GOVERNMENT OF INDIA

TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME (TEQIP)

(PHASE-III)

IMPROVE QUALITY & EQUITY IN ENGINEERING INSTITUTIONS IN FOCUS STATES

(COMPONENT 1.0)

INSTITUTIONAL DEVELOPMENT PROPOSAL

under

Sub-Component 1.3

Twinning Arrangements to build Capacity and Improve Performance of Participating Institutions and ATUs

Submitted by

NATIONAL INSTITUTE OF TECHNOLOGY, CALICUT

FEBRUARY 2017

1. INSTITUTIONAL BASIC INFORMATION

1.1 Institutional Identity

- Name of the Institution : **NATIONAL INSTITUTE OF TECHNOLOGY, CALICUT**

  NIT CAMPUS P.O., KOZHIKODE-673601, KERALA
- Year of Establishment : CREC in 1961**(NIT in 2002)**
- Is the Institution AICTE approved : Yes/No
- Furnish AICTE approval no. : Institute of National Importance & Governed by NIT Act 2007
- Type of Institution : NIT
- Status of Institution : NIT
- Names & designation of Head of the Institution (Fulltime appointee) : Dr. SIVAJI CHAKRAVORTI DIRECTOR

1.2 Academic Information

- **Engineering UG and PG Programmes offered in Academic year 2016-2017**

Table 1.2.1 UG and PG Programmes

Sl. No.	Title of Programme	Level (UG,PG,PhD)	Duration (Years)	Year of starting	AICTE Sanctioned Annual Intake	Total Strength
1	Chemical Engineering	UG (B. Tech)	4 years	2008	93	373
2	Civil Engineering	UG (B. Tech)	4 years	1961	138	569
3	Computer Science & Engineering	UG (B. Tech)	4 years	1985	138	608
4	Electrical & Electronics Engineering	UG (B. Tech)	4 years	1961	138	559
5	Electronics & Communication Engineering	UG (B. Tech)	4 years	1980	138	598
6	Mechanical Engineering	UG (B. Tech)	4 years	1961	138	603
7	Production Engineering	UG (B. Tech)	4 years	1984	47	172
8	Bio Technology*	UG (B. Tech)	4 years	2008	30	104
9	Engineering Physics*	UG (B. Tech)	4 years	2009	30	116
10	Structural Engineering	PG (M.Tech)	2 years	1971	20	40
11	Traffic and Transportation planning	PG (M.Tech)	2 years	1985	20	37
12	Offshore structures	PG (M.Tech)	2 years	1987	20	33
13	Environmental Geotechnology	PG (M.Tech)	2 years	2006	20	38
14	Computer Science & Engineering	PG (M.Tech)	2 years	1998	20	36
15	Computer Science & Engineering Information Security	PG (M.Tech)	2 years	2006	20	36
16	Power Systems	PG (M.Tech)	2 years	1985	20	41
17	Power Electronics	PG (M.Tech)	2 years	1987	20	34
18	Instrumentation & Control	PG (M.Tech)	2 years	1971	20	38

19	Industrial Power & Automation	PG (M.Tech)	2 years	2006	20	37
20	Electronics Design & Technology	PG (M.Tech)	2 years	2001	20	40
21	Microelectronics & VLSI	PG (M.Tech)	2 years	2006	20	35
22	Signal Processing	PG (M.Tech)	2 years	2006	13	22
23	Telecommunication	PG (M.Tech)	2 years	2006	13	17
24	Industrial Engineering & Management	PG (M.Tech)	2 years	1984	20	27
25	Thermal Sciences	PG (M.Tech)	2 years	1989	20	30
26	Manufacturing Technology	PG (M.Tech)	2 years	1989	20	32
27	Material Science & Technology	PG (M.Tech)	2 years	2000	20	26
28	Energy Engg & Management	PG (M.Tech)	2 years	2000	20	35
29	Nanotechnology	PG (M.Tech)	2 years	2008	13	13
30	High Voltage Engineering	PG (M.Tech)	2 years	2014	13	22
31	Machine Design*	PG (M.Tech)	2 years	2014	13	19
32	Water Resources Engineering	PG (M.Tech)	2years	2014	12	19
33	Chemical Engineering	PG (M.Tech)	2years	2014	13	17
34	Urban Planning	PG(M.Design)	2 years	2015	13	21

