

TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME (TEQIP) PHASE-III

INSTITUTIONAL DEVELOPMENT PROPOSAL



Submitted by

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Indian Institute of Information Technology Manipur

Mantripukhri, Imphal- 795002

Manipur

For

Sub-Component 1.1: Institutional Development for Participating Institutions

1. Institutional Basic Information

1.1 Institutional Identity

Name and address of the Institution	Indian Institute of Information Technology Manipur, Transit Campus, Mantripukhri, Near CRPF camp, Imphal-795002, Manipur
Year of establishment	2015
Is the Institution AICTE approved? Yes/No	Not Applicable
Furnish AICTE approval No,	Not Applicable
Type of Institution Govt, funded/ Govt, aided/NIT	Govt. aided Institute under MHRD
Status of Institution	Autonomous Institute under MHRD
Name and Designation of Head of the Institution	Prof. Amarendra Kumar Das, Interim Director

1.2 Academic Information:

Engineering UG and PG programmes offered in Academic year 2016-17:

S. No	Title of Programmes	Level (UG,PG, PhD)	Duration (Years)	Year of starting	MHRD sanctioned annual intake	Total student strength in all years of study
1	B. Tech (Computer Science and Engineering)	UG	Four	2015	50	34
2	B. Tech (Electronics and Communication Engineering)	UG	Four	2015	50	38

NBA Accreditation Status of UG and PG programmes as on 31st December 2016:	Not Applicable
Total no of programmes eligible for accreditation (at least one batch pass out):	Not Applicable
No. of programmes accredited:	Not Applicable
No. of programmes applied for accreditation :	Not Applicable

Status .of Faculty Associated with Teaching Engineering Students (Regular & Contract) as on 31st December 2016:

No. of Sanctioned Regular Posts	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						
	Engineering Disciplines		Supporting Disciplines (Physics, Chemistry, Maths and English/other languages)		Engineering Disciplines		Supporting Disciplines (Physics, Chemistry, Maths and English/other languages)		Engineering Disciplines		Supporting Disciplines (Physics, Chemistry, Maths and English/other languages)				
	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=(2+4+6+8+10+11)	15=(1-14)	16=(3+5+7+9+11+13)
16	0	8	0	3	0	0	0	0	0	0	0	0	0	5	11

R= Regular, C=Contract

2. INSTITUTIONAL DEVELOPMENT PROPOSAL (IDP) (Implementation period: April 2017-March 2020)

2.1 Give the Executive Summary of the IDP (max 2 pages).

Indian Institute of Information Technology Manipur has been set up in order to develop Manipur as preferred destination for Information technology related manpower and industry. This shall enable Manipur to gear up for providing Information Technology related services as well as high-quality R&D in Information Technology. IIIT Manipur is starting its undergraduate degree courses in two disciplines, Computer Science and Engineering (CSE) and Electronics and Communication Engineering (ECE) from its transit campus located at Mantripukhri, adjacent to IT SEZ park in Imphal from current Academic year, July 2015. IIIT Manipur's permanent campus will come up at Ningthoupham village, Mayangkhang, Senapati district of Manipur. Initial intake for the year 2015-16 was 30 students in each discipline and 50 students in each discipline for 2016-17 academic year. Mentored by IIT Guwahati, Interim Director Prof. Amarendra Kumar Das is actively working and the transit complex is provided with all required infrastructure for overall development of the institute. It is also mandated to start Design and Manufacturing disciplines to positively contribute to Govt. of India mission of Act East and creating manufacturing hub in South East Asia. To contribute to Human Resource development of its neighboring countries, IIIT Manipur will be looking for opportunities to spread IT education to Myanmar by providing required facilities to students of that country to study in IIIT Manipur through bi-lateral agreements.

