TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME (TEQIP-II)

PHASE-II

REVISED INSTITUTIONAL DEVELOPMENT PROPOSAL

(provisional to be approved by Director and BOM)

for

Sub-component 1.1: Strengthening Institutions to improve learning outcomes and employability of graduates.

submitted

by

North Eastern Regional Institution of Science & Technology (NERIST),
(Deemed University under Section 3 of UGC Act 1956)
Nirjuli, Itanagar- 791 109
Arunachal Pradesh
June 2015

1. INSTITUTIONAL BASIC INFORMATION

1.1 Institutional Identity

- Name of the Institute: North Eastern Regional Institute of Science and Technology
- Is the Institution AICTE approved?: Yes
- Furnish AICTE approval No.: F-29-1/-III/RC-CHX/93 dt.20/6/93 & F.No.780-70-001(E)/ET/97 dated 02/5/2008
- Type of Institution: Central Govt. Funded Institution, under MHRD, Govt. of India, New Delhi.
- Status of Institution: Deemed to be University (since May 2005)
- Name of Head of the Institution: Prof. P.K.Das, Director

1.2 Academic Information :

- Engineering UG and PG Programmes offered in Academic year 2014 (upto March 31st, 2014)

Sl.No.	Title of Programme	Level (UG, PG, Ph.D)	Duration (years)	Year of Starting	AICTE Sanctioned Annual Intake	Total Student Strength
	Diploma Module		2	1988	30 each discipline	811
	Degree Module (Technology)		2	1990	30 each discipline	
2	M.Tech.(Full time and part time)	Post Graduate	2	2006	18 in each specialisation	164
3	Ph.D. (Part time and Full time)	Ph.D.	3 / 4	2007	Every semester	64
				2009	Every semester	
	Total					1039

- Accreditation Status of UG Programmes :

Title of UG programme being offered	Whether eligible for accreditation or not	Whether accredited as on 31st March 2010	Whether "Applied for" as on 31st March 2015
Civil Engineering	Yes	No	Applied
Mechanical Engg.			
Electrical Engg.			

Electronics & Comm. Engg.			
Computer Sc.&Engg.			
Agricultural Engg.			

- Accreditation Status of PG Programmes :

Title of PG programme being offered	Whether eligible for accreditation or not	Whether accredited as on 31st March.2015	Whether "Applied for" as on 31st March 2015
M.Tech.(Full time)	Yes	No	Applied for two M.Tech. courses

1.3 Faculty (Engg) Status (Regular/On-contract Faculty as on March 31, 2014)

Faculty Rank	No. of sanctioned Regular Post	Present Status: Number in Position by Highest Qualification												Total Number of regular faculty in Position	Total Number of Vacancies	Total Number of contract faculty in Position
		Doctoral Degree				Masters Degree				Bachelor Degree						
		Engg. Disciplines		Other Disciplines		Engg. Disciplines		Other Disciplines		Engg. Disciplines		Other Disciplines				
		R	C	R	C	R	C	R	C	R	C	R	C			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 (3+5+7+ 9+11+13)	16 (2-15)	17 (4+6+8+ 10+ 12+14)
Professor	23	01	4	03	11	-	-	-	-	-	-	-	-	- 04	19	Nil
Asso.Prof	48	05	13	02	11	-	01	-	-	-	-	-	-	- 07	26	Nil
Asstt.Prof.	128	10	-	10	-	43	-	06	-	-	-	-		69	30	Nil
Total	199+ 1													80	75	
*Faculty of sciences,and humanities																

1.4 Baseline Data

S. No.	Parameters	
1	Total strength of students in all programmes and all years of study in the year 2013-14	1680
2	Total women students in all programmes and all years of study in the year 2013-14	461
3	Total SC students in all programmes and all years of study in the year	107

	2013-14	
4	Total ST students in all programmes and all years of study in the year 2013-14	702
5	Total OBC students in all programmes and all years of study in the year 2013-14	204
6	Number of fully functional P-4 and above level computers available for students in the year 2013-2014	650
7	Total number of syllabus text books and reference books available in library for UG and PG students in the year 2013-14	95,657
8	% of UG students placed through campus interviews in the year 2013-14	13%
9	% of PG students placed through campus interviews in the year 2013-14	0%
10	% of high quality under graduates (75% above marks) passed out in the year 2013-2014	38 %
11	% of high quality post graduates (75% above marks) passed out in the year 2013-2014	43 %
12	Number of research publications in Indian refereed journals in the year 2013-2014	18
13	Number of research publications in International refereed journals in the year 2013-2014	31
14	Number of patents obtained in the year 2013-2014	Nil
15	Number of patents filed in the year 2013-2014	Nil
16	Number of sponsored research projects completed in the year 2013-2014	01
17	Transition rate of students in percentage from 1st year to 2nd year in the year 2013-14 for (i) all students (ii) SC (iii) ST (iv) OBC	55.88 %
18	IRG from students fee and other charges in the year 2013-14 (Rs. In lacs)	169.05