- **NBA Accreditation Status of UG and PG programmes as on 31st December 2016**

Total number of Programmes eligible for accreditation : 29 Nos
No of programmes accredited : **5 UG Programmes**
No. of programmes applied for accreditation : **23 Nos(UG-3 + PG 20)**

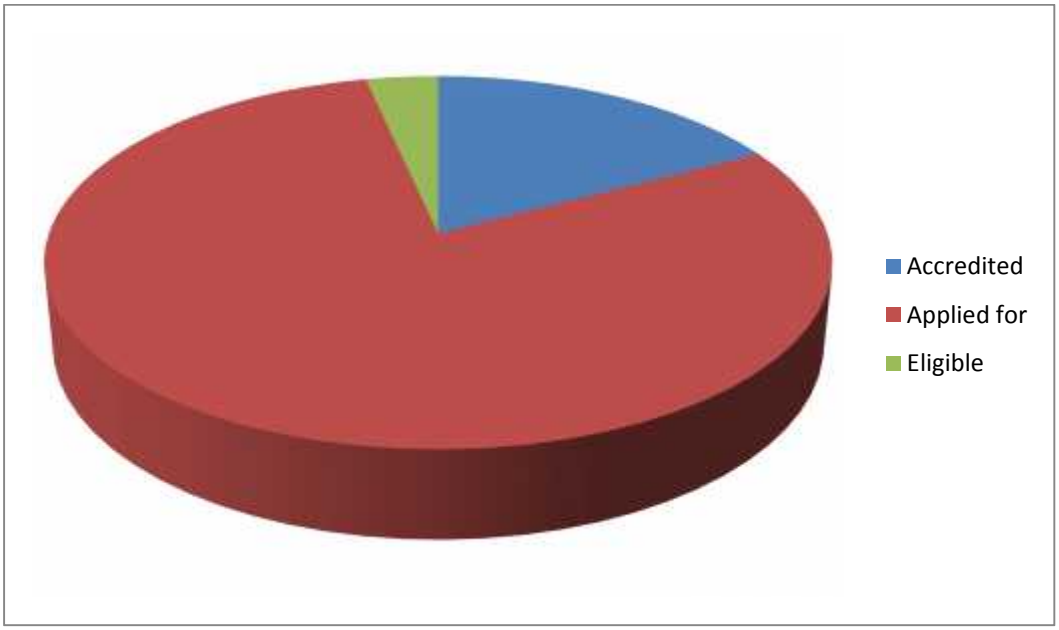

Fig. 1.2.1 Accreditation Status as on 31 December 2016

- **Status of faculty Associated with Teaching Engineering Students(Regular/On-Contract) as on December 31, 2016**

Table 1.2.2 Faculty in position as on December 31, 2016

Year	2016 -2017
Sanctioned posts	483
Filled posts	R:185, C:7, Adhoc:141
Vacant Posts	298
R= Regular full time, C=Contractual, (Ad hoc-purely temporary)	

- **Detailed Faculty Status (Regular/On-Contract Faculty as on 31 December 2016)**

Table 1.2.3 Detailed Faculty Status (Regular/On-Contract Faculty as on 31 December 2016)

Faculty Rank	No. of Sanctioned Regular Post	Present : Status : Number in Position By Highest Qualification												Total Number of regular faculty in Position	Total Vacancies	Total Number of Contract faculty in Position
		Doctoral Degree				Masters Degree				Bachelor Degree						
		Eggs. Discipline		Other Disicipline		Engg. Discipline		Other Disicipline		Engg. Discipline		Other Disicipline				
		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)
Prof	69	39	-	7	-	-	-	NIL	NIL	NIL	NIL	NIL	NIL	46	23	NIL
Asso Prof	138	30	-	14	-	6	-	NIL	NIL	NIL	NIL	NIL	NIL	50	88	NIL
Asst Prof	276	49	-	18	-	19	6	3	1	NIL	NIL	NIL	NIL	89	187	7
Lec	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	483	118	-	39	-	25	6	3	1	NIL	NIL	NIL	NIL	185	298	7

2. INSTITUTIONAL DEVELOPMENT PROPOSAL (IDP)

(Implementation Period: April 2017 – March 2020)

2.1 Give the executive summary of the IDP

This Institutional Development Proposal (IDP) has been prepared by scrutinizing and consolidating the individual proposals received from all Engineering Departments and the supporting Departments of the Institute. It has been prepared by keeping the need for twinning with institutions in the focus states and also to consolidate the development process carried over during the TEQIP Phase I and Phase II.