Institute at present is mentored by IIT Guwahati as mentor Institute and accordingly it is administered by Interim Director, Prof. Amarendra Kumar Das, from the Department of Design, IIT Guwahati. It also has its administrative head as Registrar. Mr. U C Das from IIT Guwahati is officiating as Interim Registrar. IIIT Manipur is governed by Board of Governors (BoG) as per MHRD norms and also has a State Steering Committee (SSC). The IDP can be summarized with the following objectives;

- Establishment of ERP unit
- Improving student/ faculty interaction with Industries.
- Extension of financial and administrative support to institute research laboratories.
- Procurement of professional software and computers for central computer center.
- Imparting pedagogical training to the faculty.
- Deputation of faculties to advance research labs at IITs/IISc
- Establish mechanism for conducting summer courses for weaker students.
- Conduct soft skill development programs for students.
- Procurement of e- resources via subscriptions and purchase of books, journal, software, etc.

- Encouragement to interdisciplinary research.
- Establishment of Entrepreneur Development Cell
- Establishment of Centre of e-Learning and Centre for Design and Manufacturing.

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

a. Improving the learning outcomes of the students

To increase the learning outcomes of students at IITM various objectives that are either already incorporated or that can be introduced, are summarized here as follows;

- Increase their awareness about the past and recent advancement in various field of Electronics and Information Technology.
- Increase their awareness about the Design and Manufacturing aspect of product design
- Increase their awareness about industrial work culture
- Improvement in quality of life of society via various engineering courses
- Self-management via planned and initiated activities;
- Creating awareness towards issues of national and global importance;
- Aware of ethical implications of their actions;
- Team work via collaborated project work;
- Interaction with Industry work culture via compulsory Industrial training
- Objective oriented projects for commitment towards goal.
- Develop new technical and professional skills;
- Develop modern teaching and learning facilities in classrooms and laboratories;
- Provide additional learning hours to the weaker students;
- Provide facilities for effective introduction to the research and development;
- Provide summer semester for weaker students;
- Correlating theory courses with lab experiments;
- Implementation of Moodle for centralized sharing of study materials
- Aiding central and departmental libraries with the procurement of additional resources and learning materials.
- Various e-learning based programs such as GAIN, Spoken Tutorial are already in place and the initiative can be strengthen by developing a separate center at IIT M for e-learning where various online certification exams, lectures and courses can be conducted.

- IIITM campus is already Wifi connected however the network can be further improved
- Student feed-back system in each semester is already in place to take necessary improvements based on student requirement
- To provide additional coaching for GATE/CAT/MAT and other competitive examinations

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

Basic and advanced pedagogy: Faculty members who have not yet undergone orientation programs will be encouraged to undergo these programs at academic institutions. Or Pedagogical training program can be organized by calling the experts from NITTTR or other prestigious Institute.

Subject/domain knowledge enhancement: Faculty members will be encouraged to attend extension lectures, undergo subject refresher courses and other specialized courses organized by academic institutes, industry and other organizations.

Attendance in activities such as workshops, seminars: The faculty members will be encouraged to participate in workshops, seminars, conferences, symposia at national and international levels. At present the Institute provides funds for attending conferences and seminars. The frequency of such events shall be enhanced by augmenting the funds received through this proposal.

Improve research capabilities: 100% of the faculties at IIIT Manipur have PhD degree and the faculty members will be encouraged to improve and strengthen their knowledge in advance area of research through quality improvement programs, workshops, seminar and publication in Tier-I journals. The teaching staff will be encouraged carryon research activities and to improve research capabilities of the department with the support of TEQIP funding. Improving research funding and administrative support to laboratory infrastructure may additionally help their engagement in state of the art research. Additionally, sponsoring faculties to advance research labs/IITs/IISc may be proposed.