19	IRG from commercialization of R&D products and other sources in the year 2013-14 (Rs. In lacs)	39.7
20	Total IRG in the year 2013-14 (Rs. In lacs)	208.75
21	Total recurring expenditure in the year 2013-14 (Rs. In lacs)	624.55

2. INSTITUTIONAL DEVELOPMENT PROPOSAL (IDP)

2.1 Give the executive summary of the IDP (maximum half page)

NERIST was established as project by NEC and subsequently it was transferred to MHRD as a CFTI since 1994. It was conferred deemed to be University status in May 2005. PG and Research programmes were started since 2007 and first Ph.D. was awarded in second Convocation in 2010. At present 6 B.Tech. and 6 M.Tech. programmes are in operation. Academic Council approved 4 more PG programmes in Engineering and envisaged to start from July 2011. NERIST is catering to the technical man power needs of 8 North Eastern states. It has large percentage (45%) of SC/ST students. The teachers are highly qualified and from different parts of India. NERIST would like to increase its out put in M.Tech and Ph.D. scholars in future to the requirements of the region and national needs. The UG laboratories and workshops were well established and PG laboratories need to be developed. As far as employability of graduates is concerned the progress is not very satisfactory. A Professor-in- Charge was appointed to look after the training and employability of graduates. It is under progress. In the coming four years it has aggressive plan to strengthen PG and Research, and employability of graduates as mentioned in Tables 1 to 5. Training need analysis for all categories and student feedback survey were conducted and requirements are presented under various sub-sections of this proposal.

NERST has a Society, Board of Management as per UGC guidelines and Academic council. NERIST TEQIP-II proposal was approved by 69th BoM meeting on 3rd August 2010. With the assistance of this Rs.10 crores the Institute development proposal mentioned will be fulfilled to the expectations of NPIU and MHRD, Govt. of India in catering the specific technical manpower needs of the region and the nation.

2.2 * Provide details of SWOT analysis carried out (enclosed in Annexure I)

* Based on SWOT analysis, provide the strategic plan developed for Institutional development.

* Attach the summary of SWOT analysis and show how the results of SWOT analysis are linked to key activities proposed in the proposal.

Summary of SWOT analysis is presented in Annexure I. The requirements of the students, faculty, technical staff and non-technical staff and academic accreditation requirements etc. are presented at sub-sections 2.4 to 2.7

2.3 State specific objectives (Annexure II) and expected results of your proposal in terms of "Institutional strengthening and improvements in employability and learning outcomes of graduates". These objectives and results should be linked to the SWOT analysis.

2.4 Provide an Action Plan for: (max. 1 page each)

(a) Improving employability of graduates

i. Training and placement section was created to train our UG students in various industries as a part of curriculum.

ii. A professor-in-charge is the head of T&P section.

iii. Various industries were invited to the campus for campus interviews.

iv. Defense services recruitment agencies were contacted to conduct interviews through university entry scheme. These year around 58 were short-listed.

v. Around 18 industries visited so far and around 30 Engineering graduates were employed.

vi. Job melas will be organized in future

vii. Our students may be allowed go near by side like Guwahati for attending written test/ interviews/ for various industries visiting to IIT, Guwahati.

viii. Practice in GD, Personal Interviews, Counseling for written test, procedure for applying will be given through departmental T&P counselors.

ix. To organize lectures from top management industries

S. No.	Activities	2011-12	2012-13	2013-14	2014-15	2015-16
1	Campus interviews	Oct-April	Oct-April	Oct-April	Oct-April	Oct-April
2	Job Mela	Feb-March	Dec-Jan	Dec-Jan	Dec-Jan	Dec-Jan
3	Lectures from industries	5	15	15	10	10
4	T&P Counseling (additional coaching)	Summer/ Winter semester break	Summer/ Winter semester break	Summer/ Winter semester break	Summer/ Winter semester break	Summer/ Winter semester break