The overall objective of the proposal is to improve the quality of the engineering education, both at the undergraduate and postgraduate levels and promote research and innovation in engineering. This is envisaged to be accomplished through a multi-pronged strategy involving the support for modifying the curriculum of UG/PG courses, developing an atmosphere conducive for research, modernizing central facilities like library, computer centre, instrumentation facility etc. strengthening industry institute collaboration, as well as, collaboration with reputed institutes, organizations and professional bodies within and outside the country, training of faculty and supporting staff, encouraging faculty to attend seminars, workshops and conferences etc. It is also proposed to encourage student innovations and focused research, even at UG level. It is expected that these measures will improve the research publications and enhance the visibility of the Institute and this, in turn, is expected to attract good quality students for post graduate education and research in the future. The Institution will thus be able to achieve excellence and contribute to the mission of nation building much more effectively. The processes are designed to support the twinning arrangements that are needed in the third phase and to enable an effective collaborative arrangement with the partner institution.

The fund requirements for the various action plans envisaged to achieve the project objectives are highlighted in the subsequent sections. The year wise fund allocations over the project period are: 2017-18: Rs. 2.00 Crores, 2018-19: Rs. 3.26 Crores, 2019-20: Rs. 1.74 Crores with an aggregate outlay of Rs.7.00 Crores for the three year period. Efforts shall be made to seek additional funding in the later stage.

2.2A Provide an action plan with timelines for : (not more than 1 page for each sub-activity)

(a) Improving the learning outcomes of the students

1. Faculty training (qualification upgradation, subject upgradation & research competence, Pedagogical training, participation in conferences, seminars/workshops etc.)

(a) Basic and advanced pedagogy training

Faculty will be supported to undergo training in teaching methodology and academic quality management.

Short term courses on basic pedagogy, communication skills and teaching methodology are recommended for new faculty members and those with less than four years of teaching experience.

Advanced courses on pedagogy are recommended for experienced faculty members. Many faculty members aim to write books on their respective areas, and many are involved in activities like reviewing course material, preparation of courses, curricula and syllabi. Suitable short or medium term courses are advised for all faculty members in Project Management, Intellectual Property Rights etc.

(b) Subject / domain knowledge enhancement

Short and medium term courses (3days, one week and two weeks programs) relating to subject and domain knowledge enhancement in all the major areas are recommended. Faculty will be encouraged to visit foreign Institutions for short terms up to two months and also when they travel to attend the international conferences. Joint workshops and tutorial sessions will be supported with collaboration from outside.

(c) *Attendance in activities such as workshops, seminars, etc*.

It is recommended for all the faculty members, both in engineering and also in supporting departments. Moreover, it is proposed that faculty members may be allowed to attend good seminars and workshops even while the semester is on, after making suitable arrangements for rescheduling the lecture and lab classes, as many of the good workshops are held during such periods.

2. *Staff training (Technical & Administrative staff)*
   (a) Medium and short term training courses are proposed in their domain areas (like web technology, Linux administration, networking, data base management, common software packages like MATLAB, MULTISIM and repair & maintenance of lab equipment etc.)
   (b) Further the technical and support staff are to be trained for supervisory and skill development in using state of the art equipment and technology.
   (c) Medium and short term training programs for newly appointed technical staff to carry out routine laboratory tests as per BIS stipulations. Courses run by Government organizations and well known institutions will be used.
   (d) Medium and short term training courses are proposed in office automation.

3. *Increasing capacity of UG, PG and PhD education (increasing enrollment and starting new UG, PG and PhD programmes)*

Institute will continuously monitor the market demands for the graduates and will enhance or restructure courses to keep the curriculum relevant and the students get placed. This will attract more good students. Seat capacity need to be enhanced subject to faculty strength and the market demand.

