

Dear Viewer,

You are requested to go through the following Institutional Development Proposal (IDP) of Tripura Institute of Technology, Narsingarh prepared for obtaining World Bank assisted TEQIP-III project. Your valuable suggestion to improve the IDP is solicited from this end. You may please mail your suggestion to mail2tit@gmail.com or bijoy.upadhyaya@titagartala.ac.in by 24/02/2017.

With regards

Principal
Tripura Institute of Technology,
Narsingarh

**TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME
(TEQIP)**

PHASE-III

**INSTITUTIONAL DEVELOPMENT PROPOSAL
for
Sub-component 1.1
Institutional Development for Participating Institutions**



**Tripura Institute of Technology
Narsingarh,
PO: Agartala Aerodrome
Tripura(W)
Pin 799009**

1. INSTITUTIONAL BASIC INFORMATION

1.1 Institutional Identity

- Name and address of the Institution : Tripura Institute of Technology, Narsingarh
P.O. Agartala Aerodrome
Tripura (W), Pin 799009
- Year of establishment :2007
- Is the Institution AICTE approved? : Yes
Furnish AICTE approval No. :F.No. Eastern/1-2811866640/2016/EOA Date: 05-Apr-2016
- Type of Institution : Govt. funded
- Status of Institution : Non-autonomous
- Name and Designation of Head of the Institution (Full time appointee) : Sri Arup Kumar Das Chaudhuri, Principal (I/C)

1.2 Academic Information:

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

Sl. No	Title of programmes	Level (UG, PG, PhD)	Duration (Years)	Year of starting	AICTE sanctioned annual intake	Total student strength in all years of study
01	Civil Engineering	UG	4	2007	60	225
02	Electronics & Communication Engineering	UG	4	2007	60	225
03	Computer Science & Engineering	UG	4	2007	60	225
04	Mechanical Engineering	UG	4	2007	60	225
05	Electrical Engineering	UG	4	2010	60	225

Accreditation Status of UG and PG programmes as on 31st December 2016:

Total no of programmes eligible for accreditation (at least one batch pass out): Five
 No. of programmes accredited: Nil
 No. of programmes applied for accreditation: three

- **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+12)	15=(1-14)	16= (3+5+7+9+11+13)
108	6	1	4	0	35	0	7	0	13	0	0	0	69	39	1

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).

The Institutional development plan for Tripura Institute of Technology, Narsingarh focuses towards all round development of the Institute and its stakeholders. The principal focus area of the IDP is to enhance the overall quality of technical education being imparted to the undergraduate students. To achieve the objective, emphasis has been given for faculty training to upgrade qualification, to improve subject competency, to enhance teaching skill, to promote research environment etc. Training needs of technical and administrative staff will be taken care to improve their skill, competency, efficiency and mind set. Efforts will be given to modernize existing laboratories and workshops for improving hands on practice of the learners. Modernization of existing library through hiring of e-learning contents and off-the-shelf accessibility of the same by students will be a priority sector to be focussed. Modernization and setting up of smart/virtual classrooms will be taken care under TEQIP-III project. The Institute is committed to have accreditation from NBA for all undergraduate engineering branches and thereafter marching towards obtaining academic autonomy from UGC. Starting of PG and Ph.D programs is one the important future plan of the Institute after meeting mandatory conditions.

One of the thrust area of the IDP is to have equity among its stake holders. Existing practices of improving the learning outcome of academically weak students will be continued. New and innovative methods to improve the performance of such weaker students will also be explored. Necessary efforts will be given to make the campus physically and socially gender-friendly. Activities have been planned to increase the interaction with the industry for improving placement of students. Exposure of industrial environment to faculty members with focus on joint R & D activities have been proposed. Scope for future sustenance of the institutional developmental activities through internal revenue generation and others have been presented in the IDP. Twinning plan with brief outline of the potential activities with a high performing institute have been proposed for improved overall academic scenario. Finally, the IDP preparation steps involve contribution from all of its direct stake holders.

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

Training Need Analysis (TNA) will be carried out to identify training requirement of faculty and staff of the Institute annually. Such TNA will help to identify individual, departmental and institutional training requirement to be fulfilled over a period of time. Accordingly, suitable faculty and staff development program may be conducted by the Institution to enhance the knowledge, skill and attitudes of the faculty and staff so that the objectives of the vision & mission of Tripura Institute of Technology, may be met up.