5	NCC/ Sports	Additional training for C-Certificate	Additional training for C-Certificate	Additional training for C-Certificate	Additional training for C-Certificate	Additional training for C-Certificate
6	Approaching industries for top management lecture in selected industries	One/two weeks	One/two weeks	One/two weeks	One/two weeks	One/two weeks
7	Organizing all India industrial tours	20 days in December	20 days in	20 days in December	20 days in December	20 days in December

2.4 (b) Increasing learning outcomes of students

i. To develop and compile lecture notes subject wise.

ii. To strengthen departmental libraries.

iii. To increase library facilities, procurement of learning materials.

iv. To encourage e-learning by providing internet facilities in hostels. Wireless network was started already in the campus and it would be further strengthened.

v. To conduct student feed-back system every semester and to take necessary improvements based on student requirement

vi. To conduct extra coaching classes for weaker students

vii. To provide additional coaching for GATE/CAT/MAT and other competitive examinations

S. No.	Activities	2011-12	2012-13	2013-14	2014-15	2015-16
1	Procurement of book/ e- materials	July-Oct.	July-Oct.	July-Oct.	July-Oct.	July-Oct.
2	Strengthening Departmental Libraries	Annual budget allocation	Annual budget allocation	Annual budget allocation	Annual budget allocation	Annual budget allocation
3	Development of study materials	June-July summer vacation	June-July summer vacation	June-July summer vacation	June-July summer vacation	June-July summer vacation
4	Extra classes for weak students	Saturday evening up-to 9 p.m.	Saturday evening up-to 9 p.m.	Saturday evening up-to 9 p.m.	Saturday evening up-to 9 p.m.	Saturday evening up-to 9 p.m.

5	Addl. Coaching GATE	June-July summer vacation & Mon.- Fri. day evening	June-July summer vacation & Mon.- Fri. day evening	June-July summer vacation & Mon.- Fri. day evening	June-July summer vacation& Mon.- Fri. day evening	June-July summer vacation& Mon.- Fri. day evening
6	Student feed-back collection system	November /April	November /April	November /April	November /April	November /April
7	E-learning sources	To provide wireless LAN	To provide wireless LAN	To provide wireless LAN	To provide wireless LAN	To provide wireless LAN

2.4 (c) It is an autonomous institution

2.4(d) Accreditation processes initiated already for UG programmes and will be completed by next year end itself. 100 % accreditation for both UG and PG will be completed before 2016 end.

2.4 (e) Curriculum, Syllabi and Pedagogy are periodically revised. Latest revision was in 2009.

2.4 (f) Improving interactions with industries

North Eastern region has less number of industries. The industries existed are PSU of oil, natural gas, hydro-power etc.

i. To organize one day industrial tours for students.

ii. To invite industry specialist for delivering lectures.

iii. To nominate industries specialist in Board of Studies, Academic Council and B.O.M. (already there)

iv. To organize industry tours for pre-final year students for one month to 50 days (already there in the curriculum).

v. To encourage industrial projects for students through sponsorship.

vi. To start Entrepreneur Development Programmes

vii. To accelerate business incubation centre (BIC) activities with financial assistance from Ministry of Small and Medium Enterprises, Delhi.

viii. To initiate Industry institute interaction cell activities, which was formed in August 2010.

S. No.	Activities	2011-12	2012-13	2013-14	2014-15	2015-16
1	One day industrial tour	5	20	20	20	20
2	Lecture from industry managers	5	20	20	20	20
3	Organize study tour	20 days in December	20 days in December	20 days in December	20 days in December	20 days in December
4	Industrial training	30-40 days in summer vacation	30-40 days in summer vacation	30-40 days in summer vacation	30-40 days in summer vacation	30-40 days in summer vacation
5	Student's industry projects	Few	More in number	More in number	More in number	More in number
6	Industrial consultancy	SRIC was established	SRIC activity to be increased	SRIC activity to be increased	SRIC activity to be increased	SRIC activity to be increased
7	Entrepreneurship training	Business Incubation Centre was formed in 2009. Training programs started in Bio-diesel plantation for farmers	BIC training programs to be decided based on need of Entrepreneurs and fund availability from MSME.	BIC training programs to be decided based on need of Entrepreneurs and fund availability from MSME.	BIC training programs to be decided based on need of Entrepreneurs and fund availability from MSME.	BIC training programs to be decided based on need of Entrepreneurs and fund availability from MSME
8	IIIC program	Established IIIC cell in August 2010. 5 programmes planned for students.	Activities will be accelerated soon. 15 programmes will be conducted for faculty, technical staff and students.	20 programmes will be conducted for faculty, technical staff and students.	10 programmes will be conducted students.	10 programmes will be conducted students

2.4 (g) NERIST secured more than Rs. 9 crores projects. Sponsored Research Industrial Consultancy (SRIC) was established. A Coordinator at Associate Professor level has been looking after this section.

i. To encourage faculty members for research through M.Tech. and Ph.D.

ii. To encourage research through providing seed money for young faculty.

iii. To sponsor faculty for Ph.D. in other countries for research.

iv. To take up consultancy projects under MODROB, CISR, DRDO, DST, UGC, AICTE etc.