4. *Investing in smart classrooms, campus Wi-Fi (24*7 broadband connectivity and Wi-Fi access in all academic and administrative buildings and hostels (with a minimum of 2 MBPS speed for each connection)), e-library etc.*
   Current NKN connectivity of 1 Gbps will be enhanced. Also, a stand by connectivity will be provided to fall back. Campus wide WiFi coverage is almost 60%. This will be enhanced to 100% with seamless connectivity. Data Centre and High Performance Computing facility will be made easily accessible. IVRS and SMS based alerts will be set up for the students and faculty.

5. *Improving the academic performance of SC/ST/OBC/academically weak students through innovative methods, such as remedial and skill development classes, peer assisted learning for increasing the transition rate, non- cognitive skills and pass rate.*
   Equity Action Plan will be scrupulously followed to improve the academic performance of the SC/ST/OBC/academically weak students through innovative methods. Nearly 30% of the student population being women, special initiatives will be taken to improve the academic quality and career worthiness for women students, research work of women scholars etc. Systematic study will be made on the semester wise performance of the various categories of students and remedial measures will be taken. Diagnostic tests and remedial teaching will be undertaken to identify the academic weak groups of students and improve their performance. Language and professional communication training will be provided on a regular basis. More activities at the campus level with active participation of students will be encouraged. Extra- curricular and co- curricular activities will be encouraged. Student research and professional activities will be given due recognition.

6. Instituting academic and non-academic reforms including NBA accreditation, programme flexibility (Is there any need to revise the curriculum? When it was last revised?)
   NITC has been working on the new curriculum which will be introduced in 2017. Also, the NBA assessment and accreditation, which has been initiated during TEQIP-II will be followed up. Faculty and staff recruitment will be conducted as per the provisions in the MHRD guidelines. Institute shall also work on collaborative programmes and twinning arrangements.

(b) Improving employability of the students

1. *Increasing interaction with industry (What are the industries located in the vicinity? What role of industry is perceived for the institute?*)
   Calicut is not well industrialized with big industries. But, it has good connectivity to other industrial destinations in India. Interaction with the industry and R&D

organizations will be strengthened. Industries will be invited to sponsor student seminars, technical festivals etc. Also, internship will be made a regular feature. Even now it is present in good rates.

The following activities are envisaged to improve collaboration with Industry.

- The Industry-Institute Linkage cell activated under TEQIP-II to be strengthened
- Conducting training programs catering to the requirements of the industry
- Conducting training programs, symposia, conferences etc in collaboration with the industry as well as professional bodies
- Taking up R&D activities of relevance to the industry
- Encouraging P G and UG students to do their projects in Industry
- Sending U G students to do summer internships in Industry
- Combined Ph. D guidance for researchers working in industry, to work on problems of common interest.
- Increased enrollment of industry sponsored personnel for PG courses
- Working out MoUs, wherever feasible, for joint activities

Enhance the research & consultancy activities by strengthening the Industrial Consultancy & Sponsored Research Cell.

2. Student career counseling and placement

NITC's focus will be to enhance the *salary offers* made to the students. This is largely governed by the set of predefined modalities of the industries. So, industries will be approached to seek guidance in the skill and knowledge requirements that are to be incorporated in the curriculum to make the student employable for highly demanding jobs like R&D, Design , Technology Development etc. with higher starting pay. Specifically, the focus will be to:

- Instill research interest among under graduate students through the normal teaching process in the classes and laboratories.
- Tailor the project work of UG students to be part of the ongoing research activities in the Department so that they can know better about various research areas and its prospects and societal relevance.
- Arrange Invited lectures by experts from premier R&D establishments and institutes like IITs, IISc etc. as well as from the industry.
- Encourage under graduate students to undertake summer internship in IIT/IISC/other reputed labs and industries.
- Encouraging participation in workshops and industry sponsored research
- Organizing programmes for non-cognitive development

(c) Increasing faculty productivity and motivation

Sponsored research, consultancy and other revenue generating activities

- Recognize merit in the selection and promotion
- Provide the state of the art R&D facilities