Actions	2017	2018	2019	2020
Basic and advanced pedagogy				
Subject/domain knowledge enhancement				
Attendance in activities such as workshops, seminars				
Improve research capabilities				

▪ **Staff training (Technical & Administrative staff)**

Administrative Staff: The Administrative staff will be encouraged to attend and participate at IIT Guwahati and other IITs/IISc in extension lectures, seminars, workshops, and other specialized training courses organized by academic institutes and other

organizations on attitudinal and mindset change, personality development, communication skills, office modernization, qualification upgradation, motivation, advanced learning in their relevant occupational areas, and other felt needs.

Technical Staff: The technical staff will be encouraged to attend and participate at IIT Guwahati and other IITs/IISc in extension lectures, workshops, seminars, and other specialized training courses organized at academic institutes, industry and other organizations. They will be encouraged to participate in extension lectures, workshops/seminars on attitudinal and mindset change, personality development, communication skills, qualification upgradation, motivation, operation and maintenance of modern laboratory, and advanced equipment, advanced learning in their relevant occupational areas, and other felt needs.

Actions	2017	2018	2019	2020
Participation in lectures, seminars, workshops specialized training courses				

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

IIIT Manipur is eligible for imparting PG and PhD education and in the following 6-18 months, PhD admissions and two Master's programs will be proposed; However, to aid the PhD education sponsorship in terms of funds for attending conferences/workshop/GAIN/ICT academy may be provided from TEQIP support. In conjunction, advance research laboratories may be envisioned to cater the PG and PhD programs. With an financial aid, IIIT Manipur may also plans to admit near-by engineering college faculty to PG and PhD programs.

Actions	2017	2018	2019	2020
PhD Admissions				
PG Courses				

▪ **Investing in smart classrooms, campus Wi-Fi, e-library etc.**

IIIT Manipur campus is already Wi-Fi enabled and most of the faculty organize their lectures with the help of multimedia presentations. however the current facility can be further strengthen, with an additional objective of implementing e-library by subscribing to diverse e-resources on the Institute server.

Actions	2017	2018	2019	2020
Smart Classrooms				
Wi-Fi Campus				
E-Library				

- **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**

Summer courses could be arranged for improving the academic performance. Along with summer coaching for GATE, CAT etc. It may be proposed to create a separate book bank for SC/ST students. Institute has already assigned Assistant Professors as student counselor and faculty advisors which also guide and monitors the progress of the academically weak students.

Actions	2017	2018	2019	2020
Semester Courses				
Book Bank				
Student Counselor/Faculty Advisor				
Summer Coaching				

- **Instituting academic and non-academic reforms including programme flexibility (Is there any need to revise the curriculum? When it was last revised?)**

IIT Guwahati is the mentor institute for both the new Institute, IIIT Manipur and IIIT Guwahati. The IIIT Manipur BOG has approved to implement the academic curriculum of IIIT Guwahati. The current curriculum is based on credit system and strong emphasis is given on student centric and self learning methodologies. In order to incorporate more practical learning IIIT Manipur is planning for setting-up various labs such as Language Engineering laboratory, Robotics laboratory, and Data science laboratory. The following can be proposed to strengthen and keep the curriculum up-to-date;

- In the monthly faculty meeting, suggestion can be invited on the current curriculum
- Incorporation of more hardware and software labs in curriculum

Actions	2017	2018	2019	2020
Increased Lab Courses				
Senate/Faculty Suggestions				

(b) Improving employability of the students

At IIITM, a Training Division is in place to train our UG students in various industries as a part of curriculum and an assistant professor is in-charge of Training Division. Under the training division various programme have been organized since its inception in July 2015, these program includes training on Java Business Application, Python, Linux, LaTeX, Sculab, Web Application

Development and apart from these a programme on Burmese language is already underway for the student as well as industry personal at Imphal. The program planned for this year are training on C, CPP, Arduino, Php, MySql, Cyber Security and Forensics, Network Administration, Big data analysis using Python, Android application development.