2.5 Provide an action plan for academically weak students.

NERIST has large number of SC/ST students and it is highest in India. OBC reservation was already implemented. At present no separate coaching is provided for GATE, CAT etc. Separate book bank was created for SC/St students. Some fund was collected from NEC, Shillong.

i. To identify weaker students and conduct extra classes during evening/ weekends

ii. To conduct tutorial classes with special attention

iii. To council the weak students and monitoring their progress

iv. To form quality circles course wise

S. No.	Activities	2011-12	2012-13	2013-14	2014-15	2015-16
1	Evening classes for weak students	March-May	Jan-Dec	Jan-Dec	Jan-Dec	Jan-Dec
2	Quality circles course wise	Once in a month	Once in a month	Once in a month	Once in a month	Once in a month
3	Entrepreneurial develop ment progra	Twice in a semester.	Twice in a semester.	Twice in a semester.	Twice in a semester.	Twice in a semester.
4	Invited lectures from alumni of NERIST	Once in a semester	Once in a semester	Once in a semester	Once in a semester	Once in a semester
5	Business skill Development programmes	Once in a year for 15 days	Thrice in a year for 15 days each.	Thrice in a year for 15 days each.	Thrice in a year for 15 days each.	Thrice in a year for 15 days each.

2.6 Action plan for PG

PG programmes were started after 2007. These need to be strengthened.

i. To provide scholarship for non-GATE students.

ii. To provide additional grant for Labs.

iii. To start new PG programs one each with project funds.

iv. To obtain accreditation for PG programme.

v. To strengthen existing Laboratories.

vi. To admit existing faculty with B.Tech. qualification to PG programme.

vii. To admit near by polytechnic and engineering college faculty to PG programme.

S. No.	Activities	2011-12	2012-13	2013-14 and 14-15	2015-16
1	To strengthen existing PG Courses: M.Tech. (Computer Integrated Manufacturing & Automation) M.Tech. (Farm Machinery) M.Tech. (Environmental Science and Engineering) M.Tech. (Information Technology) M.Tech. (Power Systems) M.Tech. (Computer Engineering)	Fund allocated.	Fund allocated.	Fund allocated.	Fund allocated.
2	Starting new M.Tech. programs M.Tech (Soil Conservation) M.Tech (Thermo-Fluid Engg.) M.Tech. (Geo-technical engg.) M.Tech. (CSE)	Proposals were approved by Academic Council	2 Mechanical & Agricultural Engg.	2 Civil Engg. and Electronics and Communication Engg.)	

3	M.Tech. for existing B.Tech. faculty	Initiated already with Fees concession.	Partial financial support will be considered.	Partial financial support will be considered.	Partial financial support will be considered.
4	M.Tech. for polytechnic teachers/ nearby industries or Govt. Dept.	Enrolment started.	Enrolment will be accelerated.	Enrolment will be accelerated.	Enrolment will be accelerated.
5	M.Tech. local industries and Govt. depts..	Enrolment started.	Enrolment will be accelerated.	Enrolment will be accelerated.	Enrolment will be accelerated.

2.7 Faculty development Plan

i. To organize curriculum workshop with external experts from IITs, NITTTR

ii. To develop training program based on TNA for faculty in subject domain, pedagogy and research capabilities

iii. Sponsoring faculties to advanced research labs/ IITs / IISc

S. No.	Activities	2011-12	2012-13	2013-14	2014-15	2015-16
1	Basic pedagogy workshop	6	2	2	-	-
2	Advanced pedagogy	2	6	-	-	-
3	Domain knowledge STTP	10	24	24	6	6
4	National Seminars	-	6	6	6	6
5	National workshop	-	3	3	3	3
6	Sponsoring for M.Tech / Ph.D.	-	5	5	5	5
7	Sponsoring advanced research in abroad	-	4	2	-	-
8	Training at industries for 2 to 4 months	-	10	10	10	10

2.8 Provide an action Plan for training technical staff and other staff in functional areas.

i. To provide training in latest equipments in workshops.

ii. To provide training in Lab. equipments.

iii. To provide training in experimental techniques in Laboratories.

iv. To provide training in evaluation in Laboratory experiments.

v. To provide training in evaluation of workshop jobs.

vi. To provide training in central workshops and CNC/CAM/CAD systems.

vii. To provide training in engineering areas of computer based systems.

viii. To provide training in operation skills of software used in the depts.