- Networking/collaboration with leading institutions
- Undertaking industrial consultancy and joint PhD works
- Incorporate the incentives in R&D and sponsored projects in the career advancement

Table 2.2.1 Timelines for various activities(shading shows the duration in months) under the on campus twinning arrangements

Sl. No	Key Activities	Project Months											
		1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27	28-30	31-33	34-36
1	Strengthening existing programs												
2	Modernizing Central facilities												
3	Faculty Development												
4	Student Research & Innovations												
5	Student exchange/visit under twinning												
6	Faculty exchange/visit under twinning												
7	Curriculum review and upgrading Self/twinning												
8	Sending students to leading labs. & other institutions												
9	Training to Faculty and Technical Staff Self/twinning												
10	Attending Conferences, seminars, etc. national/internati onal												
11	Joint Conferences/semi nars/workshops												

2.2B Equity Action Plan-Provide an action plan for organizing a Finishing School and for improving the academic performance of SC/ST/OBC/academically weak students

through innovative methods, such as remedial and skill development classes for increasing the transition rate and pass rate with the objective of improving their employability.

- **Training program on soft skills for weaker section of students.** It is proposed to conduct soft skill training program for selected academically weak students of our Institution. This shall be conducted in batches by engaging suitable consultants.
- **Finishing school**-One finishing school for the *circuit branches* "CS,EC&EE" and another one for the Civil, Mechanical & Chemical Engineering students will be conducted targeting the 6th Semester UG students. Tentative period – 60 hours per batch of 50 each selected based on application.
- **Special classes for select subjects to improve transition rate**-Special classes are already conducted outside class hours by senior students for the academically weak students of the various departments. This initiative is taken through the Student Guidance Cell, and the classes are arranged with due guidance from the faculty handling various subjects. It is proposed to further strengthen this initiative by arranging classes for academically weak students on a regular basis and provide suitable honorarium for those handling the classes.
- **Student Counseling**-One of the reasons identified for the poor transition rate among the students is the lack of initiative on the part of the students. It is proposed to take the help of trained Clinical Psychologists to give counseling and emotional support to the identified weak students so that they become capable to tackle the various challenges.
- **Placement training**-It is also proposed to conduct a training session specially to help the third year and final year students for facing group discussion and interview, as a part of preparing the students for on campus / off campus placements. Agencies having a proven track record of conducting such programmes shall be engaged on a competitive basis by procuring their services through PMSS.
- **Workshops for Skill Development**-Skill development programmes such as hands – on training in modern software tools and specialty laboratory equipments, that are not included in the curriculum shall be arranged for UG and PG students. One workshop each for the Engineering Departments shall be conducted.
- **Workshop on Research Methodology**- Renowned faculty and retired Professors shall be engaged for conducting Workshop on Research Methodology and Technical Writing for the PG students and Research Scholars of various

Departments- One workshop each for the Engineering Departments shall be conducted by engaging suitable experts.

2.3 **Describe the following in brief**

(a) *Is there an ERP/MIS system existing. If yes, then any improvement, modifications suggested*

Institute has developed the MIS during TEQIP-I and has been using it suitable maintenance even now. There is capacity limitation and technological compliance/compatibility issues. So, the work on new MIS has been started recently. Also, discussion is in progress to procure the knowledge management software of National Informatics Centre for Office use. Since the crucial service is regarding the academic matters, a state of the art MIS is being designed to provide end to end solution for admission, examination, transition, grade card, etc. and also for online delivery of lessons. Moodle is widely used by faculty. Hardware support is being provided for developing MOOCS courses. A Data Centre will be set up for supporting the increase in ICT applications on campus.

(b*) Is there any mechanism i.e. special classes being conducted in the institution for improving the GATE Score.*

Institute is providing online support for students to learn advanced topics from the Internet using NPTEL. Separate study room is provided in the Library for 24 x & for helping students. Curriculum is designed by keeping the GATE syllabi in perspective. Peer learning is arranged by students where tuition classes are engaged by senior students. No special coaching class for GATE is arranged by faculty.