1. Following area will be focused for faculty training:

- i) **Qualification upgradation:** Faculty members will be encouraged for their qualification upgradation. Faculty with Bachelor Degree will be encouraged to have Masters Degree. Similarly, faculty with Master Degree will be encouraged to obtain Doctoral Degree. Financial incentive in terms tuition fee, book grants, one time to & fro TA etc. will be offered to such faculty members from the project fund. Payment of salary will be made from TEQIP-III project fund to the contractual teachers engaged against the regular teachers allowed to go for doing Ph.D/ M. Tech.

Timeline: Upto March 2020.

- ii) **Subject upgradation and Research competence:** Based on the TNA faculty members will be encouraged to undergo training program in reputed Institutions/Organizations to upgrade their subject knowledge. Such knowledge upgradation will improve the teaching quality which in turn will benefit the learning outcome of the students. In order to encourage faculty members for R & D work, research seed grant will be offered. Financial incentive to faculty members for publishing papers in quality journals and conferences will also be offered. Faculty members of reputed Institutes/Universities will be invited as research guide to promote R & D activities in the Institute.

Timeline: Upto march 2020.

iii) **Pedagogical Training:** To improve teaching skills of teachers, in house pedagogical training programs will be organized. Faculty members will be encouraged to participate in pedagogical training programs organized in reputed Institutions/Universities etc.

Timeline: Upto March 2020.

iv) **Participation in Conference /Workshop:-** Faculty members will be encouraged to participate in conferences / workshops / seminars etc. within and outside country, to present research papers or to attend seminars and workshops to improve research competency, skill development, exposure etc.

Timeline: Upto March 2020.

2) Staff training (Technical & Administrative staff)

Technical staff will be encouraged to undergo training programs for their skill development and improvement in laboratory managerial capability to renowned institution/organizations on the basis of TNA. Technical staff will also be encouraged to visit industry for their exposure and skill development. Such staff will be motivated to undertake training to operate the newly acquired equipment in laboratories and workshops.

Administrative staff will be provided with opportunity to upgrade their skill in various functional fields like computer, application software, modern office equipment and other areas as per requirement based on TNA. Focus will also be given to improve their efficiency and friendliness towards faculty and students.

Timeline: Upto March 2020.

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

Tripura Institute of Technology, Narsingarh is keen to introduce PG and PhD programs in all the five undergraduate engineering branches. However, starting of PG program is subject to obtaining accreditation from NBA for which all the branches taking necessary preparation. If PG and PhD programs are started, non-GATE scholars in PG and PhD scholars will be offered research assistantship from TEQIP project fund. New Laboratories will be set up to cater the need of PG programs as well.

Timeline: Upto March 2020.

- 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.**

TIT, Narsingarh understands the importance of modern teaching aids and facilities for improved teaching learning process. Hence, smart / virtualclassrooms with all modern teaching aids and high speed internet connectivity in each department will be set up. In addition, existing classrooms will be upgraded with modern teaching aids for improved learning outcome.

Campus Wi-fi has become an important facility for students, faculty and staff to be offered. Accordingly, the Institute likes to have robust and secured campus Wi-Fi facility to its stake holders.

The Institute is already offering e-library facility in small scale to the faculty members and students. However, the same facility need to be enhanced to match the strength of the students. Emphasis will be given to procure e-books, and other e-learning contents for the library. Modernization of the existing library is another important work to be carried out.

Timeline: Upto July 2018.

- 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**

The Institute is implementing equity plan under TEQIP-II project for improvising the performance of academically weak students. Academically weak students are identified through class tests by individual teachers. Remedial classes beyond the normal class hours are being conducted to improve the performance of these students. In addition, special classes are conducted by inviting subject experts from renowned institutions/Universities in the country. Same practices will be continued during TEQIP-III project also.

In addition, progress of academically weak students will be monitored periodically and remedial actions will be carried out. Tutorial classes will be

offered after dividing students into smaller groups. All these activities will help to improve the learning outcome of weaker students and transition ratio. In addition, peer-to-peer mentorship and tutoring over and above faculty mentors will also be explored.

In order to improve the soft skill of the students and to enhance their employability, special training sessions will be organized hiring services from professional organizations. Special care will be given to students for improvement of their communication skill using Language Laboratory. Tripura University will be requested to give more focus on soft skill enhancement courses in the curriculum.

Other focused area of equity action plan in TEQIP-III will be to

- Making the campus physically and socially gender-friendly by setting up of appropriate facilities.
- Special efforts for training/ internship/ placement of academically weak students.
- Ensuring institutional mechanisms to protect and address the needs and concerns of women students.

Timeline: Upto March 2020.