At IIITM the internships are compulsory part of the curriculum which was targeted to improve the student-industry interaction, leading to better employability opportunities. In addition, faculties at IIIT Manipur encourages industry based final year projects. In addition to technical knowledge, the soft skills are essential ingredient for improving the employability of graduates. For imparting some of these skills, students are assigned assignment / project problems to solve independently or in group. Seminar presentation is an integral part for improving the communication skills. IIIT Manipur has also identified an in-house software development cell which is responsible for development/ outsource/ modify of any form of software requirement in the institute. Engagement of students in this cell can aid their problem solving skills. Currently, this cell is working for library management system and examination control system of IIIT Manipur. However, the following steps shall also be employed to improve employability of students.

- To improve the entrepreneurship skills, interactive session with experienced people from industry shall be organized on a regular basis.
- Lectures by experts on communication skills shall also be required for improved results in this area.
- Increased interaction with industries through MoUs and frequent mutual visits.
- Database of alumni shall be maintained for regular interaction with them that shall increase the job opportunities of graduates through referrals and campus placements.
- Annual events shall be organized to provide opportunities to students to demonstrate their project outcomes or innovations for visibility in industries
- Training on CAD/CAM/CFD software e.g. TCAD, Cadence, Solid Edge, FLUENT or other professional software
- Training on MATLAB and ERP related software.
- Summer courses for weaker students appearing for improvement/backlog in different courses of studies.
- Special support classes for improving the academic performance of SC/ST/OBC/academically weak students.
- Pool campus may allow students to attend written test/interviews/ for various industries visiting to IIT, Guwahati.
- Practice in GD, Personal Interviews, Counseling for written test, procedure for applying will be given through Training Division.
- To organize lectures from top management industries

Actions	2017	2018	2019	2020
Semester Courses				
Pool Campus				
Technical and Management Experts from Industries				
Summer Coaching				
Training on Professional Software				
Soft Skills Training				
Entrepreneurship Skill workshop or visits				

Increasing interaction with industry (What are the industries located in the vicinity? What role of industry is perceived for the institute?)

Manipur is not having any significant presence of any big corporate house or MNC, however we could turn towards the Public Sector Unit of oil, natural gas, hydro-power etc present in North-Eastern India. In order to improve the interaction of IIIT M with industry the following shall be employed;

- Provision to send students to the various programs organized by the Entrepreneur Development Cell at IIT Guwahati.
- Provision to organize one day industrial tours for students.
- Provision to invite industry specialist for delivering lectures.
- Provision to organize a month duration industry tours for pre-final year students.
- Provision to encourage industrial projects for students through sponsorship.
- Establishment of Entrepreneur Development Cell at IIIT Manipur
- Regular update of syllabi according to industrial needs

Actions	2017	2018	2019	2020
Student-Industry visits				
Industry experts lectures				
Entrepreneur Development Cell				
Industry Tours				

○ **Student career counseling and placement**

Faculty Advisors and Training Division are responsible for the student career counseling and placement. IIIT Manipur has a functional Training division which has been extensively involved in organizing various training workshops and courses for improving the employability of not only the students of IIIT Manipur but also for the graduates of Imphal and Manipur state. Various training programme that have been organized since the inception of Institute (July 2015), includes training for the student as well as industry personal at Imphal, such as training program on;

1. Java Business Application
2. Python
3. Linux
4. LaTeX
5. Sculab
6. Web Application Development
7. Burmese language

The upcoming programs planned for this year are training on C, CPP, Arduino, Php, MySql, Cyber Security and Forensics, Network Administration, Big data analysis using Python, Android application development.