S. No.	Activities	2011-12	2012-13	2013-14	20114-15
1	Training in modern equipments for workshops.	3	5	2	-
2	Training in modern equipments for labs.	2	4	2	-
3	Training in experimental conducting and evaluation of labs.	1	3	2	-
4	Training in experiments conducting and evaluation for workshop courses.	2	4	2	2
5	Training for software operation in workshop courses.	2	5	5	2
6	CAD/CAM/CIM systems training programme.	1	3	4	2
7	Training in advanced institutes/ Research labs/ industries.	2	4	3	1

2.9 Describe relevance and coherence of Institutional Development Proposal with states / National /Industrial/ Economic development Plan.

The institute was established by NEC to cater the technical / scientific manpower requirements of North Eastern region (7 states) and subsequently Sikkim state was added in the year 2007. Emphasis was made to the requirement of states in catering Certificate, Diploma, Degree, PG and Research needs of the region. North Eastern states were also started new 7 NITs and several Polytechnic colleges recently, so this project will also help to create skilled persons (faculty and staff) for those institutes in this region and also for different oil and hydro-power projects.

2.10 Describe briefly the participation of departments/ faculty in the proposal preparation and implementation.

All the engineering depts. were participated in conducting SWOT analyses, TNA and labs and workshop requirements etc. in the project preparation stage. Project implementation will be started after final approval of the project. All engineering departments were consulted, requirements are projected, training needs analyzed and action plans were prepared with the help of departmental faculty and staff.

2.11 Describe the Institutional project implementation arrangements.

i. All engineering departments were informed about objectives of TEQIP – II.

ii. TEQIP –II cell was established.

iii. BOM permission was obtained.

iv. Institute Industry Interaction Cell was formed.

v. Training need analyses for all staff, faculty and administration were conducted and action plans were prepared based on the requirements.

vi. Student feedback forms were designed, feedback collected, needs were analyzed, and action plans will be under progress.

vii. Various committees for TEQIP-II were formed to implement the project as per guidelines.

viii. Equipments required for various labs/ workshops were prepared.

ix. Arrangement to start new M.Tech. programmes were completed, Academic council approvals were obtained.

x. Existing M.Tech. programme laboratories will be strengthened from project funds.

xi. Student coaching for weak students, T&P activities for employability were strengthened and more will be done with project fund.

xii. M.Tech. and Ph.D. enrolments will be increased in phased manner.

xiii. Provision for scholarships was made for M.Tech and Ph.D. students.

xiv. Agencies for supply of learning resources, World Bank systems were contacted.

xv. Training resource persons have been identified.

2.12 Provide an Institutional Budget in Table-1

2.13 Provide category wise expenditure details in Table-2

2.14 Provide targets against the deliverables listed in Table-3.

2.15 Indicate Action Plan to ensure that the project activities would be sustained after the end of the project.

2.16 Provide procurement plan for the first 18 months for goods/ civil works in Table -4 and consultancy services including pedagogical training in Table-5 with budget and timeframe.

2.17 Provide any other information related to special academic achievements as given in eligibility proposal of the Institution.

First Ph.D. degree from Comp. Sc. & Engg. department was conferred and awarded during 2nd Convocation of NERIST on Dt.4.8.2010. Ph.D. (PT) intake in engineering was doubled and M.Tech. (PT) & M.Tech. (full time) strength increased to 45 from 14 during the current academic year 2010-11. This enrolment process will accelerate the production of M.Tech. students and Ph.D. scholars during the project period. Advt. for faculty requirement was given in October 2010 for recruitment. T&P initiated to invite more companies for campus interviews. Four new M.Tech. programmes were approved by academic council and will be started from July 2011.

Date: June 30, 2015
Itanagar.

