. Rs.)

<i>A. Income</i>	Schedule	Current Year	Previous Year
Grant-in-Aid	7	297400000.00	363300000.00
Fees from Students	8	3854560.00	32739709.00
Interest earned	9	1836929.75	2330618.91
Other Income	10	3387754.00	2179000.00
<b>Total (A)</b>		<b>306479243.75</b>	<b>400549327.91</b>
<b>B. Expenditure</b>			
Establishment Expenses	11	294376901.00	274185120.00
Other Administrative Expenses	12	40549348.00	108940389.98
Depriciation		57720345.07	
<b>Total (B)</b>		<b>392646594.07</b>	<b>383125509.98</b>
Balance being excess/deficit of Expenditure over income (A-B)		(-)86167350.32	17423817.93
Balance being deficit/excess carried over to corpus fund		(-)86167350.32	17423817.93

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**Schedule Forming Part of Income and Expenditure Accounts for the Year ended 31<sup>st</sup> Mach 2012**

(Amount – Rs.)

<b>SCHEDULE 7 – GRANTS</b>	<b>Current Year</b>	<b>Previous Year</b>
Ministry of Human Resource Development, Deptt. Of Higher Education, vide Sanction order No.		
i) F.No.9-3/2011 -TS.VII dtd.28.07.2011	100000000.00	67100000.00
ii) F.No.9-3/2011- TS.VII dtd.08.11.2011	100000000.00	67100000.00
iii) F.No.9-3/2011 TS..VII dtd.22.02.2012.	97400000.00	67100000.00
i) F.No.9-3/2011 -TS.VII dtd.28.07.2011		67100000.00
ii) F.No.9-3/2011- TS.VII dtd.08.11.2011		94900000.00
<b>Total</b>	<b>297400000.00</b>	<b>363300000.00</b>

**SCHEDULES 8 –FEES**

1. Entrance Fees	6500653.00	6947428.00
2. Entrance Fees wef 2008-10	(-)14847726.00	14847726.00
3. Annual Fees	12201633.00	10944555.00
<b>Total</b>	<b>3854560.00</b>	<b>32739709.00</b>

**SCHEDULES 9-INTEREST EARNED**

On Short Term Deposit with State Bank of Inida	1836929.75	2330618.91
<b>Total</b>	<b>1836929.75</b>	<b>2330618.91</b>

**SCHEDULES 10- OTHER INCOME**

Miscellaneous Income	3387754.00	2179000.00
<b>Total</b>	<b>3387754.00</b>	<b>2179000.00</b>

**SCHEDULES 11-ESTABLISHMENT EXPENSES**

a) Salary and Wages	231566929.00	213373372.00
b) Bonus	1336612.00	1316569.00
c) Contribution to Provident Fund	25340734.00	23485102.00
d) Liveries and Uniforms	1178946.00	227194.00
e) Book grants to the Faculty	----	59607.00
f) Computer Grants to Faculty	----	207585.00



g) Professional Development Allowance To Faculty	(-)3432484.00	13359807.00
h) Purchase of Medicine for staff	10650151.00	10580884.00
i) Pay and allowance for Kendriya Vidyalaya	14000000.00	11575000.00
j) CPS	6545730.00	---
k) EPF	2261358.00	---
l) GPF	43900.00	---
m) Children Educational Allowance	4885025.00	---
<b>Total</b>	<b>294376901.00</b>	<b>274185120.00</b>

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**SCHEDULES 12-OTHER ADMINISTRATIVE EXPENSES ETC.**

1. Travelling Allowance	3117358.00	4183022.00
2. Printing & Stationery	2866325.00	2824628.00
3. Vehicle running & Maintenance	2158057.00	1433527.00
4. Entrance Examination	2541087.00	5141356.00
5. Advertisement	634569.00	3116087.00
6. Convocation	.00	1591983.00
7. Entertainment	.00	.00
8. Electricity Charges	9713710.00	8116403.00
9. Postage, Telegram & Telephones	357038.00	2646411.00
10. Sports & Extra curricular activities	2027687.00	2886693.00
11. Consumable items for Teaching	1932981.00	3491041.00
12. Annual repairs & Maintenance	10370893.00	15610382.00
13. Miscellaneous expenses	3491723.00	2762889.00
14. Fixed Asset written off	---	.00
15. Depreciation	---	53193191.98
16. Legal Charges	200840.00	510570.00
17. NCC/NSS of students	235532.00	82193.00
18. Maint. Of Lab./ Office Equipments	901548.00	1350013.00
<b>Total</b>	<b>40549348.00</b>	<b>108940389.98</b>

1. Fixed Asset written off	.00	---
2. Depreciation	57720345.07	---
<b>Total</b>	<b>57720345.07</b>	<b>---</b>

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**North Eastern Regional Institute of Science & Technology**  
**NIRJULI-791109 :::: ARUNACHAL PRADESH**