2.4 ***Please identify some endeavours and joint activities that you would undertake with the institution of focus state under subcomponent 1.1 for twinning arrangement from among the ones listed below and/or any further ones and provide the yearly action plan for 3 years.***

NIT Calicut will be able to render a variety of support for the Institutional development of the mentee institutions. An overview of the collaborative/joint activities is given in the following tabulation.

Table 2.4.1 Action Plan over the Project Period under Twinning Arrangements

Sl. No.	Suggested Activity/Indicator	Proposed Action	Target(number, %age, stage etc.) for institution under subcomponent 1.1 over the baseline, if applicable

			2017-18	2018-19	2019-20
1.	Increase in student graduation rates	**Guidance & Active teaching**	**+5%**	**+15%**	**+25%**
2.	Improved Placement of graduates a) Placement rate b) Placement Package	**Career Guidance & Finishing School**	**+3%** **+2%**	**+7%** **+5%**	**+10%** **+7%**
3.	Increase in GATE qualified graduates	**Faculty Development & Student Guidance**	**+3%**	**+5%**	**+10%**
4.	Smart Classrooms	**Preparation of Design & Specifications**	**-**	**5 Nos**	**5 Nos**
5.	e-books and e-journals	**Selection & Procurement Setting up Digital Library**	**25 e books** **25 e-journals**	**50 e books** **50 e-journals**	**50 e books** **100 e-journals**
6.	Increase in publications in refereed journals	**Faculty Mentoring**	**+2%**	**+5%**	**+10%**
7.	Seminars, meetings and conferences for students and faculty for training and academic development	**Joint organization and collaboration**	**3 Nos**	**8Nos**	**6Nos**
8.	Sharing of faculty for teaching processes	**Training on Course lesson design, instructional delivery, model teaching classes, pedagogy training etc.**	**5 Nos**	**10Nos**	**10Nos**
9.	Faculty exchange for research & development purposes	**Visit to Institute, laboratory design, equipment selection etc.**	**1 Nos**	**3 Nos**	**3 Nos**
10.	Student exchange at Ph.D, Masters and Undergraduate levels	**Short visits, summer courses, credit transfer, etc.**	**5 Nos**	**10 Nos**	**10Nos**
11.	Joint supervision of PhD and/or Masters student	**Joint guidance, sharing of labs, computing facilities, short visits**	**2 Nos**	**3Nos**	**3Nos**
12.	Joint activities with industry for joint R&D, internships and placement activities	**Joint organization and collaboration**	**1 Nos**	**2 Nos**	**2 Nos**
13.	Seminars and learning forums on improving governance practices	**Development of good governance practices and Self review**	**1 Nos**	**2 Nos**	**2 Nos**

		mechanisms			
14.	Improvement in NBA accreditation (including applied for cases)	**SAR preparation, Brainstorming for faculty & student Self assessment & correction**	**25%**	**50%**	**25%**
15.	Helping in grant of UGC Autonomy for non-autonomous institutions	**Brainstorming for faculty & student Self assessment & correction Workshop on the UGC Visits**	**1 Nos**	**2 Nos.**	**2 Nos**
16.	Other Activities- Setting up Campus Wide WiFi Network with OFC Backbone	**Preparation of Design & Specifications**	**25% coverage**	**50% coverage**	**25% coverage**
17.	Other Activities- Setting up Industry Institute Interaction Cell	**Brainstorming for faculty & student Invited Lectures**	**2 Nos**	**4 Nos**	**4 Nos**
18.	Other activities- Sensitizing about Student Research Innovation Cell & Incubator	**Brainstorming for faculty & student Invited Lectures Design Contests Seed Funding**	**1 No**	**2 Nos**	**2 Nos**
19.	Setting up Technology Business Incubator	**Workshops, meetings, proposal preparation**	**Sensitization and Start Up Seminar**	**Apply to DST**	**First Batch Incubation to begin**

2.5 ***Identify the outreach programmes and systems which are already in place in your Institute to succeed in your role of twinning for strengthening of other institutions viz. related to faculty/students/non-teaching/industry etc.***

NITC has following units in place which can be leveraged for reaching out to the twinning institute along with the share of knowledge and expertise of the academic departments and the specialized research activities

a. Centre for Continuing Education
b. Industry Institute Interaction Cell
c. Technology Business Incubator