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

Academic Reforms:

Curricular Revision: It is important to revise the curriculum on regular interval. TIT, Narsingarh being affiliated to Tripura University, will request the University authority for periodic revision of the curriculum. In addition, the University authority will also be requested to include industry members in BOS to reduce the gap between industry and institute during the curriculum revision. The curriculum revision has been initiated in 2016. Additionally, following points may be emphasized into during curriculum revision:

- Innovations in teaching and student evaluation methodologies;

- Design skills, communication skills, entrepreneurial skills, information processing, creative and innovative thinking, leadership skills;
- Problem solving projects from Industry;
- Elective courses;
- Extensive use of media;
- Invited expert lectures from Industry and field;
- Visits to and training in Industry; and
- Multi-level and multi-background entry credit exemptions.

Improved Students Performance Evaluation: Regular conduction of different types of tests for assessing student performance. Students will be given feedback about their performance showing the evaluated answer scripts. Students will be suggested by the faculty concerned to improve their performance.

Performance appraisal of faculty by students: The practice of evaluation of faculty performance by students will be continued. The results of this will be used for taking remedial actions for improvement of teaching learning process. Exit assessment will be taken at the end of the course to find out an insight into the total effectiveness of the course, learning achievements and shortcomings which may be useful for future delivery of the course by the faculty. Faculty will be continuously motivated to improve performance. Incentive will be given to better performer.

Non-Academic Reforms:

Exercise of Autonomy: BoG is already functional in TIT, Narsingarh. In addition, Department of Higher Education, Government of Tripura will be requested to provide reasonable levels of administrative, financial and managerial autonomy.

Establishment of maintenance of four funds: Four funds have been established in the Institute already as per TEQIP-II project norms. Department of Higher Education, Govt. of Tripura will be requested to revise the same as per TEQIP-III project norms.

Generation, retention and utilization of revenue generated through variety of activities: Already necessary provision has been made by Department of Higher Education, Govt. of Tripura.

Filling-up existing teaching and staff vacancies: Department of Higher Education, will be requested to permit, BoG, TIT, Narsingarh to permit for the provision.

Delegation of decision-making powers to senior institutional functionaries with accountability: Power has been delegated as per TEQIP-II project norms. Same may be continued in TEQIP-III project also.

Timeline: Upto March 2020.

(b) Improving employability of the students

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

During the TEQIP-II project, the Institute has constituted Industry-Institute-Interaction Cell (IIIC). Certain activities like meeting with industry professionals, industry visit by students, workshop with industry expert as resource person, collaborative project work with industry, establishment of Centre of excellence in VLSI with industry etc. were carried out.

Tripura is a preferred destination for small and medium scale industries like rubber based plant, cold rolling steel plant, cement plant, tea industry etc. Industrial infrastructure projects like growth centre, export promotion industrial park, food park etc. are being set up.

In TEQIP-III following activities will be carried out:

- 1) Strengthening I-I-I cell and enhancing its activities. Periodic meeting with industry members to be organized.
- 2) Activities undertaken during TEQIP-II will be continued in TEQIP-III project period.
- 3) MoU with industry for collaborative project, exchange of expertise, Joint R&D activities etc.
- 4) Exploring the opportunity for industry sponsored lab set up for R&D work.
- 5) Organizing visit of faculty and staff in industry.

Timeline: Upto March 2020.

8) Student career counseling and placement

Training and Placement (T&P) cell of TIT, Narsingarh will provide placement assistance to the students in relevant industries/companies. The T&P cell will provide carrier counseling to the students. The Cell will work on liaising with the senior executives of industries/companies to assess the requirement of industries or organizations. The cell will facilitates different activities like aptitude test, Group discussion etc. among the students. It will organize guest lectures/workshops inviting corporate professionals from reputed organizations to enhance placement of students. It will play an active role in organizing campus recruitment drives within and outside the institution for enhancing the campus placement opportunities of students.

(c) Increasing faculty productivity and motivation

9. Sponsored research, consultancy and other revenue generating activities

Following activity will be carried out to enhance faculty productivity and motivation of faculty members.

- Faculty members will be encouraged to obtain industry sponsored research projects. Administrative and matching financial support will be offered from project fund to encourage the faculty members.
- Faculty members with Doctoral Degree will be encouraged to enroll PhD scholars. Such faculty members will be encouraged to establish Research Centres in the Institute in collaboration with other Universities/ Institutes /R & D Organizations / Industry / funding agencies etc.
- Faculty members with expertise, will be encouraged to undertake consultancy assignments for internal revenue generation. Financial incentive will be offered to such faculty members as per existing provisions.
- Faculty members will be encouraged to attend seminar, Conferences, Workshops etc. within and outside country to increase exposure and enhance R & D activity.