**RECEIPT & PAYMENTS ACCOUNTS FOR THE YEAR ENDED 31<sup>ST</sup> MARCH 2012**

Opening Balance		Current Year	Previous Year			Current Year	Previous Year
a) Cash in hand		39 66 600.27	20 159.27	a) Establishment Expenses	16	29 34 79 901.00	27 51 15 120.00
b) Imprest		3 06 650.00	1 41 400.00	b) Administrative Expenses	17	4 05 59 348.00	5 54 97 198.00
c) Bank Balance	13	10 57 15 330.48	1 60 97 243.57				
2. Grants In-Aid Received from Ministry of HRD				2. Expenditure on fixed Assets & on			
Deptt. Of Education. Govt. of India, New				capital work in progress			
Delhi, Vide Sanction Order No.				a) Purchase of fixed Assets			
				b) Expenditure on capital work in			
Non Plan				Progress	18	6 31 16 549.00	8 89 79 203.00
I) F.No.9-3/2011-TS VII dated 28-07-2011		10 00 00 000.00	6 71 00 000.00	3. Other payments	19	6 75 02 455.00	2 53 67 501.00
II) F.No. 9-3/2011-TS VII dated 08-11-2011		10 00 00 000.00	6 71 00 000.00				
III) F.No. 9-3/2011-TS VII dated 22-02-2012		9 74 00 000.00	6 71 00 000.00	Closing Balance			
Plan (Capital)			6 71 00 000.00	a) Cash in hand		.27	39 66 600.27
I) F.No.9-2/2011-TS.IV dated 14.09.2011		2 24 00 000.00	9 49 00 000.00				
II) F.No.9-2/2011-TS.IV dated 14.09.2011		56 00 000.00		b) Imprest		3 24 650.00	3 06 650.00
III) F.No.9-2/2010-TS.VII dated 07.12.2011		1 26 00 000.00	3 50 00 000.00				
IV) F.No.9-2/2010-TS.VII dated 07.12.2011		28 00 000.00	2 09 00 000.00	Bank Balance	20	9 81 13 891.23	10 57 15 330.48
V) F.No. 9-2/2011-TS.VII dated 01.03.2012		97 00 000.00	3 00 00 000.00	a) <b>In Current Accounts</b>			
VI) F.No. 9-2/2011-TS.VII dated 01.03.2012		27 80 000.00		Details of Bank Balance:			
Plan (General)							
I) F.No. 9-2/2011-TS.IV dated 14.09.2011		56 00 000.00	1 41 00 000.00	1. Plan Fund (Capital) 7227429.00			
II) F.No. 9-2/2011-TS.VII dated 07.12.2011		28 00 000.00		2. Plan Fund(General) 10917454.00			
III) F.No. 9-2/2011-TS.VII dated 01.03.2012		28 00 000.00					
IV) F.No. 9-2/2011-TS.VII dated 01.03.2012		28 00 000.00		3. Non Plan Fund 57186005.91			
3. Interest earned on Short term Deposit with SBI /UTI etc		18 36 929.75	23 30 618.91	4. Students Caution Money 10461903.00			
4.Other Income	14	2 19 79 010.00	3 49 18 709.00	5. Security Deposits, 12321099.59 EMD and others			
<b>5. Any other Receipt</b>	<b>15</b>	<b>6 19 92 274.00</b>	<b>3 81 39 472.00</b>				
<b>Total</b>		<b>56 30 96 794.50</b>	<b>55 49 47 602.75</b>	<b>TOTAL</b>		<b>56 30 96 794.50</b>	<b>55 49 47 602.75</b>

**SCHEDULE FORMING PART OF RECEIPTS AND PAYMENTS ACCOUNTS  
FOR THE YEAR ENDED 31<sup>ST</sup> MARCH, 2012**

(Amount in Rs.)

<b>SCHEDULE 13 -- Opening Balance</b>	<b>Current Year</b>	<b>Previous Year</b>
Cash in hand	3966600.27	20159.27
Imprest	306650.00	141400.00
AXIS Bank A/c	3723125.00	3925620.00
State Bank of India (NEE A/c)	2135037.25	91867.25
State Bank of India (Society for NERIST A/c)	99857168.23	12079756.32
<b>Total</b>	<b>109988580.75</b>	<b>16258802.84</b>

**SCHEDULE 14 -- Other Income**

i)	Fees from Students	10944555.00	10944555.00
ii)	Entrance Examination	6947428.00	6947428.00
iii)	Entrance Examination (2008- 09 & 2009-10 )	14847726.00	14847726.00
iii)	Miscellaneous Receipt	2179000.00	2179000.00
iv)	Consultancy Fee	--	--
<b>Total</b>		<b>34918709.00</b>	<b>34918709.00</b>