NITC faculty has been regularly conducting faculty development programmes in the various subject domains. Internal and external faculty experts are invited to deliver the lectures. Institute is a member of the Confederation of Indian Industry (CII) Membership No. C02401. Also, it has MoU with industries, institutes and universities within and outside India. These

linkages shall be used to obtain more concrete results in the twining arrangements. NITC faculty has several sponsored research and consultancy projects. So, the experience in obtaining external funding will be used in motivating faculty of the twinning institutes in that direction. Student exchange can be facilitated by using the academic autonomy NIT Calicut

2.6 ***Identify the academic and/or administrative challenges that you anticipate in your role of t winning and the mechanism that you have put in place and/or intend to put in place, to address these challenges***

The academic challenges would include the differences in the curriculum, temporal differences in the academic calendar, examinations, etc. From the new National Accreditation framework for engineering education, the curriculum needs to be designed to strengthen the outcomes. Rubrics of the academic programmes need to be designed to enable a strong outcome based education process in the twinning institutions if it is not prevalent. If the outcome based education is already adopted, then timely modification in the curriculum will have to be made. Series of discussions, workshops, faculty development programmes and brainstorming sessions will be conducted. Assistance of the leading institutes like Indian Institute of Technology Madras, National Institutes like NITTTR, Bhopal/Chandigarh/Kolkota, other NITs and so on will be obtained through collaborations to enable/achieve the proper deliverables and milestones

2.7 **Is there any difficulty in Recruitment and selection of high quality faculty. If Yes what are the reason and action plan to solve the issue?**

NIT Calicut being an Institute with the legacy of roughly six decades, it has the proven track record of strong academic activities. This has been enabled by the dedicated work of the faculty and staff. With the conferment of the status of Institute of national importance, there are two fundamental issues in the Recruitment and selection of high quality faculty viz. (1) Attracting the best researchers from around the world in the entry level as well as laterally at the middle levels (2) Converting the legacy of a teaching & research to more focused thematic research and development that complement the teaching. The Institute is in the process of inducting good faculty and staff through, development and new recruitment. The recruitment is proposed to be done in a phased manner to periodically appoint fresh and competent persons and the activities are in progress.

2.8 **Give an action plan for long term strategic partnership with the mentee institute after the end of the Project.**

NIT Calicut, being a fully centrally funded institution of national importance, the government of India norms would be followed in the academic networking and the twinning arrangements. Given the freedom, Institute would reach out to the mentee institute to strengthen faculty expertise, develop the curriculum and also in the instructional design and delivery. Organization of faculty development programmes, student exchanges, staff training, and the development of special purpose laboratory facilities, research groups etc. could happen. For sustaining these activities we need an enabling mechanism like Educational Consultancy and Learning Services Cell, Educational Media Resource Centre, Data Centre, Industrial Consultancy & Sponsored Research Unit etc. set up on both sides so as to establish a seamless networking. Funding will be partially met from Government grants and partially by the share of income generated by the Institutes.

2.9 **Describe briefly the participation of departments/faculty/students in the preparation of IDP**

At the Department level, the meetings of the faculty were initially held where the salient features of TEQIP were explained. This was followed by a discussion on the proposed action plan by the Department. The project document was circulated among the faculty groups working in different areas and they were asked to go through it and send the proposals. The proposals received from the faculty group were reviewed and consolidated. As in the previous stage of TEQIP funding, it is envisaged to implement the proposal with the active involvement of all faculty and technical staff of the Department.

Departments have identified the needs through constant evaluation of the curriculum needs and the study of the gaps pointed out in the NBA assessments. Also, since the curriculum is under revision, there is need for providing some latest facilities to strengthen the areas like micro electronics, VLSI, high voltage engineering, materials, manufacturing, high performance computing, design, instrumentation, structures, environmental studies and so on. The exact needs in these areas are being identified with the help of faculty and the students through an institutional/department level consultation sessions, seminars, project evaluations etc. So, it has been observed that even though the needs are wide and varying, the funds available are limited. The requirements have been prioritized and also it was emphasized to strengthen the

facilities created under the previous phases of TEQIP to build the institutional excellence with a stronger footing.