Timeline: Upto March 2020.

2.3 Provide an action plan with timelines for

1. Obtaining autonomous institution status from UGC

TIT, Narsingarh has applied for accreditation by NBA for three eligible branches. The Self-Assessment Report (SAR) and pre-qualifier has already been submitted. On obtaining NBA for three branches, TIT, Narsingarh will be eligible for applying Academic autonomy from UGC.

Expected timeline for autonomy is July 2019.

2. Improving the NBA accreditation status

Application for NBA of the left out two branches i.e. Civil Engineering and Electrical Engineering will also be submitted. Necessary pre-qualifier and SAR will be prepared by the two departments.

Expected timeline for submitting pre-qualifier is July, 2017.

2.4 Describe the following in brief:

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

Affiliating University has an important role to play in upgrading overall quality of teaching learning process in an Institution. Curriculum revision at regular interval is one of the most important activity of the affiliating University. In addition, the affiliating University deputed one faculty representative in BOG of the Institution. Following assistance ship / mentoring activities are expected from the affiliating University

- Periodic revision of curriculum involving expert faculty and industry professionals.
- Special emphasis on e-learning through curriculum revision.
- Permission to use library facility to the faculty, staff and students of TIT for promoting research and improved learning outcome.
- Joint placement activity to enhance employability of students.
- Guidance and suggestion to improve student learning outcome and employability.
- Joint organization of seminar, workshop, conference etc.
- Provision of faculty exchange program.
- Initiatives for collaborative research projects.
- Supporting to organize special and remedial classes providing faculty / resource person.

- Provision for supervising Ph.D. scholars under affiliating university solely by the faculty members of TIT.
- Publication of result in shortest possible time.

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

BOG in present form is performing its role satisfactorily.

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

At present, this Institute does not have any ERP/MIS system. However, attempt has been taken to develop a web based Institutional MIS software under TEQIP-II and is expected to be operational from April, 2017. Second phase of development for inclusion of more modules will be undertaken in TEQIP-III.

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

The Institute as such do not conduct any special classes for improving GATE score. However, during regular classes emphasis is given on the subjects that are part of the GATE syllabus.

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).

Twinning plan of TIT, Narsingarh with one high performing Institute will be done at four levels:

- i) BOG ii) Institutes management iii) Faculty and iv) Students.

Two BOGs will meet for exchange of views in respect of overall Institutional Development and other similar areas. In respect of improved Institutional management, two head of the Institutions and senior faculties will meet and exchange their ideas, will develop detailed action plan for improved learning outcome and employability of students.

Provision for faculty and staff exchange program between the two institutions will be arranged for wider experience of faculty in new and different environments. Arrangements will be made for student exchange programs as well. Student exchange program is expected to provide opportunity to learn in different environment and culture. Such faculty/student exchange program will develop networking among them for various academic and research activities. These twinning arrangement will help to organize joint conference, workshop, seminars etc. for mutual benefit. Scope of twinning plan may be suitably modified after finalization of twinning partner.

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?

TIT, Narsingarh is state Government run Institute. The recruitment process of faculty member is taken care by Tripura Public Service Commission, Agartala. Candidates are available for entry level posts i.e. Assistant Professor. But for senior faculty positions like Associate Professor and Professor, there is insufficient applicants leading to vacancy against those posts. Department of Higher Education, Government of Tripura is taking steps to recruit persons in these posts on regular or contract basis.

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

To sustain project activities beyond project period following action will be taken besides government aids (being a state government institute)

- 1) Internal revenue generation through consultancy, continuing education program, training and workshop for industry professionals etc.
- 2) Maintenance of four funds as initiated during TEQIP-II project period. This fund will help to continue various institutional activities to sustain beyond project period.
- 3) Internal revenue generation through tuition fee from students.
- 4) Development and sustenance of academic activities through long term relationship between Institutions developed through twinning arrangement.
- 5) Other suitable schemes will be explored and undertaken as per advice of the mentoring institute / BoG.

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

The Institutional development plan of this Institute has been prepared with involvement of faculty members, staff and students. Initially, a draft IDP has been prepared by few senior faculty members of the Institute with brainstorming sessions. The draft, so prepared was put for discussion, comments, and suggestions in a meeting involving faculties, staff and students. Suggestions obtained through discussion in the meeting has been incorporated and finalized. The IDP is put in the Institute website inviting comments for improvement from students, parents, industry professionals, employers and society at large.