(Prof. Saibal Chatterjee)
Coordinator (TEQIP), NERIST
Nirjuli, Arunchal Pradesh-791 109
e-mail: saibaldada@gmail.com
Tel.: 0360-2257401-6148/6052
Mobile: 09862035879

(Office Seal)

(Prof. P.K.Das)
Director, NERIST
Nirjuli-791 109
E-mail: dir.nerist@gmail.com
pkd@yahoo.co.in
0360-2257584, 2258534,
0360-2258533 (Fax)
09436058268 (Mobile)

Annexure I

SWOT Analysis of NERIST

1. STRENGTHS:

- Institute having patronage of eight states for student intake.
- NERIST is committed in providing high quality undergraduates and postgraduate education that can lead to innovative master's and Ph.D. degrees and effective employability.
- Qualified faculty with a good blending of the well experienced and young faculty members.
- Pioneer of Modular Pattern of Technical Education, which is unique in the whole country, giving more exposure to subtle details of a technical subject to the students compared to conventional technical education.
- Well established laboratories, workshops and library for UG level students.
- Majority of the faculty members are having PG degrees from different IITs, IISc, NITs and other institutions of National Importance.
- Availability of basic and State-of-the art equipments/ laboratories.
- The Departments provide Consultancy and advisory services to various developmental projects in the NE region, particularly to Arunachal Pradesh
- Excellent teacher-student relationship.
- Good internet connectivity available.
- A well established Training and Placement Cell, facilitating training, and Institute-Industry linkage.
- Continuing Education Cell, providing scope for working personnel's to update their knowledge with the experts' faculty of NERIST.
- A very good reputation that has made NERIST a 'Brand' in North East India.
- NERIST can support regional and national development, contribute to good quality educational services and research and innovation.
- Training need analysis for all categories of employees was conducted and necessary action plans were prepared.
- NERIST TEQIP-II was approved by BoM.

- All the engineering departments were involved in project plan preparation.
- Students feed back forms were prepared and feedback opinions were collected and analysed. Action plans were prepared.
- Unfilled vacancies were recruited at various levels and effort is on for the recruitment of the rest.

2. WEAKNESSES:

- Lack of sufficient numbers of faculty members for running existing UG/ PG programmes.
- Lack of sufficient numbers of technical Assistants/ Senior Technical Assistants to man all the laboratories.
- Lack of specialized laboratories.
- Each department is constrained to offer only one M.Tech. programme at present.
- Lack of sufficient numbers of Post Graduate Courses, relevant to the NE region, due to insufficient manpower and fund.
- Inadequate availability of built-up space. No built-up space for faculty chambers, central workshops, boiler house in mechanical engineering, and earth quake engineering laboratory in civil engineering are not existing at present.
- Non-existence of experimental farm for Agricultural Engg.
- Poor intake of students due to reservation for each of NE state.
- Lack modern classrooms.
- Lacking AMC for equipments.
- Absence of some basic facilities on the campus like LPG store, shopping centre etc.

3. OPPORTUNITIES:

- Look East policy of Government of India opens multiple opportunities for this premier Institute of the region.
- Special attention to North East in general and Arunachal Pradesh in particular opens new horizons for this Institute in terms of sprucing up and expanding its

capabilities to create suitable and highly skilled technical manpower to meet the ever growing demands.

- Opportunities to act as catalyst in the development process of the country in general and the NE region in particular.
- Opportunities to act as expert agency to impart technical advice to the different Government / Private organizations with a greater degree of participation.
- The Institute being situated in the North-East India, there are lot of research scope in unexplored areas. Projects submitted to national funding agencies should be given special consideration.
- Unique flexibility available in the structure of academic curriculum gives the students capability to study as per their requirement.
- Scope of good cultural interaction as students come from different states with different cultural background.
- NERIST's reputation provides good platform for constructive interaction/ mutual collaboration with state and/or central agencies working in the region.
- NERIST alumni who are holding key positions in national and international organizations whose feedback and participation are also unfolding many opportunities in terms of greater placement possibilities, better networking with outside organizations etc.

4. THREATS:

- Emergence of NITs in the different NE states and Government/ Private Universities may lead to deterioration in the quantity and quality of students.
- High 'Turn over rate' among faculties.
- Present policies of State government do not permit non-Arunachalee people to own properties in the state may hamper the sense of belongingness among some sections of employees of the institution.
- Inadequate infrastructure facilities and connectivity viz. air, rail and road connectivity with the Institute comes in the way of many activities like conducting short term courses/ conferences of national level and inviting international and national level experts.

- Difficult to get PG (Masters and PhD) students and research staff in the absence of sufficient scholarship/ fellowship.
- Inadequate facilities in the vicinity to meet medical emergencies.
- Remote location, a big disadvantage for Campus interviews and also for effective Industry-Institute Interaction.
- There is a need to develop the region in technical education and research.