(c) **Increasing faculty productivity and motivation .**

▪ **sponsored research, consultancy and other revenue generating activities**

Although IIIT Manipur is in early stage of formation the Institute have an impressive record in revenue generation through R&D projects. The office of Research & Development was established for this function and an assistant professor is in-charge of this office. The R&D activities of IIIT M will get a further boost with the TEQIP program. Faculties are encouraged to take up sponsored projects from AICTE, ISTE, UGC, DST, MSME, CAPART, PGCL, CSIR, ADA, and North Eastern Council. It is anticipated that with the establishment of cutting edge research facilities, initiation grant for new faculties, support for publication/conference/workshops, creation of center for E-Learning and center for Design and Manufacturing will help increase the visibility of IIIT Manipur in the national and international scene thus will aid in the enhanced R&D activities. Apart from this the following points may be considered;

- Enhanced books and journal grants to the faculty.
- Industry Institute Interaction by arranging need based courses for industry
- By taking up students projects based on industry problems
- Industrial visits of students and faculty
- Visit of industry personnel to IIIT M

- Invited lectures by experts from industry and faculty
- Establishment of PG and PhD program and increasing intake of research students
- Financial assistance and contingencies to all PG and research students;
- Financial support to research students to attend national and international conferences;
- To take up consultancy projects under MODROB, CISR, DRDO, DST, UGC, AICTE etc.

2.3 Provide an action plan with timelines for

- **Obtaining autonomous institution status from UGC**

IIIT Manipur is an autonomous institute under MHRD

- **Improving the NBA accreditation status**

Not Applicable

2.4 Describe the following in brief:

- **Is any enhanced assistance / mentoring that the institution is looking forward from its ATU?**

Not applicable

- **Does your BoG need strengthening, if yes, then how? .**

No

- **Is there an ERP/MIS system existing, if yes, then any improvement, modification suggested.**

Currently, IIIT Manipur is in process of establishing central computer center and procurement of servers are underway. Apart from configuring, central e-resource library, Moodle, Intranet. ERP may also be approached as per ERP National Mission Project under NME ICT, Ministry of HRD, Govt. of India.

Actions	2017	2018	2019	2020
ERP System				

○ **Is there any mechanism i.e. special classes being conducted in the institution for improving the GATE score?**

Institute is having its first batch of students which are in their 4th semester and the faculty at IIIT Manipur employs the GATE pattern in setting quizzes and question paper. However, as our students progresses, an additional weekend or evening GATE classes may be organized for improving their GATE score.

Actions	2017	2018	2019	2020
Summer Coaching for GATE/CAT				

2.5 Provide a Twinning Plan with a high performing institute with the objective of capacity building knowledge transfer and developing long term strategic partnerships: (Twinning plan will be formalized into Twinning agreement after finalizing the twinning partner).

IIT Guwahati is the mentor institute for IIIT Manipur and helps IIITM with the administration, course guidance, faculty recruitment, knowledge transfer etc.

2.6 Is there any difficulty in Recruitment and selection of high-quality faculty? If yes, what are the reason & action plan to solve the issue?

No

2.7 Give an action plan for ensuring that the project activities would be sustained after the end of the Project.

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. In addition it is proposed to extend consultancy services, advisory services, testing and certification facilities, short term training programmes, extending theory and laboratory and workshop facilities to other Engineering institutions such as Manipur Institute of Technology, NIT, Manipur University etc. are expected to generate considerable revenue to the institute. The new e-learning training center, a new center for Design and Manufacturing will be established during the project duration that will aid in non-tuition revenue generation.

2.8 Describe briefly the participation of departments/faculty/students in the IDP preparation.

During the preparation of the IDP, the arrangements have been made for the wider participation of faculty members across all the departments. Activities pertaining to the departments have been proposed to be initiated from within the individual sections of the department for which Department Heads were informed. Such proposals after consolidation by Head of the department has been communicated to coordinator who shall direct it to the concerned officials. The course of action can be summarized as follows;

- Appointment of Dean, R&D as the coordinator for the preparation of IDP.
- Coordinator held discussions with the Head of Departments.
- Departmental head held discussion with all faculty members.
- Preparation of consolidated proposal by the Head of Departments
- Consolidation of the final IDP by the coordinator based on the inputs of each department.
- Interim Director's approval taken on IDP.

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