**SCHEDULE 15--- Any Other receipts**

i	Caution Money from Students	2685800.00	2665071.00
ii)	Advances Received from Staff	2991747.00	3346310.00
iii)	Security Deposit	4152469.00	4544715.00
iv)	Earnest Money Deposit	1600.00	3966600.00
v)	Students Welfare Fund	211073.00	170070.00
vi)	Alumani association etc	116500.00	23158530.00
vii)	Loan/ advance to Project A/c ,Nodal Centre etc	51833085.00	
viii)	Uncashed Cheques credited in A/c	.00	<b>288176.00</b>
<b>Total</b>		<b>61992274.00</b>	<b>38139472.00</b>

**SCHEDULE 16—Establishment Expenses**

i)	Salary & Wages	231566929.00	213373372.00
ii)	Bonus	1336612.00	1316569.00
iii)	Contribution to Provident Fund	25340734.00	23485102.00
iv)	Liveries & Uniforms	1178946.00	227194.00
v)	Book grants to the Faculty	---	59607.00
vi)	Purchase of Medicine for Staff	9753151.00	11510884.00
vii)	Salary & Wages for Kendriya Vidyalaya	14000000.00	11575000.00
viii)	Computer Grant for Faculty	---	207585.00
ix)	Professional Development Allowance to Faculty	(-)3432484.00	13359807.00
x)	CPS	6545730.00	---
xi)	EPF	2261358.00	---
xii)	GPF	43900.00	---
xiii)	Children Educational Allowances	4885025.00	---
<b>TOTAL</b>		<b>293479901.00</b>	<b>275115120.00</b>

Sd/- Registrar i/c  
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**SCHEDULE FORMING PART OF RECEIPTS AND PAYMENTS ACCOUNTS FOR THE  
YEAR ENDED 31<sup>ST</sup> MARCH, 2012**

(Amount in Rs.)

<b>SCHEDULE 17 -- Other Administrative Expenses</b>		<b>Current Year</b>	<b>Previous Year</b>
i)	Consumable item for Teaching	1932981.00	3491041.00
ii)	Entrance Examination	2541087.00	5141356.00
iii)	Printing & Stationary	2866325.00	2824628.00
iv)	Traveling Allowances	3117358.00	4183022.00
v)	ARMO ( Vehicle)	2158057.00	1433527.00
vi)	Advertisement	634569.00	3116087.00
vii)	Annual Repair & Maintenance	10370893.00	15610382.00
viii)	Postage, Telephone & Telegram, LAN/WAN (Maint.)	357038.00	2646411.00
ix)	Electricity Charges	9623710.00	8016403.00
x)	Entertainment	.00	0.00
xi)	Office Expenses/Misc. Expenses	3591723.00	2612889.00
xii)	Sports, Extra Curricular Activities & Study Tour of students	2027687.00	2886693.00
xiii)	Legal Charges	200840.00	510570.00
xiv)	NCC/NSS	235532.00	82193.00
xv)	Convocation	.00	1591983.00
xvi)	Maintainance of Lab./ Office Equipment	901548.00	1350013.00
<b>Total</b>		<b>40559348.00</b>	<b>55497198.00</b>

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Sd/-Director  
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<b>SCHEDULE 18A -- Expenditure on Capital Works in Progress</b>		<b>Current Year</b>	<b>Previous Year</b>
i)	P.W.D./ .,T.K.Constrn Co. etc for constn of Transit Hostel, Girl,s Hostel etc	19987692.00	28580834.00
ii)	Other Contractors	9280157.00	27369041.00
iii)	Refund amount from Comondant 756,BRTF , GREF being unspent balance for construction of Academic block'A', 'C', Diploma and certificate block	--	(-)15155685.00
iv)	N.P. Constrn Co. being booked amount for construction of Auditorium	---	(-)12000000.00
<b>Total</b>		<b>29267849.00</b>	<b>28794190.00</b>

<b>SCHEDULE 18B -- Expenditure on the Purchase of Lab/Workshop equipments</b>		<b>Current Year</b>	<b>Previous Year</b>
Equipments			
i)	Mechanical Engg. Department	354315.00	1356300.00
ii)	Applied Science Department	(-)152216.00	1584226.00
iii)	Electrical Engg. Department	(-)525592.00	4332161.00
iv)	Chemistry Department	62679.00	1188725.00
v)	Computer Science & Engg. Department	522175.00	1449522.00
vi)	Agricultural Engg. Department	44490.00	2553209.00
vii)	Humanities & Social Science Department	63104.00	96310.00
viii)	Physics Department	172517.00	1094106.00
ix)	E.T.Cell	376227.00	139895.00
x)	CMS	130498.00	378084.00
xi)	ACCF	.00	.00
xii)	Electronics & Commn. Engg.	(-)397344.00	2265563.00
xiii)	Civil Engg. Department	288782.00	2283608.00
xiv)	CRF	50775.00	186667.00
xv)	Maths	96344.00	458636.00
xvi)	CATARD	6657.00	179381.00
xvii)	Medical Equipment	107700.00	25000.00
xviii)	LAN/WAN	.00	7991640.00
xix)	Office Equipment	262711.00	2982272.00
<b>Total</b>		<b>1463822.00</b>	<b>30545305.00</b>