3.0 Budget

The overall budget with an outlay of Rs.7.00 Crores is given below

Table 3.0 Proposed Institutional Project Budget for Sub-Component 1.3(Rs Lakhs)

Sl. No.	Key Activities	Category of Expenditure	Project Allocation	Financial Year		
				2017-18	2018-19	2019-20
1	Procurement of Goods: Infrastructure improvements for teaching, training and learning through: (i) Establishment of new laboratories and strengthening existing programmes, HPC, Data Centre, XRD, etc. improving faculty/student research, teaching, training and learning facilities, modernizing classrooms etc. (ii) Updation of learning resources (iii) Procurement of furniture (iv) Modernization and strengthening of libraries and increasing access to knowledge resources (v) Refurbishment (Minor Civil Works)	**Procurement**	**Up to 50%**	**134**	**170**	**46**
2	Improvement in Teaching Learning and Research competence • Improve student learning • Student employability • Increasing faculty productivity & motivation • **Campus wide MIS & Data Centre setup and management** Establishing a Twinning system- • Establishing twinning arrangements with institutions under Subcomponent 1.1 to build capacity and improved performance Enhanced interaction with Industry Institutional Management Capacity Enhancement Appointment of Individual Institutional mentors	**Academic***	**At least 40%**	**50**	**130**	**100**
3	Incremental Operating Cost: Operation & Maintenance, Salary of Project Staff, Hiring of vehicles Travel for Project management/review etc. Office expenses, consumables, stationery, printing, etc. Appointment of Financial Auditors	**IOC**	**Up to 10%**	**16**	**26**	**28**
	TOTAL		**700**	**200**	**326**	**174**

*Fund from Procurement and IOC Head of expenditures will be re-appropriated to head of expenditure for academic activities but not vice versa

2.10 Institutional Project implementation arrangements.

The following team will carry out the TEQIP implementation in the institute.

- Director of the Institute is the PROJECT LEADER.
- Dean(P&D) will be the Chief Procurement Officer
- A faculty at senior level is TEQIP Coordinator of the institute.
- There are 4 TEQIP Nodal Officers looking after Procurement, Finance, Academic and Equity Action Plan working under with the TEQIP Coordinator. Procurement Nodal officer shall be the Project Manager. There shall be a Nodal Officer for Twinning arrangements.
- Various Committees will be formed for looking after Procurement, Finance, Academic and Equity Action Plan and for twinning arrangements.
- Each Department will have two TEQIP Co Coordinators who is responsible for liaison work for all TEQIP activities for procurement and academic activities.

2.11 Give an action plan to ensure that the project activities would be sustained after the end of the project.

- **Faculty Development**-Institute has earmarked funds for R&D from its revenues to sustain the R&D activities of faculty. This will continue Also, there is Professional Development Allowance given by the Government which will be available for faculty for their career and professional development.
- **Staff Development**-Institute shall form a Human Resource Development Cell under the Administrative Wing and will be provided with grants from the revenues to regularly conduct the training and skill development programmes to improve the efficiency and build the career for the technical and administrative staff.
- Maintenance of Equipment-Institute has provisions in the budget for providing support for the Departments to meet the recurring expenditure through DOC. Also, the 60/40 percent of the receipts from testing & consultancy are retained by the Institute under the head “Research & Consultancy” for meeting various requirements of operation and maintenance.
- Modernization of Laboratories-Faculty have been securing R&D funds from various agencies for research purposes and a portion which are available for capital expenditure for equipments. Further to this, Institute also earmark funds from the internal revenue
- Intellectual Property & Patents

- With sufficient faculty strength, faculty members will be able to sustain the project activities by devoting time to continue the R&D and consultancy activities to generate funds for the sustenance of the project.
- Sufficient revenue would be generated during/after the Project phase through consultancy projects, industry sponsored projects, testing and calibration etc. It is expected that these activities are possible through the various action plan envisaged in the TEQIP Project.

2.12 Four Funds

- The four funds will be kept active to accrue more from the revenues earned to build the corpus in each fund and it would become handy in future to sustain quality improvement.

IDP Forwarded

21/02/17.

TEQIP Coordinator

Place: NIT Calicut

Date: 21/02/2017

21-02-2017

DIRECTOR

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