Annexure II

Specific Objectives and Expected Results for the Project

The North Eastern Regional Institute of Science and Technology (NERIST) was set up by the Govt. of India, initially as a project (500 acres of land) of North Eastern Council, Ministry of Home affairs, for providing an innovative system of modular pattern of education to create technical manpower at various levels like certificate, diploma and degree for the development of North Eastern Region (Assam, Arunachal, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura states) of India in 1985 by an Act of Parliament, Govt. of India. Since the foundation stone of the Institute was laid by Shri Giani Zail Singh, the then President of India, on March 4, 1984 and the first batch of students was admitted in August, 2006., eighteen batches of students have been graduated by July, 2009 in different disciplines like Agricultural, Civil, Computer Science, Electrical, Electronics, Forestry and Mechanical Engineering. It is a fully residential Institution, courses are duly recognized by AICTE and UGC and it is 100% funded by MHRD, GOI since April 1994.

The NERIST, since its inception, was affiliated to North East Hill University (Central University), Shillong, Meghalaya for the award of degrees upto December 2005. The Institute has been conferred with the 'Deemed to be a University' status by UGC on May 31st 2005 and it started functioning as a Deemed University from December 13, 2005. The Institute is managed by the Board of Management comprising of representatives from MHRD, eight beneficiary states of North Eastern Region, AICTE, UGC and eminent educationists. Apex body of NERIST Society is headed by the President, Shri. J.J.Singh, H.E. the Governor of Arunachal Pradesh. The Institute has started various P.G.(M.Tech., and M.B.A.) and Research programmes Ph.D., and M.Tech. (Research) part-time as well as full time in all six engineering departments (Agriculture, Civil, Computer Science, Electrical, Electronics, and Mechanical). It is envisaged to start PGDM and Ph.D. programmes in the newly formed Centre for Appropriate Technology and Rural Development (CATRD).

The Institute is located in a picturesque valley at the foot hills of Eastern Himalayas and it is situated at Nirjuli in the Papum Pare district of Arunacahal Pradesh, on National Highway 52A between Bandardewa and Itanagar, the capital of Arunachal Pradesh. It is 400 kms away from Guwahati. It is connected by air (Lilabari, Naharlagun), rail (Naharlagun) and road Nirjuli).

The proposed project under TEQIP-II considers the following general and specific objectives and expected results are presented below.

General Objectives:

- To cater to the technical manpower needs of North Eastern region
- To strengthen UG and PG programmes of the institute on par with national and international level
- To modernize the existing laboratories to suit the revised curriculum and pedagogy
- To develop workshops required for all branches of engineering as per revised curriculum
- To modernize and upgrade library facilities and to create e-learning facilities
- To generate sources for internal revenue
- To train and retrain faculty, and technical staff
- To start new post graduation programmes in engineering
- To enhance industry-institution -interaction

Specific Objectives

- To enhance and create teaching learning systems at UG level using modern ICT
- To upgrade UG laboratories and remove obsolete equipments and instruments
- To procure modern equipment for workshops of mechanical, electrical and civil engineering disciplines
- To start new M.Tech. programmes in Mechanical, Agricultural, Electrical, Electronics and Civil engineering departments
- To preserve and develop appropriate technology and rural development for NE region
- To consider scholarships for non-GATE students for studying M.Tech. and Ph.D. programmes
- To develop systems to support weak students like conducting additional coaching classes on week ends
- To conduct faculty development programmes for all engineering faculty members
- To conduct staff development programmes for all technical staff of laboratories and workshops
- To improve library, online access and e-learning systems
- To improve employability of UG students by strengthening T&P facilities
- To enhance industry institute interaction and entrepreneurship development
- To create facilities for qualification improvement for B.Tech. and M.Tech. faculty in addition to QIP facility for engineering faculty
- To revise academic curriculum, pedagogy, and management capacity enhancement periodically

Expected results from the project

- Production of quality B.Techs, M.Techs and Ph.Ds in engineering for North Eastern region.
- Creating more employment for UG and PG engineering students.
- Developed laboratories and workshops on par with national and international for all UG and selected PG programmes in engineering.

- Trained faculty and staff for quality engineering education in the region.
- Creation of better teaching learning facilities for the institute.
- Creation of better class rooms with modern facilities, e-library, high speed internet facilities.
- Acting as a lead institute to guide and help other institutions in NE region for entrepreneur development, industry consultancy and problem solving.