<b>SCHEDULE 18C</b>		<b>Current Year</b>	<b>Previous Year</b>
Library Books/Journals			
i)	Library Books/Journals	<b>1211362.00</b>	5020853.00

<b>SCHEDULE 18D</b>		<b>Current Year</b>	<b>Previous Year</b>
Furniture & Fixtures			
i)	Furniture	<b>2886257.00</b>	9994545.00

<b>SCHEDULE 18E</b>	<b>Current Year</b>	<b>Previous Year</b>
Vehicle	<b>2886257.00</b>	777388.00

<b>SCHEDULE 18F</b>	<b>Current Year</b>	<b>Previous Year</b>
Plan (General ) Expenditure	<b>3335624.00</b>	13846922.00

<b>SCHEDULE 18F</b>	<b>Current Year</b>	<b>Previous Year</b>
Furniture & Fixtures (Advance)	4322315.00	--
Lab. Equipment (Advance)	14491455.00	--
Office Equipment (Advance)	1213455.00	--
Lib.Books (Advance )	1530447.00	--
<b>Total</b>	<b>21557672.00</b>	--
<b>Grand Total (A to G)</b>	<b>63116549.00</b>	<b>88979203.00</b>

<b>SCHEDULE 19 -- Other payments</b>		<b>Current Year</b>	<b>Previous Year</b>
i)	Advances to Staff & others	4651360.00	3180000.00
ii)	Security Deposits	2818319.00	4498792.00
iii)	Caution Money of Students	1929145.00	1424065.00
iv)	Transfer Entry for NEE collection wef 2008-10	0.00	14847726.00
v)	Investment (Short Term Deposit receipt of Axis Bank	3723125.00	0.00
vi)	Student Welfare fund	50000.00	76393.00
vii)	Alumani Association	0.00	463640.00
viii)	Loan to Project A/c, Nodal Centre	51625000.00	876885.00
ix)	Earnest Money	2644400.00	0.00
x)	Uncashed Cheques	61106.00	0.00
<b>Total</b>		<b>67502455.00</b>	<b>25367501.00</b>

<b>SCHEDULE 20 -- Closing Balance</b>		<b>Current Year</b>	<b>Previous Year</b>
i)	Cash in hand	0.27	3966600.27
ii)	Imprest	324650.00	306650.00
iii)	AXIS Bank	4226382.00	3723125.00
iv)	State Bank of India (NEE A/C)	2193851.00	2135037.25
v)	State Bank of India(Society for NERIST)	91693658.23	99857168.23
<b>Total</b>		<b>98438541.50</b>	<b>109988580.75</b>

Sd/- Registrar i/c  
NERIST

Sd/-Director  
NERIST

### Accounting Policy and Notes



1. On Accounting Policy of the Institute, we follow the procedure as:
  - a) The Institute followed” Mercantile procedure “for maintaining its accounts
  - b) The Institute has been following Bank accounts as
    - i) Society Account of NERIST
    - ii) Project Account of NERIST
    - iii) Contributory provident Fund Account of NERIST
    - iv) Scholarship Account of NERIST (General scholarship as well as GATE Scholarship)
    - v) Contributory Pension Scheme Account of NERIST
    - vi) We maintained a separate NEE account/Axis bank account but it is a subsidiary of society Account of NERIST
  - c) Account of the Institute are prepared based on GFR/CCS/CTR/ and other rules/guide lines of the Government of India.
  - d) The Institute has no audit manual of its own, the rules of the Central Government is following in carrying out internal

## 2. Provision of out standing expenses/out standing dues

Provision of out standing expenses/out standing dues under Income and Expenditure A/c are as follow

SI No.	Heads	Current year	Previous year	Remarks
1	Medicine	927000.00	30000.00	Outstanding expenses
2	electricity	750000.00	6600000.00	-do-
3	Administrative Expenses	300000.00	400000.00	-do-
4	Shop Rent	111030.00	---	Outstanding Dues

3. As per Instruction of Audit team (previous year), NEE Collection during 2008-10 amounting Rs 1, 48, 47,726.00 has been excluded from schedule 6 and schedule 8.
4. As per Instruction of audit team (previous year), exhibition of Depreciation has been saperated from administrative expenses.
5. Depreciation has been used during more than one accounting period.