Annexure III

Action Plan to Achieve the Results and Implementation

- To carryout detailed SWOT analyses and prepare action plans.
- To establish full fledged institutional TEQIP cell for project implementation.
- To obtain NBA certification for all courses as per project norms.
- To enter an MOU with MHRD, GOI, New Delhi
- To carryout detailed training need analysis and preparation of action plans.
- To prepare micro plans for various sub-sections.
- To prepare a quarterly, bi-annual and annual plans and monitoring system.
- To establish academic unit, procurement unit, financial management unit and monitoring and evaluation unit along with committee members for various functions.
- To prepare plans and academic approvals for M.Tech. and Ph.D. programmes
- To fix the responsibility heads for various action groups.
- To implement the plans immediately as and when the funds are released from NPIU for Project Institution.
- To train the concerned persons in the procedures to followed to procure equipments as per World Bank guidelines.

Annexure IV

Capacity and Steps for Implementation of Key Reforms

NERIST is an autonomous engineering institution since its inception. However degrees have been awarded by North East Hill University, Shillong, Meghalaya till December 2005. It has obtained Deemed to be University status in May 2005 under section 3 of UGC Act 1956, empowering to award degrees.

The accreditation of UG and PG programmes was initiated and the Institute has already applied for accreditation and a team from NAAC will visit the Institute soon. The accreditation process will be completed soon.

Block grant sanctioned will be utilized by well established Institute TEQIP unit along with its functional committees for academic unit, financial management unit, monitoring and evaluation unit and procurement unit as per the guidelines of World Bank, and NPIU. The head of the Institution and Coordinator TEQIP will be responsible for effective utilization of funds and efficient management in fulfilling objectives and results of the project.

The Institute has initiated several methods for increasing non-tuition revenue. These include Research and Development sponsored projects from AICTE, ISTE, UGC, DST, MSME, CAPART, PGCL, CSIR, ADA, and North Eastern Council. The amount of current sponsored research projects is around Rs.6 crores. In addition consultancy services, advisory services, testing and certification facilities, short term training programmes, extending theory and laboratory and workshop facilities to new polytechnics and engg institutions like NITs etc. are expected to generate considerable revenue to the institute.

Special Academic Achievements of the Institute

North Eastern Regional Institute of Science and Technology (NERIST) was established in North Eastern region to cater the technical manpower required for all eight states (Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura) in modular pattern and fully funded by MHRD, Govt. of India. It is committed in providing high quality under graduate and post graduate education that can lead to

innovative master's and Ph.D. degrees and effective employability in the region. It also considers research activity and outreach as a crucial for fulfillment of its objectives. It is the only degree level engineering institution in Arunachal Pradesh. It is the only institution in North East as well as in India enrolling more than 45% of SC/ST students in engineering.

This institute was the first to start modular pattern of engineering education in India starting from certificate, diploma, degree, post graduation and doctoral programmes in engineering. It has got well developed laboratories and workshops, library as per requirements for various engineering programmes. It was given deemed to be university status in May 2005. It is the first institute to start MBA in Arunachal Pradesh and it is only institution offering agricultural engineering in the entire North Eastern region. The students admitted are from rural background and the pass out students are well placed in North East (Govt. and Private), in rest of India (Public and Private sector) and abroad in countries like USA, Canada, Australia etc. NERIST has established a training and placement cell, headed by a Professor, to look after training needs and placement work. All the students have compulsory industrial training as a part of academic curriculum. The placements in engg disciplines vary from 50 to 80% during the past three years.

The faculty members are from different parts of India and have obtained their academic qualifications from reputed institutions like IITs, IISc.,NITs, NITTTR, Central and State technical institutions. More than fifty percent have Ph.Ds and the remaining M.Techs. Our Ex. Faculty members who left our institute are also placed in IITs, IIMs, NITs, and NITTTRs. One of the former faculty, Prof. D. Sahasrabudhdhe is about to join as Director, AICTE in July 2015. NERIST has also been helping in training students of state Polytechnic, and consultancy works of CPWD, BSNL, PGCL, MSME, NEC, DST, AICTE and PWD. The institute has been establishing various facilities like business incubation centre to establish entrepreneurs, integrated bio-diesel production and training centre and Industry institution interaction cell (IIIC) to mention a few. NERIST has been strictly adhering academic schedule during the past two decades without any deviation even for a single day. NERIST has a society, a board of management (BOM), and an academic council for policy making, steering, monitoring, decision making and smooth functioning of the Institute.